

**HISTORY OF MISO, SOYBEAN JIANG (CHINA)
JANG (KOREA) AND TAUCO / TAOTJO (INDONESIA)
(200 BC - 2009):
EXTENSIVELY ANNOTATED
BIBLIOGRAPHY AND SOURCEBOOK**

SOYINFO CENTER

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**Including American Miso Co. (North Carolina), Miyako Oriental Foods (California),
Ohio Miso Co., South River Miso Co. (Massachusetts),
Shin-Mei-Do Miso Co. (Denman Island, British Columbia, Canada),
Elf Works & Wizard's Cauldron (North Carolina)**

Compiled

by

William Shurtleff & Akiko Aoyagi



2009

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History of Elf Works (North Carolina)
History of Wizard's Cauldron (North Carolina)

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DEDICATION AND ACKNOWLEDGMENTS

This book is dedicated to the pioneering first generation of Japanese miso makers in the USA (1907-1919) and to the first generation of Caucasian miso makers (1978-1982)

Part of the enjoyment of writing a book lies in meeting people from around the world who share a common interest, and in learning from them what is often the knowledge or skills acquired during a lifetime of devoted research or practice. We wish to give deepest thanks...

Of the many libraries and librarians who have been of great help to our research over the years, several stand out:

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This book, now doubt and alas, has its share of errors. These, of course, are solely the responsibility of William Shurtleff.

INTRODUCTION

Brief Chronology of Miso, Soybean Jiang (China), Jang (Korea), and Tauco / Taotjo (Indonesia)

Miso, or “fermented soybean paste,” is one of East Asia’s most important soyfoods. Miso is an all-purpose high-protein seasoning, which has no counterpart among Western foods or seasonings. Made from soybeans, rice or barley, and salt, its smooth or chunky texture resembles that of soft peanut butter. It comes in a wide range of warm, earthy colors ranging from light yellows to rusty reds, rich chocolate browns, or loamy blacks. Each miso has its own distinctive flavor and aroma, which for the darker, more traditional varieties is savory, and sometimes almost meaty, while for the lighter-colored types is subtly sweet and delicately refreshing. Miso’s range of flavors and colors, textures and aromas, is at least as varied as that of the world’s fine wines or cheeses.

Today miso is made by a small number of companies in the United States, Canada, and Europe, and (as miso or miso products) is widely available at supermarkets, natural- and health food stores, and Asian stores.

200 B.C. (approx.) - Soybean jiang is first mentioned in China in the *Wushi'er Bing Fang [Prescriptions for Fifty-Two Ailments]*.

544 A.D. - The *Qimin Yaoshu (W.-G. Ch'i Min Yao Shu)*, by Jia Sixie in China gives the first detailed descriptions of making soybean jiang - and other soyfoods.

701 - Soybean hishio, miso, and soy nuggets start to be made in Japan by the *Hishio Tsukasa*, a government bureau. Reference to this is found in documents published between 730 and 748.

901-08 - The modern word for *miso* first appears in Japan in the *Sandai Jitsuroku*.

927 - The *Engi Shiki* gives the first details about the production of soybean hishio/miso in Japan.

1597 - Miso is first mentioned by a Westerner, the Florentine Francesco Carletti; he calls it *misol*.

1712 - Englebert Kaempfer, a German who lived in Japan, is the first European to give detailed descriptions of how miso and shoyu are made in Japan. Also mentions koji.

1727 - Miso is first mentioned in an English-language publication, *The History of Japan*, by E. Kaempfer. He

spells it “*Midsu*, a mealy Pap, which they dress their Victuals withal, as we do butter.”

1779 - The word “miso” (“that is used as butter”) first appears in an English-language publication, the *Encyclopaedia Britannica*.

1847 - The word “miso” first appears in print in the United States, in a letter from T.W.H. of Cambridge, Massachusetts, to the *Farmers' Cabinet and Herd Book*.

1907 - Miso is first made commercially in the continental United States by Yamane Miso, Sakana Sho in Sacramento, California. The next four commercial miso makers in the continental USA all started in California, owned and operated by Japanese: 1908 - Sanyo Shokai, in Melrose (near Alameda); 1913 – Marumi Miso Seizo-sho, in Los Angeles; 1917 – Fujimoto Co., in San Francisco (Brand: Kanemasa Miso). 1919 – Norio Co., in San Francisco (Type: Shiro miso = Sweet white miso).

1908 - Miso is first made commercially in Hawaii by the Hawaiian Yamajo Soy Company of Honolulu.

1921 - The term “bean paste” is first used to refer to miso by J.L. North of England in the *Illustrated London News*.

1929 - Amano Brothers, Canada’s first commercial miso maker, starts in Vancouver, British Columbia. Founder: Mr. Teiichi Amano.

1960 - Dr. C.W. Hesseltine and K. Shibasaki, of the Northern Regional Research Laboratory in Peoria, Illinois, publish the first of many important scientific articles on miso.

1963 - Michio and Aveline Kushi, teachers of Macrobiotics in Boston, start to teach Americans about miso.

1966 April - Aveline Kushi (with Evan Root) starts Erewhon, a pioneering retailer in Boston, that soon starts selling miso.

1968 - Erewhon expands to become an importer and distributor of natural and macrobiotic foods. Their first two misos, Mugi Miso and Hacho Miso, are imported from Japan.

1976 June - Miyako Oriental Foods, a division of Yamajirushi Miso Co. in Japan, starts making miso in Los Angeles. Owned by Noritoshi Kanai. Brands: Yamajirushi, Kanemasa, Yamaizumi.

1976 Sept. - *The Book of Miso*, by Shurtleff and Aoyagi, is published by Autumn Press of Hayama, Japan. This is the first book about miso in the Western world. In Aug. 1977 its companion book, *Miso Production*, is published by New-Age Foods Study Center (Lafayette, California) for those who want to make miso commercially.

1978 Oct. - The Ohio Miso Co., the first Caucasian-run miso company in the Western world, is founded by Thom Leonard and Richard Kluding. They begin miso production on 13 March 1979.

1978 Nov. - Joel Dee of Edward & Sons (New Jersey) launches Natural Instant Miso Cup, an instant miso soup made with freeze-dried miso from Japan.

1978 Dec. - Miyako Oriental Foods of Los Angeles introduces Cold Mountain Firm Granular Rice Koji, the first koji sold commercially in the USA. In 1979 they start selling Cold Mountain Miso, the first miso with an American-style brand.

1979 Oct. - John and Jan Belleme arrive in Japan to study traditional miso- and koji-making with the Onozaki family in Yaita, Japan. They are the first Caucasians to do this, and then to return to the West to start making miso commercially. From 1981 on they write many superb articles about miso, published in America.

1979 April - Shin-Mei-Do Miso is founded by Lulu and Yasuo Yoshihara in British Columbia, Canada.

1981 April - John Troy of Elf Works, Ltd. in Chapel Hill, North Carolina, launches Hot Stuff, an early and very successful American miso product. He first learned about miso from Joel Dee.

1981 Aug. - John and Jan Belleme begin full-time, large-scale production of miso and koji at Erewhon Miso Co. in Rutherfordton, North Carolina. By early 1982 their company is renamed American Miso Co. with Barry Evans as the new owner.

1982 Oct. 25 - Christian and Gaella Elwell start making miso and koji at South River Miso Co. in Conway, Mass. Earlier that year they purchased The Ohio Miso Co.

ABOUT THIS BOOK

This is the most comprehensive book ever published about miso, soybean jiang, etc. It has been compiled, one record at a time over a period of 33 years, in an attempt to document the history of soybeans and soyfoods. It is also the single most current and useful source of information on this subject.

This is one of more than 50 books compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyinfo Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features detailed information on:

- 69 different document types, both published and unpublished.
- 3,641 published documents - extensively annotated bibliography. Every known publication on the subject in every language.
- 377 original Soyinfo Center interviews and overviews never before published.
- 508 unpublished archival documents
- 418 commercial soy products.

Thus, it is a powerful tool for understanding the development of this subject from its earliest beginnings to the present.

Each bibliographic record in this book contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English language publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given). For most books, we state if it is illustrated, whether or not it has an index, and the height in centimeters.

For commercial soy products (CSP), each record includes (if possible) the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as advertisements, articles, patents, etc.) are also given.

A complete subject/geographical index is also included.

ABBREVIATIONS USED IN THIS BOOK

A&M = Agricultural and Mechanical	ml = milliliter(s)
Agric. = Agricultural or Agriculture	mm = millimeter(s)
Agric. Exp. Station = Agricultural Experiment Station	N. = North
ARS = Agricultural Research Service	No. = number or North
ASA = American Soybean Association	Nov. = November
Assoc. = Association, Associate	Oct. = October
Asst. = Assistant	oz = ounce(s)
Aug. = August	p. = page(s)
Ave. = Avenue	P.O. Box = Post Office Box
Bld. = Boulevard	Prof. = Professor
bu = bushel(s)	psi = pounds per square inch
ca. = about (circa)	R&D = Research and Development
cc = cubic centimeter(s)	Rd. = Road
Chap. = Chapter	Rev. = Revised
cm = centimeter(s)	RPM = revolutions per minute
Co. = company	S. = South
Corp. = Corporation	SANA = Soyfoods Association of North America
Dec. = December	Sept. = September
Dep. or Dept. = Department	St. = Street
Depts. = Departments	tonnes = metric tons
Div. = Division	trans. = translator(s)
Dr. = Drive	Univ. = University
E. = East	USB = United Soybean Board
ed. = edition or editor	USDA = United States Department of Agriculture
e.g. = for example	Vol. = volume
Exp. = Experiment	V.P. = Vice President
Feb. = February	vs. = versus
fl oz = fluid ounce(s)	W. = West
ft = foot or feet	°C = degrees Celsius (Centigrade)
gm = gram(s)	°F = degrees Fahrenheit
ha = hectare(s)	> = greater than, more than
i.e. = in other words	< = less than
Inc. = Incorporated	
incl. = including	
Illust. = Illustrated or Illustration(s)	
Inst. = Institute	
J. = Journal	
J. of the American Oil Chemists' Soc. = Journal of the American Oil Chemists' Society	
Jan. = January	
kg = kilogram(s)	
km = kilometer(s)	
Lab. = Laboratory	
Labs. = Laboratories	
lb = pound(s)	
Ltd. = Limited	
mcg = microgram(s)	
mg = milligram(s)	

HOW TO MAKE THE BEST USE OF THIS BOOK

Here are a few tips to help you get the most out of the information contained in this book.

Chronological Order: The publications and products in this book are listed with the earliest first and the most recent last. Within each year, references are sorted alphabetically by author. If you are interested in only current information, you might want to start reading at the back, just before the indexes.

A Reference Book: Search It with Adobe Acrobat: Like an encyclopedia or any other reference book, this work is meant to be searched - to find exactly the information you are looking for - more than to be read.

At the small "Find" box (top center) click the down arrow. Click "Open full Acrobat search." In the box "What word or phrase would you like to search for?" type in your word or phrase. Then click search. The results will appear below. Try clicking the first one - to see how it works.

How to Use the Index: A subject and country index is located at the back of this book. It will help you to go directly to the specific information that interests you. Browse through it briefly to familiarize yourself with its contents and format.

Each record in the book has been assigned a sequential number, starting with 1 for the first/earliest reference. It is this number, not the page number, to which the indexes refer. A publication will typically be listed in each index in more than one place, and major documents may have 30-40 subject index entries. Thus a publication about the nutritional value of tofu and soymilk in India would be indexed under at least four headings in the subject and country index: Nutrition, Tofu, Soymilk, and Asia, South: India.

Note the extensive use of cross references to help you: e.g. "Bean curd. See Tofu."

Countries and States/Provinces: Every record contains a country keyword. Most USA and Canadian records also contain a state or province keyword, indexed at "U.S. States" or "Canadian Provinces and Territories" respectively. All countries are listed under their region or continent. Thus for Egypt, look under Africa: Egypt, and not under Egypt. For Brazil, see the entry at Latin America, South America: Brazil. For India, see Asia, South: India. For Australia see Oceania: Australia.

Most Important Documents: Look in the Index under "Important Documents -."

Organizations: Many of the larger, more innovative, or pioneering soy-related companies appear in the subject index - companies like ADM / Archer Daniels Midland Co., AGP, Cargill, Dupont, Kikkoman, Monsanto, Tofutti, etc. Worldwide, we index many major soybean crushers, tofu makers, soymilk and soymilk equipment manufacturers, soyfoods companies with various products, Seventh-day Adventist food companies, soy protein makers (including pioneers), soy sauce manufacturers, soy ice cream, tempeh, soynut, soy flour companies, etc.

Other key organizations include Society for Acclimatization (from 1855 in France), American Soybean Association, National Oilseed/Soybean Processors Association, Research & Development Centers (Peoria, Cornell), Meals for Millions Foundation, and International Soybean Programs (INTSOY, AVRDC, IITA, International Inst. of Agriculture, and United Nations). Pioneer soy protein companies include Borden, Drackett, Glidden, Griffith Labs., Gunther, Laucks, Protein Technologies International, and Rich Products.

Soyfoods: Look under the most common name: Tofu, Miso, Soymilk, Soy Ice Cream, Soy Cheese, Soy Yogurt, Soy Flour, Green Vegetable Soybeans, or Whole Dry Soybeans. But note: Soy Proteins: Isolates, Soy Proteins: Textured Products, etc.

Industrial (Non-Food) Uses of Soybeans. Look under "Industrial Uses ..." for more 17 subject headings.

Pioneers - Individuals: Laszlo Berczeller, Henry Ford, Friedrich Haberlandt, A.A. Horvath, Englebert Kaempfer, Mildred Lager, William Morse, etc. **Soy-Related Movements:** Soyfoods Movement, Vegetarianism, Health and Dietary Reform Movements (esp. 1830-1930s), Health Foods Movement (1920s-1960s), Animal Welfare/ Rights. These are indexed under the person's last name or movement name.

Nutrition: All subjects related to soybean nutrition (protein quality, minerals, antinutritional factors, etc.) are indexed under Nutrition, in one or more of 14 subcategories.

Soybean Production: All subjects related to growing, marketing, and trading soybeans are listed under Soybean Production. E.g. Soybean Production: Nitrogen Fixation, or

Soybean Production: Plant Protection, or Soybean Production: Variety Development.

Other Special Index Headings: Browsing through the subject index will show you many more interesting subject headings, such as Industry and Market Statistics, Information (incl. computers, databases, libraries), Standards, Bibliographies (works containing more than 50 references), and History (soy related).

Commercial Soy Products: All Soyinfo Center sourcebooks that focus on a specific soyfood (tofu, soymilk, tempeh, miso, etc.) or geographical area (Africa, Japan) contain extensive information about every known commercial soyfood product - a unique feature. We list the product name, manufacturer's name, address, and phone number, year and month of introduction, ingredients, weight-packaging-price, how stored, nutritional analysis, and documentation on sources of additional information on that product.

SoyaScan Notes: This is a term we have created exclusively for use with this database. A SoyaScan Notes Interview contains all the important material in short interviews conducted and transcribed by William Shurtleff. This material has not been published in any other source. Longer interviews are designated as such, and listed as unpublished manuscripts. A transcript of each can be ordered from Soyinfo Center Library. A SoyaScan Notes Summary is a summary by William Shurtleff of existing information on one subject.

"Note:" When this term is used in a record's summary, it indicates that the information which follows it has been added by the producer of this database.

Asterisks at End of Individual References.

1. An asterisk (*) at the end of a record means that Soyinfo Center does not own that document. Lack of an asterisk means that Soyinfo Center owns all or part of the document.
2. An asterisk after eng (eng*) means that Soyinfo Center has done a partial or complete translation into English of that document.
3. An asterisk in a listing of the number of references [23* ref] means that most of these references are **not** about soybeans or soyfoods.

Documents Owned by Soyinfo Center. Lack of an * at the end of a reference indicates that the Soyinfo Center Library owns all or part of that document. We own roughly three fourths of the documents listed. Photocopies of hard-to-find documents or those without copyright protection can be ordered for a fee. Please contact us for details.

Document Types: The SoyaScan database contains 51 different types of documents, both published (books, journal articles, patents, annual reports, theses, catalogs, news releases, videos, etc.) and unpublished (interviews, unpublished manuscripts, letters, summaries, etc.).

Customized Database Searches: This book was printed from SoyaScan, a large computerized database produced by the Soyinfo Center. Customized/ personalized reports are "The Perfect Book," containing exactly the information you need on any subject you can define, and they are now just a phone call away. For example: Current statistics on tofu and soymilk production and sales in England, France, and Germany. Or soybean varietal development and genetic research in Third World countries before 1970. Or details on all tofu cheesecakes and dressings ever made. You name it, we've got it. For fast results, call us now!

BIBLIO: The software program used to produce this book and the SoyaScan database, and to computerize the Soyinfo Center Library is named BIBLIO. Based on Advanced Revelation, it was developed by Soyinfo Center, Tony Cooper and John Ladd.

History of Soybeans and Soyfoods: This book has a corresponding chapter in our forthcoming scholarly work titled History of Soybeans and Soyfoods (4 volumes). Manuscript chapters from that book are now available on our website, www.soyinfocenter.com.

About the Soyinfo Center. An overview of our publications, computerized databases, services, and history is given on our website.

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HISTORY OF MISO AND SOYBEAN JIANG

1. *Shijing* [The book of odes]. 1000? B.C. China. Passage on soy reprinted in C.N. Li 1958 #1, p. 13-18. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Shih Ching*. Zhou dynasty (1045-256 BC). This is the first of the Five Classics, containing 305 folk songs and poems by unknown writers. They were collected from about the 11th century BC to about the 7th century BC. But they may have been sung, spoken, and in circulation for hundreds of years before they were actually written down. “The anthology in something like its present form was certainly in existence at the time of Confucius (551-479 B.C.), for Confucius advocates its study and cites frequently from ‘The Songs’” (Dobson 1968, p. xix). The ancient character *shu*, generally thought by early commentators to mean “soybeans,” appears in six of these odes. The odes, each of which had a name, were arranged in the order that has been handed down to us by Mao Hêng, one of the early commentators; in about 200 BC, he arranged the Odes according to categories: (1) *Feng*, folksongs from the principalities, (2) *Ya*, court music, further divided into *Da Ya* and *Xiao Ya* (greater and lesser), and (3) *Song*, ceremonial odes. The odes were first numbered by Western scholars. B. Karlgren (in his translations, 1944-1950) kept Mao Hêng’s order, but gave each ode a sequential number so that it could then be referred to or cited by its number rather than by its more cumbersome Chinese title and category. Arthur Waley (1937) rearranged the odes by subject then gave them his own numbers. The following numbers are those of Karlgren, whereas the dates come from the 1966 book by W.A.C.H. Dobson, *The language of the Book of Songs*. Note that the songs are in reverse chronological order; the most recent come first.

Ode 154 (titled “Ode to the Seventh Month” (*Qiyue*); 8th to 7th century BC): In the sixth month we eat wild plums and grapes. / In the seventh month we boil mallows and soybeans (*shu*)... In the ninth month we make ready the stackyards [a field or yard containing grain or straw in stacks]. In the tenth month we bring in the harvest, which includes glutinous millet for wine, panicked millet for cooking, paddy (*ho*) and hemp, soybeans (*shu*) and wheat (Huang 2000, p. 18). This grouping of soybeans with other cultivated grains suggests that the soybean itself was a cultivated plant (H.T. Huang 2008, p. 45). Wilkinson (2000, p. 626) adds that this ode is a rhyming seasonal calendar in verse form, which gives the various farming and household tasks, and seasonal sights and sounds.

Ode 196 (9th to 8th century BC): Soybeans (*shu*) grow in the middle of the plain. The common people gather them.

Ode 207 (9th to 8th century BC): The year is drawing to a close. Reap the soybeans.

Ode 222 (9th to 8th century BC): We gather the soybeans. We gather the soybeans. We put them in square baskets and in round ones. Note 1. Zheng Xuan (W.-G. Chêng Hsüan), the most important commentator of the 2nd century AD, confirms that *shu* refers to the soybean and that soybean leaves are called *huo*. The leaves are paired (cooked or eaten) with beef and eaten in soup (C.N. Li, 1958, p. 13). Note 2. This is the earliest document seen (March 2003) that mentions soybean leaves or the use of soybean leaves as food.

Ode 245 (10th to 9th century BC): The one who first bore our people was lady Yuan of Jiang (W.-G. Yüan of Kiang). Her first child was a son—Prince Millet (*Hou Ji*; W.-G. *Hou Tsi*). His voice grew loud, then he crawled, and soon was able to stride and to stand firmly. So he sought food for his mouth. He planted the soil with soybeans; they were like streamers, rankly waving. The grain had plenty of ears. The hemp and the wheat grew thickly. He then grew many kinds of millet, and he initiated sacrifices.

Ode 300 (11th to 10th century BC): Prince Millet (*Hou Ji*) “sent down to the people a hundred blessings, the glutinous millet and the panicked millet, the grain that ripened quickly and that which ripened slowly, the grain that was planted early and that which was sown late, the soybean, and the wheat.”

Talk with H.T. Huang, PhD. 2001. July 28. Odes 297-300 are considered to be from the state of *Lu*, an ancient state located on what is today the Shandong peninsula in northeast China, about 300 miles southeast of Beijing. It was the home of Confucius.

Ode 186 “White colt” (*Baiju*) (9th to 8th century BC) mentions soybean leaves (*huo*). Unsullied / bright is the white colt. He eats the young shoots (*miao*) of my vegetable garden... Unsullied / bright is the white colt. He eats the soybean leaves (*huo*) of my vegetable garden. (Translated by H.T. Huang, PhD, July 2001). Dr. Huang adds: The text of the *Shijing* that has survived to this day is the one compiled by Mao Hêng in the early Han dynasty. Individual odes / poems are identified by number according to their sequence in Mao’s compilation.

Note 3. This is the earliest document seen (July 2002) concerning soybeans in China, in East Asia, or in the world, or the cultivation of soybeans in China, or in East Asia, or in the world. This document contains the earliest date seen for soybeans in China, or in East Asia, or in the world, or the cultivation of soybeans in China, or in East Asia, or in the world (11th century BC). The source of these soybeans was probably wild soybeans from China that were gradually

domesticated over the centuries. It states: “Gather soybeans. Fill the baskets.” Year: -10 to -7 century.

Talk with H.T. Huang, PhD, 2001. July 14. Most of this book is dated from about 1100 to 700 BC. Shortly before the Former Han dynasty, China was unified by the first emperor *Ch'in Ssu Huang Ti*. In 213 BC, he is said to have commanded his prime minister Li Ssu, to destroy “undesirable” books. This has come to be known as the “Burning of the Books.” But many were hidden away by scholars and others. Later, the Han emperor wanted to revive Confucius’ teaching. Old books appeared and scholars had to study and interpret their meaning. We are very much indebted to their interpretations. That is what Zheng Xuan is doing here. Some English translators, such as Waley (1937) and Karlgren (1950) translate the character *shu* as “beans” or “pulse.” However the earliest pulse known in China was the soybean, and early commentators agree that the character *shu* refers to soybeans. For details see Bray (1984, p. 511-15).

Huang (2000, p. 333, 380). Concerning early forms of *jiang* made from meat, fish, etc. without the use of soybeans: Ode 246 (10th to 9th century BC), celebrating a clan feast, states: “Sauces (*tan*) and pickles (*hai*) are brought / For the roast meat, for the broiled,…” The words *tan* and *hai* are no longer in use.” What did they mean? According to Zheng Xuan’s commentary: “*hai* is *jiang* made from meat. When the *jiang* is thin, it is called *hai tan*, and *tan* is the juice from *hai*.” Note 4. This is the earliest document seen (Dec. 2002) concerning early non-soy *jiang*, made with meat or fish.

The beginnings of aquaculture in China are suggested in the *Shijing* by poems which describe the spreading of fish nets, and of fish traps set at the openings of dams or dikes. Eight species of carp are mentioned. One poem titled “Magic Tower” says that the King visited the Magic Park where fish jumped in the Magic Pond by the Magic Tower. This pond might be a prototype of one for raising fish (Huang 2000, p. 62-63). If aquaculture was practiced, this would be the earliest document seen (March 2003) in connection with aquaculture—although soy was not used as a feed.

Wilkinson (2000). The odes in the *Shijing* were created over a 500-year period, then recorded in the standard cultivated language of northern China (p. 24). The *Shijing* is the oldest of the five Confucian classics selected by Han Wudi (140-88 BC); its short name is *Shi* (p. 475). It contains 305 folk songs / poems and ritual odes that are used as primary sources for studying the popular beliefs and customs of the Zhou period (1045-256 BC) (p. 619). It “mentions at least 44 definite or probable food plants and 260 of the common domestic and wild animals, birds, fishes, and insects found in the north during the first millennium BC” (p. 638).

2. *Shijing* [The book of odes]. 1000? B.C. China. Passage on soy reprinted in C.N. Li 1958 #1, p. 13-18. Undated. Translations by Legge (1871, 1960), Waley (1937), and Karlgren (1944, 1945, 1950). [Chi]

• **Summary:** Wade-Giles reference: *Shih Ching*. Continued: Earlier references to this book: Letter from Dr. H.T. Huang, expert on the history of Chinese food and agriculture. 1994. May 10. In China, before the Han dynasty (206 B.C. to 220 A.D.) there was a food in China named *Li* (probably pronounced *lai* in Cantonese) which seems to be very similar to today’s amazake in Japan. The earliest known reference to *li* is found in *Shih Ching* (*The Book of Odes*), which is a collection of love songs and ceremonial odes which date from about 1,000 B.C. to 600 B.C. The best known translation is that by Arthur Waley who titled it “The Book of Songs” (Grove Press, New York, 1978). *Li* is mentioned in Poem No. 279 (In Waley’s translation No. 156, p. 161). Waley translates it as “sweet liquor” as follows: “We make wine, make sweet liquor / We offer it to ancestor to ancestress.” It is also mentioned in Poem No. 180 (In Waley’s translation No. 262, p. 289). This time, for some strange reason, Waley translates it is “heavy wine” as follows: “So that we have something to offer, for guest, for stranger / To go with the heavy wine.”

Harlan (1992) states in *Crops and Man* 2nd ed. (p. 198): “Among the earliest compilations of Chinese literature is the *Book of Odes* (*Shih Ching*) assembled from bits and fragments from the 11th century to the middle of the 6th century BC. Botanically, it is the most informative of early literatures and mentions about 150 plants as compared to 55 in Egyptian literature, 83 in the Bible, and 63 in Homer (Ho, 1969). In the *Odes*, *Panicum* millet is mentioned 27 times, the mulberry 20 times, and *Artemisia* is mentioned 19 times with some 10 varieties. The soybean is first mentioned in 664 BC in connection with tribute paid to the Chou by the Shan-Jung (Mountain Jung) tribe.”

Note 4. This is the earliest document seen (Jan. 2004) that mentions hemp.

Wittwer et al. (1987): “Soybeans were first called ‘Shu’ and the word ‘Shu’ appears repeatedly in *Shijing* [the Book of Songs], which is one of the five Chinese classics dating from 1100–771 B.C. In [the song] ‘Xiao Ya’ from *Shijing* it is mentioned that ‘... in Central China there was the soybean and farmers collected it.’ Another Song, ‘Guofen’ (1,000 B.C.) states that ‘... in October rice and soybeans are collected.’”

Bray (1984:629): *Book of Odes* [ancient folk songs]. From Chou, -11th to -7th centuries (Dobson’s dating). Writers and compilers unknown. Translated by Legge (1871), Waley (1937), and Karlgren (1950). Page 533 states that both the hemp plant (*Cannabis sativa*; *ma*) and the cloth made from it are mentioned many times in the classical texts, including the *Shih Ching*, *Chou Li* and *Li Chi*.

Bo (1982): “This book, called *Shikyo* in Japanese, book mentions *hai*, a type of sauce made from animal flesh without bones.” This was a forerunner of Chinese *jiang*.

Hymowitz (1970) writing “On the Domestication of the Soybean” (*Economic Botany* 24(4):408-21) notes: It is the opinion of T.C. Hu (Pinyin: Hu Daojing) (1963) that the *shu* pictograph can be traced back to approximately the 11th century B.C. “The Book of Odes spans the period from the 11th century to 7th century B.C. during the reign of the royal house of Chou. The geographical area covered by the Book of Odes is essentially the winter wheat-kaoliang and winter wheat-millet regions... The character *shu* appears in odes 154 (8th–7th century B.C.), 196, 207, 222 (9th–8th century B.C.), and 245 (10th–9th century B.C.), and 300 and was found in bronze inscriptions dating from [the 10th–9th century B.C.].

“It is quite evident that the three lines of evidence presented point to the emergence of the soybeans as a domesticate during the Chou Dynasty [1027–221 B.C.]... However, emergence of a domesticate carries with it the connotation of a trial and error process. This process for soybeans probably took place during the Shang Dynasty or earlier.”

“Conclusions. Historical and geographical evidence developed in this paper point to the eastern half of North China, what is essentially today’s winter wheat-kaoliang region, as the area where the soybean first emerged as a domesticate around the 11th century B.C. During the Chou Dynasty, the winter wheat-kaoliang region was probably the gene center.”

Karlgren, Bernhard. 1950. *The Book of Odes: Chinese Text, Transcription and Translation*. Stockholm, Sweden: The Museum of Far Eastern Antiquities. 270 p. See p. 257–61.

Hagerty (1917). Sections on soy: Da Ya (W.-G. Ta Ya) book (Greater Eulogiums, in the Shêng Ming or “Birth of the People” section), Xiao Ya (W.-G. Hsiao Ya) (Lesser Eulogiums).

3. *Shu ching* or *Shang shu* [Classic of documents. Also called the Book of history]. 700 B.C. China. [Chi]*

• **Summary:** The book: Reischauer and Fairbank (1960, p. 65–68) notes that this is the second of the Five Classics and of the Thirteen Classics. “It contains semi-historical documents and speeches dating from the early centuries of the Chou period, but a large part of the text is known to consist of later forgeries. Forging, or, as it has often appeared to the forgers themselves, the imaginative reconstruction of lost texts has always been one form of scholarly activity in China. The development of two different versions of the *Shu Ching* in the second century B.C. and the problem of the forged portions of the work have led to endless philosophical and philological controversy during the past 2,000 years.”

Yokotsuka (1986, p. 198) states that the *Shu-Ching* was published in 700 B.C. and contains the earliest known Chinese references to *ch’ü* (mold-cultured cereals) and *Chiang* (a mixture of *ch’ü*, the flesh of fish, birds or meat, and salt).

4. Kongzi. 475? B.C. *Lunyu* [Analects of Confucius]. China. Undated. [Chi]*

• **Summary:** Wade-Giles reference: *Lun Yü*, by K’ung Fu-tzu. The author: Chinese philosopher and sage Confucius (lived 551–479 BC). He wrote no surviving works, but many are traditionally attributed to him, and a great many more are called Confucian Classics. Official name: K’ung Ch’iu. Literary name: Chung-ni. Called Kung Fu-tzu, i.e., Master Kung. Latinized as Confucius. The book (called *Rongo*, by Koshi, in Japanese) was probably compiled by the disciples of Confucius’ disciples. It contains answers to his questions. There were two original versions of the work, and there is probably a lot of later material in the one now extant.

Huang (2000, p. 334–35): When Confucius said he would not eat a food without its proper *jiang* (sauce) (See Book 10, chapter 8, verse 3) we can assume that he was talking about “a sort of liquid or colloidal containing bits of finely digested meat or other edible products. These types of *jiang* sauces were the principal savoury condiments of pre-Han China... but their culinary importance was soon overtaken by savoury fermented condiments processed from the soybean, namely fermented beans (*shi*), fermented paste (*jiang*), and soy sauce (*shiyu* or *jiangyu*).

Huang (2000, p. 19–21): This is the earliest document seen (Jan. 2004) that uses the term “five grains” (*wugu*; W.-G. *wu ku*) to refer to China’s five staple grains; the soybean was traditionally considered one of these staple grains. Although the text does not give the names of the “five grains,” Bray (1984, p. 432) says that the term “five grains,” an expression commonly found in the classical texts, was understood to comprise setaria millet (*ji*), panicum millet (*shu*), rice (*dao*), wheat and barley (*mai*), and legumes [mainly soy] (*shu*); some commentators substituted hemp (*ma*) for rice.

Talk with H.T. Huang, PhD, expert on the history of Chinese food and agriculture. 1995. Dec. 28. The early *jiang* in China was made from meat or fish. The *jiang* used by Confucius was almost surely made from meat or fish. Many of the ancient books were annotated during the Han dynasty in an attempt to explain the meaning of certain words and passages. A very eminent scholar in the late Han dynasty (about 100 A.D.), talking about events in roughly 500 B.C., said that the *jiang* used by Confucius was made from meat and fish.

Bo (1982): In the Kyoto-hen section it says: “If I don’t have *jiang*, I don’t eat.” In those days, *chiang* was considered an indispensable seasoning. Sato (1963, p. 8), in

his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this work as the earliest Chinese document seen on the subject. It is written entirely in Chinese characters (*Kanbun*).

According to Karlgren (1950), there is a reference to *chiang* in the *Analec*s; it means “minced food in brine.”

5. Yili [The book of ceremony and ritual]. ed. 450? B.C. China. Passage on soy reprinted in C.N. Li 1958 #3, p. 28. Undated. And in Morohashi 1955, transl. p. 23. [Chi]

• **Summary:** Wade-Giles reference: *I Li*. *I* means bearing or attitude. *Li* means ritual or rites. C.N. Li (1958) estimates the compilation date as about 5th century BC. Chapter 25, “Rituals of the public banquet officials,” states: A sacrificial caldron of green vegetables (*xingmao*) and [a dish / stew of] beef with soybean leaves (*niuhuo*). The commentary by Zheng Xuan in the 2nd century AD, explains that *huo* refers to soybean leaves (*dou ye*). (Translated by H.T. Huang, PhD, Aug. 2001). Dr. Huang adds: The character *huo* refers only to soybean leaves; it is not used for any other kind of leaf. This is another indication of the unique place of soybeans in the life of the Chinese people.

Jiang is mentioned at least three times in this chapter, but we have no evidence that it contained soybeans: (1) Mustard *jiang* (*jiejiang*). (2) *Jiang* soup (*jiangqi*). And (3) the phrase “take grain and *jiang*.”

Call from Dr. H.T. Huang, expert on the history of Chinese food and agriculture. 1997. Jan. 24. He has found the place in this book where *jiang* soup is mentioned. He uses the standard Chinese-language version, with annotations by a great scholar named Zheng Xuan of the later Han; he had many of the great Chinese classics edited and re-published after the famous book burning by the first emperor of China (lived 221 to 206 B.C.). Some additional notes were added by another scholar in the T’ang dynasty. The actual edition Dr. Huang uses was published by Classics Press (Shanghai) in 1990. There are two references to “*jiang* soup” in chapter 25 (“Rituals of the public banquet officials”) on pages 303 and 306. In ancient times the word *to* had two meanings: (1) bean, and (2) a receptacle with a long pedestal (that extended straight down to the ground) for serving food and for use in sacrifices. One can usually determine the correct translation from the context.

Bo (1982): Mentions *hai*, a type of sauce made from animal flesh without bones.

Morohashi (1955, at “*jiang* liquid”) states: “The Rituals of the Public Banquet Officials” chapter says: When offerings of wine and beans are made, salted fish and *jiang* liquid [soy sauce] are not offered.

See also. John Steele, translator. 1917. *The I-Li, or Book of Etiquette and Ceremonial*. London: Probsthai & Co.

6. Zhouli [Rites of the Zhou dynasty]. 300? B.C. China. Passage on soy reprinted in C.N. Li 1958 #2, p. 18, 21-22,

26. Undated. And in Morohashi 1955, p. 11, 26, 28. See also translation by Biot 1851. [Chi]

• **Summary:** Continued: Letter from Dr. H.T. Huang, expert on the history of Chinese food and agriculture. 1994. May 10. There is a reference to *li* (the Chinese forerunner of Japanese amazake) in this work, which was probably compiled during the Western Han (202 BC to 9 AD) from late Chou material. In chapter 5, the paragraph on the Wine Superintendent (*Chiu Chêng*) states that there were five types of ceremonial wine known as *ch’i*. Actually they represent different stages in the fermentation of wine. The second *ch’i* is called *li*. Chêng Hsüan’s commentary (c. 127-20 AD) explains that *li* is a week, cloudy wine prepared by using large amounts of “cooked rice” and a small amount of *ch’ü* (i.e. koji), and allowing the mixture to ferment overnight. It tastes slightly sweet.

Fukushima (1989, adapted from Bo 1982). “The first record on *chiang* can be found in the book entitled *Chou-li* (*Shurai* in Japanese) by Chou-kung (*Shuko* in Japanese), which was published around 1,000 B.C. in the Chou (*Shu* in Japanese) dynasty (1,222 BC to 249 BC). This book covers the matters on the early years of the Chou dynasty in ancient China (about 3000 years ago). According to this document, *chiang* was made by the following procedure. First, yellow aspergilli were grown on millet. (Such mold-grown cereals are called “*koji*” in Japanese.) Then the millet koji and the meat of fish, flesh, or fowl and salt were mixed with a good liquor in a bottle and kept for 100 days. Soybeans were not used in this *chiang*.”

Note: This is the earliest document seen (July 2000) that describes Chinese-style koji, although the Japanese word *koji* is (of course) not used.

Bray (1984:623): *Record of the Institutions* [lit. the Rites] of (the) Chou (Dynasty). Descriptions of all government official posts and their duties. Former Han, perhaps containing some material from late Chou. Compilers unknown. Translated by E. Biot (1). Reputedly written by Duke of Chou. Page 533 states that both the hemp plant (*Cannabis sativa*; *ma*) and the cloth made from it are mentioned many times in the classical texts, including the *Shih Ching*, *Chou Li* and *Li Chi*.

Keightley (1983): A bureaucratic utopian vision of administration in the Chou dynasty. Annotated by Chêng Hsüan, see K.C. Chang p. 393. Soybeans not mentioned directly; Author unknown. From late Warring States period.

In the offering baskets were *ch’iu* which the *Daikanwa* says are made by boiling together soybeans and rice; Flour is bean powder (*tou hsieh*). “Fasting from *chiang* in the Autumn.”

Bo (1982): The *Chou Li* mentions various types of sauces. *Hai* are made from the meat of animals, with or without bones. *Tan* are made with a lot of liquid. But *jiang* are made with various beans or with fish? In the *Chou Li*, one of the official government ritual offices was the “*hai*

jen,” in charge of sauces and mincing meat. It was said that they were in charge of the fruits of the four beans. In the notes to the book it was said: Before they make sauces from animals (*hai*) and sauces with bones in them, they always dried the meat, ground it, mixed in millet koji, salt, and sake, then fermented it in an earthen pot for 100 days. “Zenfu? was in charge of the king’s food. 120 pots of *chiang* were used... In the Taisan of Tengan section it said “Three agriculture, Plant the nine grains.” A note listed these as broomcorn millet, millet, mochi awa? rice, hemp, soybeans (*dadou*), barley, and wheat. I think that we must do more research on the question of whether the sauces mentioned in the *Chou Li* were made solely from animal ingredients. The appearance of the character *hai* shows that there must have been sauces made from meat. But the appearance of the character *jiang* indicates that there must have been non-meat or vegetable sauces. The author of the *Chou Li* used these characters in different, very clearly defined ways. He mentioned rabbit *hai*, wild goose *hai*, and fish *hai*. In none of these cases did he use the character *jiang*. There was one government office whose duty was to prepare feast foods, “various types of *chiang*,” and rare/exotic things to give as gifts. Another office, the “food physician” was in charge of the six foods, six drinks, six tables, hundred feasts, hundred *chiangs*, and light exotic foods. It is clear that the terms “various types of *chiang*” and “hundred *chiangs*” used the term *chiang* broadly, to include animal *chiangs*. There were about 120 pots for different types of *chiang* and these included bean *chiangs*.

K.C. Chang (1977, p. 50): In the “Chih Fang” chapter of the *Chou li* the major crops of the Nine Provinces (*Chiu Chou*) of the late Chou and early Han are listed. In Yü Chou (Honan and the Huai valley) the Five Crops are grown: Panicum millet, Setaria millet of the *germanica* variety, soybean, wheat, and rice, according to K’ang-ch’eng’s annotation. Lu and Needham (1977, p. 86): “The existence of a knowledge of dietary treatment of various diseases in China can be traced back as early as the time of the Warring States [403-221 B.C.]. The *Chou Li*, or *Record of the Rites of the Chou dynasty*, which was probably put together between the 4th and 1st century B.C., includes in the list of the four imperial medical officers a Shih I, i.e. an Imperial Dietitian, as well as an Imperial Physician, an Imperial Surgeon, and a Regius Professor of Medicine (see E. Biot’s translation, vol. 1, p. 8, 93).”

Reischauer and Fairbank (1960, p. 67): A “somewhat fanciful reconstruction in the Confucian tradition of the governmental structure of Chou times.” A source of much misinformation and much information.

7. Zhouli [Rites of the Zhou dynasty]. 300? B.C. China. Passage on soy reprinted in C.N. Li 1958 #2, p. 18, 21-22, 26. Undated. And in Morohashi 1955, p. 11, 26, 28. See also translation by Biot 1851. [Chi]

• **Summary:** Wade-Giles reference: *Chou Li*. Former / Western Han dynasty, with some material from the Late Eastern Zhou. C.N. Li (1958) estimates the compilation date as about 3rd century BC or late Warring States. This book, which describes all institutions, and official government posts and duties, does not mention soybeans as such. However, In the chapter on the Heavenly Officials, Part I refers to the Nine Grains. The commentary by Zheng Xuan, in the 2nd century AD, says that the Nine Grains are three millets, paddy rice, hemp, large and small beans (*daxiaodou*), barley, and wheat. The large and small beans are soybeans and azuki beans, respectively. Commentators in the 7th and 8th century repeat the names of these crops. Note: This is the earliest document seen (March 2006) that clearly mentions azuki beans. It is also the earliest Chinese-language document seen (Jan. 2005) that uses the word *xiaodou* to refer to azuki beans, or that uses the word *daxiaodou* to refer to “soybeans and azuki beans.”

In Part II of the Heavenly Officials chapter, the section on the duties of the Director of Regions (*Zhifangshi*; W.-G. *Chih Fang Shih*) lists the nine provinces of China and the staple grains and livestock of each. An excellent table (Huang 2000, p. 21) shows all this information plus the location of each province. For two provinces the Five Grains (*wugu*; W.-G. *wu ku*) are given as the staple grains. These two are Yuzhou (W.-G. *Yü-chou*), probably located in today’s Henan / Honan & Huai valley, and Bingzhou (W.-G. *Ping-chou*), located in today’s northern Shanxi / Shansi and Northern Hebei / Hopei. Zheng Xuan says in his commentary that these Five Grains are hemp, panicum millet, setaria millet, wheat, and beans (*dou*). Scholars assume that *dou* refers to soybeans.

In the chapter on the Summer Officials, Part II, there is a section on duties of the *Zhi Fang Shi* (Director of Regions; W.-G. *Chih Fang Shih*), which mentions the Five Grains. Again, Zheng Xuan explains that the Five Grains are panicum millet, setaria millet, soybeans (*shu*), wheat, and rice. (Translated by H.T. Huang, PhD, Aug. 2001). Dr. Huang adds: At the time the *Zhouli* was compiled, most Chinese knew what the Nine Grains and the Five Grains were. Today’s scholars are very grateful to Zheng Xuan for commenting on almost all the classics, and for helping us to understand what the ancient words meant at that time. The meaning of many words later changed. Although Zheng Xuan used three different terms to refer to soybeans, this was not uncommon among ancient writers. The *Zhouli* also refers to the six food animals for slaughter (*liusheng*); these have traditionally been considered to be cattle, sheep, swine, dogs, geese, and fish.

H.T. Huang (2000, p. 333-34). Concerning early types of *jiang* made without soybeans: In the *Zhouli* is a section titled “Superintendent of meat sauces” (*Hairen*). Zheng Hsuan, in his commentary on this section says: “To make *hai*, cut meat in thin slices, dry them in the sun, slice them

in thin strips, mix them with salt and mould ferment (*qu*) in a jar and soak the mixture in fine wine. After a hundred days *hai* is formed.” “The same passage in the *Zhouli* mentions *hai* prepared from venison, snail, oyster, ant’s eggs, fish, rabbit, and goose, as well as *haitan*. The *Zhouli* further states that the *Shanfu* (Chief Steward) stores 120 jars of *jiang* in the royal household and that the *Shiyi* (Grand Dietician) is responsible for upholding the quality of 100 types of *jiang* needed by the King.”

Note: This is the earliest document seen (Nov. 2002) that uses the word *qu* (“mold ferment”). The invention of *qu* is a milestone in Chinese food technology, for it provides the conceptual framework for the three major soyfood fermentations (See Huang 2000, p. 335).

This book also suggests a primitive form of aquaculture practiced by the Zhou community. The “Fishery Superintendent” (*yuren*, W.-G. *Yü Jên*) is head of a staff of 14 assistants, 30 clerks, and 300 laborers, who maintain basket traps along dykes to supply fish in season. In the spring, he supplies the swordbill sturgeon (*wei*) and other kinds of fresh or dried fish for the King’s table, for ceremonial offerings, for entertaining guests, and for funerary sacrifices. He administers official laws regulating fishing and collects taxes for the King’s treasure from people who fish. In addition, the “Shellfish Keeper” (*pieren*, W.-G. *Pieh Jên*) was responsible for providing the King’s kitchen with tortoises, turtles, clams, oysters, snails, and ant eggs (Huang 2000, p. 63-64).

8. Wushi’er bing fang [Prescriptions for fifty-two ailments]. 200? B.C. China. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Wu Shih Er Ping Fang*. Date estimated as 200 B.C. Former / Western Han dynasty. Huang (2000, p. 346), in his section titled “Fermented soy paste, *jiang*,” states that *jiang* is one of the foods found in pottery jars and listed on bamboo strips discovered in Han Tomb No. 1 at Mawangdui (W.-G. Ma-huang-tui). The word *jiang* also appears in this silk manuscript, discovered in Han Tomb No. 3 at Mawangdui. Recipe no. 143 states that the dregs from *shujiang* (soybean *jiang*) are used as a salve to treat hemorrhoids.

Note: This is the earliest document seen (Jan. 2009) that mentions *jiang* made from soybeans. Dr. Huang adds (June 2003): “Soybean *jiang* is already being made by the Han dynasty (202 BC to AD 220).”

Wilkinson (2000, p. 659), in his chapter on “Medicine” states that the “earliest surviving Chinese medicinal texts are those found written on three silk scrolls in an early Han tomb at Mawangdui in Hunan (see 19.1.3). They reflect a more this-worldly, body-centered approach to medicine than that of the Shang.” This is one of 13 medical manuscripts from Mawangdui; Wilkinson translates the title as “Prescriptions for 52 diseases.”

9. Sealing of the Han tombs at Mawangdui near today’s Changsha, Hunan province, China (Early event). 165? B.C. Undated.

• **Summary:** In 1972 Chinese archaeologists made one of the most important discoveries in the history of such research in China (and *the most* important discovery related to early Chinese food) when they uncovered the first of three Han tombs at Mawangdui (W.-G. Ma-huang-tui; the name of a place, pronounced “ma-wang-DUI”). Two large volumes about the discovery, containing many wonderful photographs, have been published (see *Ch’ang-sha Ma-wang-tui I Hao Han Mu*. Peking: Wen Wu Press, 1973). Several photographs from this book appear in the following book: Chang, K.C. 1977. *Food in Chinese Culture*, p. 183-84.

Sealed during the same period (within a few years of each other) in the early Han dynasty (about 165 B.C.), these were the tombs of one Chinese ruling family—The Marquis and Marquise of Dai, and probably their son.

Note: These tombs are completely different from the Later / Eastern Han Tomb No. 1, at Da-hu-ting, Mixian, Henan province, China; they are located about 425 miles to the south of the latter tomb and were sealed at least several centuries earlier.

The first tomb to be excavated and reported was Han Tomb No. 1, which contains the greatest abundance of actual food remains plus the names of foods. The body of the lady buried here was so remarkably preserved that her skin, muscles, and internal organs still retained some elasticity when the coffin was opened. She was probably the wife of Li-Cang, the first Marquis of Dai (reigned 193-186 BC) and died a few years after 168 BC at about the age of fifty (Ying-Shih Yü, 1977, p. 55-57). With her were buried all the 5-6 major grains, including wheat, barley, rice, two kinds of millet, soybeans (*shu*), and hemp. Also found in the tomb were several seasonings including soybean *jiang*, *shi* (soy nuggets or ‘salted darkened beans’), and leaven (*ch’ü*) [*qu*].”

The best English-language account of soy nuggets (*shi*; soybeans fermented with salt) in these tombs is found in H.T. Huang (2000, p. 336). Soy nuggets were found in pottery jars No. 126 and 301 and listed on a bamboo slip discovered in Tomb No. 1 at Mawangdui. The character for *shi* on the bamboo slip is identical to a character which appears in the *Shuowen Jiezi* (Analytical dictionary of characters) (121 AD), where it is defined as soybeans fermented with salt (soy nuggets). There are no references to *shi* in earlier literature. Note: This bamboo slip is the earliest document seen (Jan. 2002) that mentions soy nuggets, which it calls *shi*.

The best English-language account of *jiang* in these two tombs is found in H.T. Huang (2000, p. 346-47). Apparently, by the time these tombs were sealed in the Former / Western Han, the word *jiang* had “already

undergone a subtle change from its ancient meaning. It was increasingly used specifically to denote the fermented paste made from soybeans.” Since then, it is understood that the character *jiang*, unless otherwise indicated, usually means *doujiang*, i.e., *jiang* made from soybeans. Likewise, the character *dou*, unless otherwise specified, usually means “soybean.” When the word *jiang* is applied to a specific type of fermented sauce or paste, a prefix is used to indicate the kind of raw material from which the *jiang* was made. Thus, in addition to *jiang* itself, the Mawangdui bamboo strips also list a *jujiang* (meat paste), a *quejiang* (sparrow paste), and a *majiang* (a kind of fish paste), as well as a *tan* (probably horse meat *jiang*) and a fish *tan*.” The types of *jiang* made from animal parts are addressed separately in the chapter on “Food processing and preservation” (p. 379-415).

Huang (2000, p. 165-66) also states that records of both ferments (*qu*, a grain-based mold ferment like Japanese *koji*) and grain-based wines were found among the burial remains at Mawangdui. The Inventory lists two sacks of ferment (*qu*) and 8 jars of wine of various types. One, named *baijiu* (white wine {Jap. white saké}), is described as mature, muddy wine. That would make it like Japanese *doboroku*.

10. Sima Qian. 90? B.C. *Shiji* [Records of the historian]. China. Passage on soy reprinted in C.N. Li 1958 #28, p. 48-49. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Shih Chi*, by Ssuma Ch’ien. This is the earliest known history of China, written during the early Han dynasty, and the most famous of all Chinese historical works. It is also the earliest Chinese work whose date of appearance is fairly well known; he presented it to the emperor ca. 90 BC.

Chapter 6 (*Qin Shihuangdi*), which is about the first emperor of China, notes that soybeans (*shu*) were transported [as a commodity]. Chapter 7 (*Xian Yu*), which is about a general contending for power, states that soldiers eat taro/yam (*yu*) and soybeans (*shu*). Chapter 10, about Zhang Yi (who was probably another general) states that people in a mountainous region of China (perhaps near today’s Korea) grow lots of wheat but eat mostly cooked soybeans and soup made from soybean leaves (*huo*). Chapter 27, about Li Si (a top government official) mentions soup made from soybean leaves.

Chapter 69, titled “Economic affairs” (*Huo zhi liezhuan*, a famous chapter) refers to one thousand earthenware vessels of mold-fermented cereal grains and salty fermented soybeans (soy nuggets) (*niequ yanshi qianhe*), as articles of commerce. (Translated by H.T. Huang, PhD, Dec. 2001). Dr. Huang adds: Chapter 69 shows that soybeans and soy nuggets had now clearly become major commodities in the Chinese economy (See Huang 2000, p. 336). The term *niequ* probably refers to two separate entities. *Nie* is a

general term for sprouted grain; it should not be translated as “malt,” since in English “malt” generally refers to malted barley. *Qu* (which is the same character pronounced “*koji*” in Japanese) refers to molded grain used in a fermentation, but we cannot say what type of cereal grain (such as wheat, rice, barley, millet, etc.) was used. Note 1. The Japanese almost surely learned both the method and the character from the Chinese. Since this book was written in northern China, the *qu* was probably either molded wheat, barley, or millet. The earliest method describing how *qu* was made appears in the *Qimin Yaoshu* (Important arts for the people’s welfare) (544 AD); that *qu* was molded wheat.

Dr. Huang continues: Soybean leaves are still widely used in soups, in part because there were not as many types of vegetables as there are today. Much later they used only tender soybean seedlings (*doumiao*) in soups, finding the regular leaves too tough. Most of the chapter titles in this work refer to people, but some refer to early dynasties (Xia, Shang, and Zhou) or to subjects such as economics. This book gives the names of all the Shang dynasty emperors. It also lists Shennong as an early historical emperor. The “Burning of the Books” commanded by the first emperor of China some 123 years earlier, in 213 BC, had destroyed much of Chinese written history. Thus, scholars didn’t take this list seriously until inscriptions on Shang oracle bones, discovered by archaeologists in the early 20th century, showed (remarkably) that this list of emperors was quite correct, and that many of these emperors were real people.

Note 2. This is the earliest document seen (Oct. 2008) that clearly mentions soy nuggets (*shi*).

Chapter 70, about a man named *Taishi Gong* (which may be an honorific name of Sima Qian; Gong means “duke”), mentions a soup made from soybean leaves.

Huang (2000, p. 337) tells this story from the *Shiji* (Biography of the Prince of Huainan, Chap. 118): When the Prince of Huainan (the legendary inventor of tofu), was exiled for inciting rebellion (in 173 BC), against his brother the Han Emperor Wendi, he and his retinue were, nevertheless, provided with such necessities of life as “firewood, rice, salt, soy nuggets (*shi*), and cooking utensils.”

Wilkinson (2000, p. 781). Sima Qian (145-86 BC) fulfilled the request of his father, Sima Tan (80-110? BC), to complete the project for which he had begun to gather the materials, a history of China from the earliest times to the reign of Han Wudi, a period of 3,000 years. The *Shiji* is a history of China from the Yellow Emperor down to Han Wudi arranged in a manner which, with certain adaptations, was to set the form for a new way of writing history. Wilkinson gives details of its structure (p. 501-02).

Fukushima (1989, p. 7): This is the earliest known document to mention *shih*.

Needham (1986, p. 237-38): One may ask how Shen Nung entered this book. He was one of the great culture

heroes of Chinese antiquity, the second of the ‘three primordial sovereigns’ (*san huang*). Reigning as Yen Ti, he was the “technic-deity, arch-inventor and patron saint of all the biological arts—agriculture, tillage, animal husbandry, pharmacy, and medicine. This was the soil from which Chinese botany and zoology as sciences emerged.” In the *Shiji* we find the statement that Shen Nung ‘experimented with (literally tasted, experienced) the hundred herbs, and so began the use of medicaments.’

Bray (1984, p. 629): Historical Record (down to -99). Published in early Han, c. -90. By Ssuma Ch’ien, and his father Sima Tan (W.-G. Ssuma T’an). Partial translations by Chavannes (1895-1905), Pfizmaier (1858-1863), Hirth (1917), Wu Khang (1932), Swann (1950), etc. Yin-Te Index, no. 40.

Bo (1982): “Meat jiang 1,000 pots, and [soybean] jiang 1000 pots.”

K.C. Chang (1977:31): “... in all likelihood soy sauce [probably chiang] was known toward the end of the Chou period (see *Shih chi*, “Huo Ch’ih Lieh Chuan”).

Shih Shêng-han (1962), in his translation and interpretation of the *Qimin Yaoshu*,

Shih Shêng-han (1962, p. 86) notes that Sima Qian mentions soy nuggets (*shi*) as being sold commercially in the cities, so it must have been produced in large quantities in his time.

Reischauer and Fairbank (1960, p. 111-13): The greatest literary achievement of the Han period was in the field of historical writing. No people have been more interested in their past than the Chinese. This book is a history of China up to 99 BC, much greater in scope and far more advanced in scholarship than any work that had preceded it. It continued Confucius’ work on history. *Shih* means historian or history. *Chi* means record or note. Wu Ti had Ssu-ma Ch’ien castrated. The book set the pattern for later Chinese historical works. 130 chapters, 700,000 characters.

Morohashi (1955): Chiang kang (chiang crocks). “Throughout T-ai (district in Szechuan?), in one year, 1,000 fermented products and 1,000 crocks of pickles and chiang (are made). This is equivalent to a house of a thousand chariots (i.e., a dukedom).”

Hagerty (1917, p. 33-34, 79): “The *Shih chi*, or Historical Records, under the heading of Huo Chih, or Political Economy, says: ‘In the big centres and capital cities, at the harvest time, this bean product [shih, or bean relish {soy nuggets}] was on sale in the markets and was called Nieh ch’ü yen shih, and the quantity which was sold in one year, amounted to one-thousand *ta*.’” The Han shu writes the last two characters (Cc).

Bretschneider (1871, p. 7-8): “Ssu-ma-ts’ien, the Herodotus of China, in his historical work *Shi-ki* (pinyin: *Shiji*, by Sima Qian), written in the second century BC, states that the Emperor Shen-nung 2700 BC sowed the five kinds of corn [five grains, *wugu*]. In later times the Chinese

commentators agreed that here the following corns were meant:” 1. *Shu* Panicum millet (*Panicum miliaceum* L.). 2. *Tsi [Chi]* Foxtail / *Setaria* millet (*Setaria italica* Beauv.). 3. *Shu* Soja-bean (*Glycine hispida*). 4. *Mai* Wheat. 5. *Tao* Rice.

11. Huan Kuan. comp. 60 B.C. Yantielun [Discourses on salt and iron]. China. Passage on soy reprinted in C.N. Li 1958 #29, p. 49. [Chi]

• **Summary:** Wade-Giles reference: *Yen T’ieh Lun*, by Huan K’uan. Former / Western Han dynasty. This is a record of the debate held in 81 BC on state control of commerce and industry. “Afterwards the country people drank wine.” Chapter 18 says that soybeans (*shu*) and soybean leaves (*huo*) do not provide a sweet flavor. Chapter 25 states that as an ordinary person you work hard and follow the proprieties (by being respectful), by sucking soybeans and drinking water (*chuoshu yinshui*).

Chapter 29 states: “The old people sat by their raised plates with pedestals. The young people stood up to eat. Each meat dish was served with a *jiang* sauce. Everyone drank their fill.” Chapter 29 also mentions a soup made from beans (*dou*)—probably soybeans. It continues: “In ancient times the common people ate soybean leaves (*huo*);” soup is not mentioned this time. “In ancient times, the common people used fish and soybeans as an offering. In the spring and autumn they offer to their ancestors.” (Translated by H.T. Huang, PhD, Dec. 2001). Dr. Huang adds: In Chapter 53, the *jiang*, since it was not preceded by an adjective, was probably made with soybeans. The last passage is the earliest in which soybeans are mentioned with fish or for use as an offering; it shows that soybeans were considered to be valuable. They were probably placed on an altar as an offering to one’s ancestors.

12. Shi You. 40 B.C. Jijiu pian [Handy primer, or dictionary for urgent use]. China. Passage on soy reprinted in C.N. Li 1958 #33, p. 50-51, 91. [Chi]

• **Summary:** Wade-Giles reference: *Chi Chiu P’ien*, by Shih Yu. This is not a typical dictionary; it contains lists of characters and words but no definitions. There is a +7th century commentary (large characters) by Yan Shigu (a famous Tang dynasty scholar) and a +13th century supplemental commentary (small characters) by Wang Yinglin (a Southern Song scholar, lived 1223-1296).

Two passages are of interest. The first, titled *bīng er mai fan gan dou geng*, is a listing of foods: Pasta & pastry, cooked wheat granules, sweet bean soup. It is not clear exactly what the last three characters, “sweet bean (*dou*) soup,” mean and to what kind of beans the character *dou* refers. The 13th century supplemental commentary by Wang Yinglin says that *dou* refers to soybeans. Additional characters for “small bean” (*xiaodou*) probably refer to azuki beans, but this is also not clear.

The second passage, titled *wu yi yan shi xi zuo jiang*, is another listing of foods: Fetid elm seed, salty fermented soybeans (soy nuggets; *shi*), soured pickles / vinegar, and *jiang*. Concerning *shi*: The +7th century commentary states: “When you incubate beans (*dou*) you get *shi*. In the *Chuci* (Poems from the state of Chu) (-250), soy nuggets are called *daku*. Concerning *jiang*: The +7th century commentary states: “If you mix beans (*dou*) and [wheat] flour, then process it, you get *jiang*. A relative of *jiang* made from meat is called *hai*; a relative of *jiang* made from meat mixed with bones is called *ni* (Note: *Sanni* is three kinds of meat paste still mixed with bone. See Huang 2000, p. 379).

Note: This is the earliest document seen (June 2007) that describes a method for making *jiang* (Chinese-style fermented soybean paste) in which a significant amount of wheat (or wheat flour or barley) is mixed with the soybeans before fermentation begins.

The 7th century commentary continues: The character for *jiang* (the seasoning) is pronounced the same as the character for *jiang* (a general in the military). When you eat, you must have *jiang*, just as in the army you must have a general [to lead it in the right direction]. (Translated by H.T. Huang, PhD, Dec. 2001). Dr. Huang adds: This book, though not a dictionary, is a condensed compilation of information in groups, and a quick way of remembering that information. By this time, *jiang* had become a commodity.

The author, Shi You, flourished from 48 to 33 B.C. The book (called *Kyushu hun* in Japanese), written in the early Han dynasty, is a primer in rhyme on Chinese history used for teaching reading and writing to children.

Bo (1982): This work mentioned the term “chiang.”

H.T. Huang (2000, Science and civilisation in China. Vol. 6, Biology and biological technology. Part V: Fermentations and food science, p. 346-47). The earliest reference to *chiang* as a fermented soybean paste in the literature appears in this work (Handy Primer {Dictionary for Urgent Use}, ca.-40, p. 31). The commentary by Yen Shih-Ku in the 7th century A.D. states that soybeans and wheat flour are mixed to produce *chiang*. There is also a +13th century commentary by Wang Ying-Lin. This work also discusses production of a fermented vinegar named *tso* [pinyin: *zuo*] (p. 284).

Wilkinson (2000, p. 49). From the Han to the Six Dynasties the *Jiju Pian* (Quick Mastery of the Characters), by Shi You was the most popular character primer. It introduced everyday characters for basic vocabulary arranged in groups.

13. Ban Gu. 76 AD. Qian Hanshu [History of the Former Han dynasty]. China. Passage on soy reprinted in C.N. Li 1958 #36, p. 52-54. Modern rendering by Morohashi 1955, trans. p. 25. For translation see Swann 1950. Called Kansho in Japanese. [Chi]

• **Summary:** Wade-Giles reference: *Ch'ien Han Shu*, by Pan Ku. Often titled simply *Hanshu / Han Shu*, this large, important work of 100 chapters became a prototype of all later dynastic histories of China. Since Ban Gu (who lived AD 32-92) died before he could complete the work, it was finished (in AD 76) by his sister, who was a famous woman and writer in her own right. In Chapter 7, the soybean (*shu*) and millet are mentioned together twice. But the character for (*shu*) is written without the usual grass radical on top—perhaps an early way of writing it. This character (pronounced *shu*) can also mean “uncle,” however commentator Yan Shigu (7th century) states that here it refers to soybeans.

Chapter 61, titled “Record of economic affairs” states that two of the wealthiest merchants in the realm traded in soy nuggets (*shi*) (Huang 2000, p. 337). Section 4 of this same chapter mentions the “five grains” (*wugu*). The commentator, Yan Shigu, says that one of these five was soybeans (*shu*).

The chapter on the Five Elements, No. 7, middle section, Part II, mentions soybeans (*shu*, written with the grass radical) seven times.

The chapter on geography, section 8, mentions the five grains during the Zhou dynasty. The commentary states that the five grains are two kinds of millets, soybeans (*shu*), wheat, and rice.

The chapter on the biography of Xiangji, a famous Chinese general, states that his foot soldiers were running short of food; they had only half the amount of soybeans (*shu*) that they needed. Note: Soybeans are now used as a military food.

The chapter on the biography of Yang Yun, who apparently did something wrong and was punished, contains a letter he wrote to the emperor: “I have suffered for three years, and worked hard in my fields. I have hunted in the winter, cooked mutton, drank the grain wine I have made, worked close to the soil, and served the Qin family. The women of the family are skilled in the art of the drum and the flute. My female servants and concubines sing, and after they drink, they perform. After I drink grain wine, my ears feel warm and I cry out to heaven. My poem states: In my fields close to the southern hills, out of the poor earth, I have been able to cultivate and harvest soybeans (*dou*) as well as their stems (*qi*). Life has been good to me. Why do I need more riches?” Note 1. He has learned to be content even with his hard life. He probably uses the stems for fuel and mulch. Note 2. This is the earliest document seen (March 2003) that mentions soybean stems (*qi*).

The chapter on the biography of Bao Xuan, mentions four beverages and foods: juice, grain wine, soybean leaves (*huo*), and meat.

The chapter on the biography of Di Fang Jin, section 54, states: For food (*fan*), give me cooked (steamed or boiled) soybeans (*dou*).

The chapter on the biography of Wang Mang, section 69, middle part, mentions soybeans (*shu*) and millet. (Translated by H.T. Huang, PhD, Jan. 2002). Dr. Huang adds: Today, *fan* means cooked rice.

Wilkinson (2000, p. 502-03). The *Hanshu* was the second Standard History of China after the *Shiji* (Records of the Grand Historian). The most important difference between all the Standard Histories from the *Hanshu* onward and the *Shiji* was that they covered only one dynasty and made no attempt to cover the vast sweep of history (3,000 years) embraced by the *Shiji*.

Ying-shih Yü (1977, p. 76): “Under the reign of Emperor Ch’eng (32 to 7 B.C.) the prime minister Chai Fang-chin (whose courtesy name was Tzu-wei) had caused the breakdown of a major irrigation dam in Ju-nan commandery (in Honan). Agriculture in the whole region was therefore seriously affected. To register their complaint against Chai, the people of Ju-nan created a song which reads, ‘It was Chai Tzu-wei who destroyed our dam, / Now all we have for food is soybeans and yam [taro].’ As the commentary by Yen Shih-ku makes clear, the second line means that the people cooked soybeans as grain food (*fan*) and yam as *keng* (*Han shu*, 84:22a).”

Morohashi (1955): Decrying the present state of philosophical studies: “How bitter is the void! The students of today are such materialists they do not even understand the changes (*I*), so how can they comprehend the darkness. I’m afraid in the future they will use the philosophy books to cover *chiang* jars (*chiang p’ou*).” “In the morning during the first month, the wind comes from the northwest section, bringing the *Jung shu*.” Meng K’ang says this *Jung shu* is the same as *Hu tou* (foreign bean).

Hagerty (1917, p. 34): The *Han shu* says: “From the completion of the reign of Han Yüan Ti up to that of Wang Mang (a nephew of the Empress of Han Yüan Ti, who lived from BC 33–AD 23), some famous rich man of this time engaged in the business of making and selling Shih, or Bean relish, in the capital at Chang-an. One named Fan Shao-wêng incurred the ridicule of all the people because of being engaged in this business.”

14. Wang Chong. 82 AD. Lunheng [Discourses weighed in the balance]. China. Passage on soy reprinted in C.N. Li 1958 #41, p. 55. [Chi]

• **Summary:** Wade-Giles reference: *Lun Hêng*, by Wang Ch’ung. Later / Eastern Han dynasty. The chapter titled “Following one’s natural disposition” (*Shuaixing*) lists several crops including soybeans and wheat / barley (*mai*) (*doumai*).

The chapter titled “Improvement of skills” (*Yizheng*) states: The Five Grains (*wugu*) are for people to eat to alleviate their hunger. Rice and millets taste good; they are sweet and delicious. Even though soybeans and wheat / barley are coarse, they can alleviate hunger. If you eat

soybeans and wheat / barley, which are coarse and not refined, you can no longer complain that you have an empty stomach and nothing to eat [i.e., they are better than nothing].

The chapter titled “Discussion of insects: (*Shangchong*) states: Flavorful crops [such as rice and millet] are attacked by insects; wheat / barley and soybeans (*dou*) are not bothered by insects. (Translated by H.T. Huang, PhD, Jan. 2002). Dr. Huang adds: Rice and millet were the preferred cereal grains at this time. If soybeans were not bothered by insects, it was probably because they were not yet widely cultivated.

H.T. Huang (2000, p. 346-47): In the edition published by Classics Press (1990), Chapter 23, titled *Ssu Wei* (The Four Taboos) states (p. 226) that there is a taboo against making soybean *chiang* (*doujiang*) when thunder is heard, that is after the spring rains have arrived. The best time to make *jiang* is the first month, to give farmers useful employment when it is too cold to work in the fields.

Morohashi (1955): “It is bad to hear thunder when making bean *chiang* (*tou-chiang*).” Note: “Bean *chiang*” probably refers to soybean *jiang*.”

15. Liji or Xiaodai liji [The book of rites]. 100 AD. China. Passage on soy reprinted in C.N. Li 1958 #5, p. 29-30. Reiki in Japanese. [Chi]

• **Summary:** Wade-Giles reference: *Li Chi* or *Hsiao Tai Li Chi*, compiled by Tai the Younger. In Chapter 4 titled *Tangong* (a person’s name) Part II, we find the expression *chuoshu yinshui* (W.-G. *ch’o shu yin sui*) which means literally “sucking soybeans and drinking water.” Huang (2000, p. 294) notes that the ancient Chinese found that soybeans tasted better and were better tolerated [more easily digested] if they were cooked in water for a long time to make soybean congee or gruel. This food must have been extremely smooth and thin since, in pre-Han references to consumption of this gruel, the expression *choushu* is used. *Chou* is a very unusual term that refers to a way of ingesting that is half way between eating and drinking. The soybean appears to be the only grain that was prepared in this way in ancient China. The word/character *chou* is not even used for thin rice or millet congee or gruel. Rather, the *Liji* uses the word *shi* (to eat) for them.

Chapter 6, titled “Monthly Ordinances,” describes a ceremony for the “Son of Heaven” (the emperor/king), in which he is supposed to eat soybeans (*shu*) and chicken. Note: Huang (2000, p. 163-65) states that this chapter contains the earliest known description in Chinese of how wine (*jiu*; Jap. saké) was made from millet and rice. In the second month of winter, the Superintendent of Wine used *qu* (a grain-based mold ferment like Japanese koji) and *nie* (sprouted grain) to make the wines, which were used for both ritual and drink.

Chapter 12, titled “Rules for the family” (*meize*) lists soybeans (*shu*) as one of the foods to be served to a relatively high-class family.

In the chapter titled “Ceremony of pouring the pot,” item 14 states that azuki beans (*xiaodou*) are in the pot. (See Li 1958 #356). (Translated by H.T. Huang, PhD, Aug. 2001).

Huang (2000, p. 619) states that this book was compiled by Tai the Younger and is traditionally ascribed to the Former/Western Han (ca. -70 to -50), but it really first appeared in the Later/Eastern Han (ca. +80 to +105), though the earliest pieces included may date from the time of Confucius (ca. -5th century).

This book, which is about etiquette and ceremony (including eating and drinking, marriages, funerals, etc.) for the royalty and upper classes, was compiled by disciples of Confucius during the Eastern Chou period. These rites and rituals were a key element in the whole Confucian concept of social order. This is the last of the five classics.

Huang (2000, p. 334) states concerning non-soy jiang: “*Hai* made from frog, rabbit and fish are mentioned in the passage in the *Neize* [Internal Family Regulations] chapter of the *Liji*. Also mentioned are *jiang* from fish roe and *jiang* from mustard, as well as *haijiang* which presumably simply means a *hai* type of *jiang*.” Also mentions *xijiang* which “probably indicates an acid type of *jiang* possibly made by blending *jiang* with vinegar. These records indicate that *jiang* is a general term for fermented or pickled condiments prepared from finely divided food materials; *hai* is *jiang* made from animal products, and *tan* is juice drained from mature *hai*.”

Huang (2000, p. 33) states that *xiaodou* (lesser beans, *Phaseolus calcaratus*) [azuki beans] are also mentioned in the *Neize* chapter.

Wang and Fang (1987) note: “According to the Book of Rites, 20 jars of chiang were seen in the kitchen when the victory feast was being prepared for the first ruler of the Chou dynasty. Confucius (551-479 B.C.) was quoted as saying not to eat food that is not seasoned with the proper type of chiang.” In Japanese this work is called the *Reiki*. It was translated into Japanese by Yasui Shotaro in 1921. It is written entirely in Chinese characters (Kanbun).

Bray (1984) states (p. 533) that both the hemp plant (*Cannabis sativa*; *ma*) and the cloth made from it are mentioned many times in the classical texts, including the *Shih Ching*, *Chou Li* and *Li Chi*.

Bo (1982): “Called *Reiki* in Japanese, this book mentions ‘hai,’ a type of sauce made from animal flesh without bones, and *tan*?, a sauce made with a lot of liquid. It also says, ‘If you eat soybeans [shu] and drink water, you can be entirely satisfied/happy.’”

Ying-shih Yü (1977, p. 58): “What makes the Ma-wang-tui discovery doubly interesting is the amazing degree to which the food list from Tomb No. 1 agrees with the list given in the ‘*Nei tse* (‘Internal [Family] Regulations’)

chapter of *Li chi*. Virtually all the foodstuffs and prepared dishes listed above can be found in that chapter (*Li chi*, 8:19a-21b; Legge 1967, 1:493-63).”

Sato (1963, p. 8), in his book titled *Documents on Soy Nuggets, Chiang, Miso, and Shoyu*, cites this as the second earliest Chinese document seen on the subject.

Nancy L. Swann. 1950. *Food and Money in Ancient China*. On page 434 is a footnote concerning soy sauce which says: “Consult *Li-Chi* 2:23b, SBE [Sacred Books of the East], xxvii, p. 79.”

16. Xu Shen. 121 AD. *Shuowen jiezi* [Analytical dictionary of characters]. China. Passage on soy reprinted in C.N. Li 1958 #42, p. 56. [Chi]

• **Summary:** Wade-Giles reference: *Shuo Wen Chieh Tzu*, by Hsü Shên. Often abbreviated to *Shuowen*. Bray (1984, p. 630) translates the title literally as “Explanations of simple characters and analysis of composite ones.” Wilkinson (2000, p. 63) translates it as “Explaining single-component graphs and analyzing compound characters.” This is the earliest systematic or comprehensive Chinese lexicon/dictionary, and by far the most important. It succeeded the *Erh Ya*, is arranged by the structure of the characters, and lists more than 9,000 characters under 540 radicals.

Li (1958, p. 56) identifies ten ancient Chinese “seal characters” (*zhuanwen*, ornamental writing) in this dictionary that are related to soybeans (and other beans); all ten are compound / composite characters: (1) Pronounced *da* means “small soybean” (*shu*). It is composed of a grass radical over the character *he* which has a stylized roof above a mouth. (2) Pronounced *qi* means “soybean stem.” It also has a grass radical on top. (3) Pronounced *huo* means “soybean leaves.” It is the third character with a grass radical on top. (4) Pronounced *dou* and means “beans.” It is a plate with a pedestal. (5) Also pronounced *dou* means “beans,” and is an ancient way of writing No. 4. (6) Pronunciation unknown: Refers to a kind of soybeans.” At the bottom is character No. 4. (7) Pronunciation unknown: Refers to a sweet product made from soybeans. It also has character No. 4 at the bottom. (8) Pronounced *shu* means “soybeans” (*dou*). This is the main part of the early character *shu* meaning soybeans or the character *shu* meaning uncle. The character itself resembles a germinating soybean emerging from the ground—showing the horizontal line of the soil surface, roots below it, and a stem and branch above. (9 and 10) Pronounced *chi* (or *shi*) and showing two ways of writing the same character, which means “soybeans fermented with salt” or “soy nuggets.” The first has *shu* on the left while the second has *dou* on the left, each meaning “soybeans.” On the right, both have the ancient radical for “branch.” This second character is basically the same as the modern character for “soy nuggets.” (Translated by H.T. Huang, PhD, Jan. 2002).

Dr. Huang adds: These are China's oldest and most revered characters, based largely on the inscriptions found on China's ancient bronzes. Stylized and formalized, they demonstrate the beauty of ideographic language, which starts as pictures. They have no counterpart in Western European culture. These characters have been written by calligraphy specialists throughout Chinese history (until 1949), regardless of the dynasty, to announce special or weighty occasions. They are also available as a modern font. The Chinese Communist government, in their desire to break with the past, was the first to discontinue and discourage their use—although a few calligraphers keep them alive.

Huang (2000) discusses the different types of ferments (*qu*, *koji*) listed in this work and, throughout Chinese food history (p. 167, 261, 150-68), early uses of the word *fu* to mean 'decayed' or 'rotten,' "hardly a fitting appellation for a food product (p. 302). What is *jiang*? The *Shuowen* tells us that "jiang is *hai*; it is made by blending meat with wine." Fortunately other works give us "more specific information on how *hai* or meat *jiang* was made in antiquity" (p. 334). The *Shuowen* says that soy nuggets (*shi*) are prepared by incubating soybeans with salt (p. 336).

Bretschneider (1881, p. 162): The 'shuo wen' (introduction), in one chapter, explains "tou" by "ancient vessels for containing meat" but in another chapter given to it the meaning of "shu" or pulse. Some authors in the Ch'in dynasty (3-4 century AD) began to write "tou" to designate "pulse."

Hagerty (1917, p. 34): "The Shuo Wan [sic, Shuo Wen], or Ancient Dictionary, says: 'The term for bean is Lu lu huo (Cc), and this is really identical with the name Niu lu huo (Cc).'... The Shuo wên also says that the term Chüan lu huo (Cc) really is identical with Niu (Cc). The Commentary says these all refer to what we know as the Lu tou (Cc) [mung bean].

Morohashi (1955): Translated p. 9, 16 (nuggets). Listed 9,000 Chinese characters under 540 radicals.

Ho Ping-ti (1969): This was the earliest systematic Chinese lexicon, compiled shortly after 100 A.D.

Hsu (1980): Gives 4 variations for "beans" "The character shu/shih? is used to denote the salted bean.

Bo (1982): "In this, China's oldest dictionary, it is stated that the character *chiang* follows the characters for meat and (?). *Chiang* already meant meat *chiang* so it was not necessary to explain this. But if *chiang* already meant meat *chiang*, why was the character *chiang* used more widely than the other character *chiang* written in a similar way? This is conflicting and confusing. I think the author made a mistake in his interpretation, or maybe he didn't have a clear understanding of the origin of the term "chiang... The character for *shi* is described as a fermented bean using salt. For "fermented" they use the term "yu," which means that

you place things upside down, inoculate them with *koji* molds, and allow them to ferment.

Note that the soy nuggets in tomb number 1 of Mawangdui [Jap: Seikan Baotai, literally "Horse King Mound," the tomb of the prime minister of a small state (Changsha) in the Former Han] of the Former/Western Han were about 200 years before the Shuo Wen. Note: The Former/Western Han had its capital at Ch'ang-an (today's Sian or Xi'an, the capital of Shensi). It later became the capital of the Later Ch'in, Northern Chou, and T'ang dynasties. Luoyang (W.-G. Lo-yang, in today's north Honan province) was the capital of the Eastern Chou, then the Later Han, and Jin.

Bray (1984:630): Shuo Wen Chieh Tzu. Analytical Dictionary of Characters [lit. Explanation of Simple Characters and Analysis of Composite Ones]. Later Han, +121. By Hsü Shen.

Fukushima (1989, p. 7): "Shih is also described along with *chiang* in *Shuo-wen Chieh-tzu* (*Setsubun-kaiji* in Japanese) by Hsu Shen (Kyoshin in Japanese), the oldest dictionary in China published in 121 AD in the later Han dynasty. The raw material of the shih is soybeans."

Letter from Dr. H.T. Huang, expert on the history of Chinese food and agriculture. 1994. May 10. There is a reference to *li* (the Chinese forerunner of Japanese amazake) in this work which appeared in 121 AD. It explains that "*li* is wine that has only been fermented overnight."

17. Cui Shi. 160 AD. Simin yueling [Monthly ordinances for the four classes of people]. China. Passage on soy reprinted in C.N. Li 1958 #45, p. 56. [Chi]

• **Summary:** Wade-Giles reference: *Ssu Min Yüeh Ling*, by Ts'ui Shih. Later / Eastern Han. A detailed description, lunar month by month, of the activities of a well-to-do household. An early and important agricultural treatise of the late Han dynasty (2nd century A.D.). The following is based on the translation by Hsu Cho-yun (1980, p. 217-23). 1st month [February]: The first day of the first month is called the New Year. One can make various sauces (or pastes). During the first ten days of the month, roast / fry soybeans (*dou*); in the second ten days, boil soybeans. Chopped soybeans (or groats) are made into *modu* (W.-G. *mo-tu*) (a type of *jiang*—apparently fermented, salted soy paste), which, by the conjunction of the 6th and 7th month, should be used for making pickled melons, fish sauces, meat sauces, and basic [liquid / clarified] soy sauce (*qingjiang*; W.-G. *ch'ing chiang*). 2nd month: On the day of the spring equinox [March 20], thunder will be first heard. One can plant spiked millet, soybean (*dadou*), female hemp (which does not yield fiber), and sesame (*huma*; "foreign hemp"). One can sell millet, panicked millet, soybeans, hemp, and wheat seed. 3rd month: When it rains, it is time to plant hemp and sesame. When the mulberry turns red, one can plant

soybeans. 4th month: One can plant millet, spiked millet, soybeans and lesser [azuki] beans (*daxiaodou*), and sesame. 5th month: On the day of the summer solstice [June 21-22], present wheat and fish to ancestors and deceased parents; offer sacrifice and follow the procedures for food preparation, purification and cleansing. When timely rains fall, one can plant sesame and male hemp. One can prepare elm sauce and minced meat sauce. One sells [soy] beans, lesser [azuki] beans (*daxiaodou*), and sesame.

6th month: One can sell soybeans, buy oats and wheat, and collect plain white silk.

7th month: On the sixth day, the five grains (*wugu*) and the mill should be ready. One can sell lesser [azuki] beans and [soy] beans, buy wheat, and collect raw silk and white silk.

8th month: One can make *mo-tu* preserve [perhaps fermented soybean] paste and collect leaves of beans.

9th month: Soy is not mentioned.

10th month: One harvests the five grains. One should purchase spiked millet, [soy] beans and lesser [azuki] beans, and hempseed.

11th month: The winter solstice arrives. Buy spiked millet, [soy] beans, lesser [azuki] beans, and hempseed.

12th month: Soy is not mentioned. (Translated by H.T. Huang, PhD, Feb. 2002).

H.T. Huang adds: The four classes of people (in descending order of importance) referred to the scholars / government officials, farmers, artisans / laborers, and merchants. Scholars were the highest class because they ran the country. The merchants were the lowest class because it was felt they did not produce anything. This system lasted from antiquity until about 1949. Ordinances, usually issued by a high official (up to the emperor or king), were executive orders, suggestions, or exhortations as to what the people should or should not do, often in connection with food, crops, or daily living.

H.T. Huang (2000, p. 347, 359, 362-64, 371-72) argues convincingly that the *qingjiang* (clear chiang or “clarified soy sauce”) made during the 1st month is a liquid soy condiment, similar to today’s soy sauce, obtained as a by-product of *chiang*. *Mo-tu* has also been interpreted as fermented soybean paste by Miao Ch’i-Yü ed. (1981, p. 23) and Hung Kuang-Chu (1984, p. 93).

Fukushima (1989, p. 3). This document describes the first liquid soy sauce. “The liquid products which belong to the category of soy sauce did not appear in the literature before the later Han dynasty (about 25-220 A.D.). There is a description of the liquid product which was made by separating the liquid portion from the chiang in *Ssu-ming Yüeh-ling* (*Shimin-Getsurei* in Japanese), published by Ts’ui Shih (*Sai Shoku* in Japanese) in the later Han dynasty. This liquid was called *chiang ch’ing*, which means ‘clear chiang.’”

Bray (1984, p. 56, 630): Monthly Ordinances of the Four Sorts of People. Later Han, c. +160. By Ts’ui Shih. Translated by Herzer (1963, in German). Our present version of this book is based almost exclusively on passages cited in the *Qimin Yaoshu* (+544).

Bo (1982): This work states, “On New Year’s Day, make various types of chiang, meat chiang and ch’ing chiang.” The term “ching” means “refined” or “clear.” This ch’ing chiang must be today’s filtered soy sauce. In the Ch’ing dynasty (1644-1912) this same term was used to refer to soy sauce. Even today a lot of people along the Yellow River or in the countryside of eastern north China still refer to soy sauce as “ch’ing chiang.” Also, up until recently, in restaurants and hotels in Beijing, there were typically two white ceramic pots. On the one containing soy sauce was written “ch’ing chiang” and on the one with vinegar, “kao ts’u.” Also, in Korea they used to call soy sauce “ch’ing chiang.”

Bray (1981): Almanac of agricultural practice, household management, and ritual for landowning class. With planting instructions. Based on a reconstruction of the text by Shi Shenghan. Also parts appeared in the *Ch’i-min yao-shu*. The original work is lost.

Shih Shêng-han (1962), in his translation and interpretation of the *Qimin Yaoshu*, includes a lengthy analysis of the sources from which it is drawn. On pages 21-23 is a detailed discussion (with one long excerpt) of this book (*Simin Yueling*) and its author. The excerpt states that in the 5th month, one may sell soybeans and azuki beans (*daxiaodou*), and sesame, and buy barley and wheat.

Note 1. This is the earliest document seen (Sept. 2005) that refers to soy sauce, which it calls *qingjiang*. It is also the earliest document seen (Aug. 2005) that uses the term *qingjiang* to refer to soy sauce.

Note 2. This is the earliest document seen (Aug. 2006) that clearly mentions sesame seeds, which it calls *huma*. Bray (1984, p. 425) says that “sesame did come to China from the West in or just after Han times.” Address: Anhui province, China.

18. Tao Hongjing. 510 AD. Mingyi bielu [Informal records of famous physicians]. China. Passage on soy reprinted in C.N. Li 1958 #293, p. 215-16. [Chi]

• **Summary:** Wade-Giles reference: *Ming I Pieh Lu*, by T’ao Hung-Ching. Northern and Southern Dynasties. This is a typical pharmacopoeia entry. Raw soybeans (*sheng dadou*) have a flavor that is sweet and neutral [i.e., their energy *qi* is neutral; it is not heating or cooling]. They grow in the area of Tai Shan [a famous, sacred mountain in Shandong, near Confucius’ birthplace] and in the plains [of north China; the Yellow River basin]. They are harvested in the ninth month.

Black soybeans (*heidadou*) are used to make sprouts (*nie* or “sprouted grains;” the same character means both

“sprouts” and “malt”). When the sprout is five inches (*cun*) long, you dry it; it is called “yellow curls” (*huangjuan*). After you cook it, it can be eaten. Note 1. This is the earliest document seen (Feb. 2007) that uses the term *heidadou* to refer to black soybeans.

The leaves can be used to feed livestock. The pods can be used to feed cattle and horses. The stems can be used as fuel to cook food (from *Sannongji*, 1760).

Note 2. This is the earliest document seen (July 2006) stating that soybean pods can be used as livestock feed. Dr. Huang adds: The passage concerning the sprouts is very interesting. Usually in the pharmacopoeia, the sprout is very short, typically less than an inch, when it is used to make “yellow curls.” The sprouts here are much longer. Moreover, it is unusual at this early date to see soy sprouts used as food, as well as the traditional medicine. The word *nie* may suggest food use. When the sprout has reached five inches, very little bean will be left; the ratio of sprout to bean will have increased greatly. This indicates that it was probably used by some people as food, but not yet used this way popularly. Note 3. This is the earliest document seen (March 2003) that recommends letting soybean sprouts grow to a length of five inches.

The first entry for hyacinth bean (*biandou*; *Lablab purpureus*, formerly *Dolichos lablab*) states: The flavor is sweet and the nature is slightly warm. It dispels / alleviates the middle and lower gases [in the human digestive tract]. The second entry notes: Plant hyacinth beans by the fence [because it’s a climber]. Steam the pods. They are good to eat. (See Li 1958 #535). Note 4. This is the earliest document seen (June 2008) that mentions the hyacinth bean together with the soybean. (Translated by H.T. Huang, PhD, Jan. 2003).

Huang (2000, p. 296) states that “soybean sprouts” (*dadou huangjuan* or “yellow curls”) are mentioned in this standard pharmacopoeia. Soy nuggets (*shi*) are listed as a middle-class drug; they are “bitter in taste, cold, and non-toxic” (p. 337). Jiang is listed as a lower-class drug, which is “salty, sour, and cold. It dispels heat, restrains anxiety, and counteracts the toxic side-effects of drugs, heated soups, and fire.” Malt sugar (*yitang*) is first mentioned in this book (p. 460). Two types of sea vegetables are given as cures for goiter (p. 575). Note 5. This is the earliest document seen (Jan. 2005) that mentions sea vegetables.

Hagerty (1917, p. 4) says that the *Pieh lu* (*Ming i pieh lu*, a Materia medica by Tao Hung-ching, AD 452-536) states: “The Shêng ta tou [gives Chinese characters], or Fresh soy bean, is useful as a remedy for the following diseases: Dropsical affections, gastric fever, paralysis, difficulty in passing urine, bladder trouble, improper circulation of the blood, catarrh or improper flowing of the fluids of the vital organs, heart, liver, kidneys, stomach and bowels, chills, and poisoning from eating Aconite [a dried tuberous root of the monkshood, *Aconitum napellus*,

formerly used as a sedative and anodyne]. If the Pai ta tou [Baidadou; white soy bean] is eaten for a long period it will cause the body to become heavy. When cooked in a powder or meal-like form, it tastes good and sweet and is a good remedy for the following diseases: gastritis, fever, tumorous swellings, paralysis, inability to digest grain foods, and abdominal dropsy. This bean is grown in the level marshy land in the vicinity of Tai-shan mountain, and is harvested in the ninth month.”

Note 6. This is the earliest document seen (March 2004) concerning whole soy flour (yellow soybeans “cooked in a powder or meal-like form”).

Note 7. Tai Shan mountain (5,048 feet high) in Shandong province, is 32 miles south of Jinan (W.-G. Tsinan). Considered as sacred for several thousand years, it was formerly an important place of pilgrimage. Many temples are along the road up and on the top.

Note 8. Talk with H.T. Huang, PhD, expert on the history of Chinese foods. 2001. July 3. Looking at the Chinese-language edition of this book, he is fairly sure (but not certain) that the Chinese characters *sheng dadou* refer here to raw, uncooked mature soybeans and not to green vegetable soybeans or to “Fresh soy beans” (as Hagerty translates the term). This is clear because they are listed under and as a subset of soybean sprouts (“yellow curls”), which is the main item. These raw soybeans are called *sheng dadou* rather than simply *dadou* (“soybeans”) to more clearly differentiate them from soybean sprouts. It is understood that these raw soybeans must be cooked for a long time before they can be eaten or used medicinally.

Hagerty (1917, p. 9): “It [the white {yellow} soy bean] is not poisonous and is a specific remedy for improper functioning of the heart, liver, kidneys, stomach and bowels. It is also used as a remedy for constipation, as a stimulant for the lungs, eradication of poison, improving the complexion by cleaning the skin of various impurities, and stimulating the growth and appearance of the hair.”

Hagerty (1917, p. 29): T’ao Shih, in giving directions for his medical prescriptions, says: “If using the Hu tou bean, use two ‘Ta ma chun,’ or measures, of beans, while if using the Hsiao tou, or Small bean [azuki bean] use three ‘Ta ma chun,’ The Hu tou, or Foreign bean, which compared with the Hsiao tou is very small, is identical with the Yeh wan tou, or Wild wan tou, and the stem of the Yeh wan tou is called Wei [character].

Hagerty (1917, p. 76-77): “Shih: The Shih [character], or Bean relish [soy nuggets] has an acrid bitter taste, and a cold effect upon the system, but it is not poisonous. It is used as a remedy for the following diseases: Injury from cold, headaches, chills and fever, malaria, serious poisoning, and other diseases. T’ao Yin-chü says that the Shih, or Bean relish, can be made a constant article of diet. But in the spring and summer season, when the weather is disagreeable, it is to be boiled or fried, and only that which

has been steeped in wine should be used. This is extremely good.” The following is according to Kang Po’s method: “Use vinegar and wine and steeped bean relish, boil until the beans are dry and parched, mix together with some ‘Ma yu,’ or hemp seed oil, and again boil, cooking three times in all. Add some ground pepper and dried ginger. When all are mixed together it is ready to serve and is very good. At the present time this is given the name of Oily bean relish. People having foot disease frequently take this and steep it in wine and use the dregs to apply to the feet, which will be cured. The good quality, being fragrant, mellow, and of rich strong decoction, is found in the Hsiang-yang district, in a town called Ch’ien-t’ang. That which is in the middle part of the vessel has a stronger effect.”

Hagerty (1917, p. 81): “Chiang [character], or Soy Sauce [Chinese miso]: The Chiang has a salty sour taste, and has a cold effect upon the human system. It is a remedy for the following diseases:” [Hagerty omits the medical text].

Bretschneider (1881, p. III:2): Enlargement of the *Shen Nung Pên Ts’ao Ching*, adding 365 more drugs used during Han and Wei periods. An independent treatise. T’ao, a T’ang dynasty Buddhist monk, lived 452-536 AD.

Note 9. This is the earliest document seen (May 2001) that mentions hemp seed oil.

19. *Shijing* [Food canon (#1)]. 530? AD. China. Passage on soy reprinted in C.N. Li 1958 #294, p. 216. Undated. [Chi] • **Summary:** Wade-Giles reference: *Shih Ching*. Northern Wei. There are several early Chinese books with this title. The original work has been lost, but its contents are partly preserved in the fermentation and food processing / food and drink chapters of the *Qimin Yaoshu* (QMYS). The author and date of this one are uncertain. The date was probably before that of the QMYS (+544); the date +530 is proposed here by Li. Authorship has been attributed to Cui Hao (W.-G. Ts’ui Hao), to his mother, or to Ma Wan—but these are just theories. One *Shijing* (Food canon), attributed to Cui Hao, in 9 volumes, is listed in the *Weishu* (History of the Northern Wei dynasty) (+554), in which only the preface remains. This preface, which has been translated in Huang (2000, p. 125), strongly implies that most of the *Shijing* was actually written by Cui Hao’s mother. During a famine that lasted more than ten years, she realized “how ignorant the younger generation had become” in matters related to food preparation and the culinary arts. “The result is nine chapters of elegant and systematic descriptions that form this book.” In his later years, Cui Hao unfortunately had a falling out with the Wei emperor; in +450 he and his entire family were put to death for high treason, and he was regarded as a traitor for the last 100 years of the Northern Wei dynasty. This was probably why his name is never mentioned in the CMYS and though many passages from the *Shijing* are quoted and the source cited, the CMYS

never says *whose Shijing*. The author of the QMYS was a government official when Cui Hao was remembered as a traitor.

The section titled “How to make soybean (*dadou*) thousand year bitter wine (*kujiu*)” (preserved in Chapter 71, titled “Vinegar” in the QMYS) says: Take one pint (*dou*) of soybeans (*dadou*). Wash until very clean, soak until soft, then steam until cooked through. Dry in the sun. Then repeatedly pour wine (*jiu*) over the soybeans—so they impart their flavor to the final vinegar and aid the oxidation process. This section also describes other ways of making other kinds of vinegar—each with a unique flavor.

The section titled “How to make soy nuggets (*shi*)” (preserved in Book 8, chapter 72 of the QMYS) describes three methods for making *shi*. The main method (the one described first in the QMYS and considered to be most important by the author) is for unsalted / bland soy nuggets (*danshi*). The method for making salty soy nuggets (based on the translation by Shih Shêng-han 1962, p. 86-87, and H.T. Huang 2000, p. 338-39) is as follows: Soy nuggets are usually made in the summer, from the 5th to 8th month; this is the best time. Take one *dan* (about 40 liters; later pronounced *shih*) of soybeans, wash / scour well, and soak overnight. The next morning, drain off the water then steam until the hulls / seed coats will slip off when you rub the beans. Spread on the ground (or on a mat if the ground is bad) to a depth of about 2 inches (*cun*). Wait until the beans are completely cool, then cover with a layer of rushes about 2 inches thick. After 3 days, inspect the beans to see if they are covered with a yellow coating [or mycelium, probably of *Aspergillus* mold]. If so, remove the rushes and spread the soybeans to form a thinner layer. Make grooves with the fingers in this layer and shape into “plots.” Mix again. After several hours, mix and make into “plots” again. Repeat this mixing and plot-making process 3 times a day for 3 more days.

Meanwhile, cook another batch of soybeans to get a thick, syrupy decoction. Make some glutinous rice koji (*nuqu*; W.-G. *nü ch’ü*). Mix 5 *sheng* (1 *sheng* = about 400 ml) of the glutinous rice koji and 5 *sheng* of good table salt into the yellow molded soybeans, then sprinkle with the syrupy decoction (soybean cooking liquid). Knead with both hands until some juice begins to run out between your fingers. Then place the mixture into an earthenware / pottery jar (*ping*) with a neck until full—but do not compress or pack. If the jar is not full, fill to the brim with wild mulberry leaves. Seal mouth of jar tightly with mud (*ni*). Leave jar in middle of courtyard for 27 days. Then pour out the jar’s contents [probably onto a mat], spread, and dry in the sun. Steam it again, then sprinkle with a decoction of mulberry leaves. Steam it again for as long as is steaming raw soybeans, then spread it again and dry in the sun. After steaming and sun-drying three times, the soy nuggets will be ready.

Note 1. This is the earliest document seen (Jan. 2005) that mentions unsalted / bland soy nuggets (*danshi*). However the document no longer exists.

Bo (1982): Mentions wheat chiang and mustard chiang.

The *Ch'i-min yao-shu* states that this work contains a recipe for "one thousand year bitter soy wine," which was apparently made by soaking soy nuggets in a grain-based alcoholic beverage or medicinal tincture.

Fukushima (1979, p. 3, 8-9, adapted from Bo 1982).

"The manufacturing process of wheat chiang, appearing in *Chi-ching* (*Shokkei* in Japanese) by Hsieh Fêng (Sha Fu in Japanese), published in the Han dynasty (206 BC to 220 AD). Shi-ching has not survived to the present day, but the original Shi-ching process for making wheat chiang is cited in the *Ch'i-min Yao-shu*." In the process wheat is soaked, steamed, and spontaneously molded to make koji. The wheat koji is mixed with cooked wheat and salt water to make a firm mash. This is insulated and aged to make wheat chiang.

The work also describes how to make *shih* (soy nuggets): Soybeans are washed, soaked, drained, and steamed. The cooked soybeans are cooled, then spread, furrowed, and piled. The last 3 steps are repeated 3 times a day for 3 days until the beans have become spontaneously molded. The resulting soybean koji is mixed with soybean cooking liquid, barley koji, and salt, put into an earthen pot, sealed, and insulated. It is then dried in the shade, mixed with a mulberry leaf extract, and steamed. The last 3 steps are repeated 3 times, resulting in salted soybean shih.

Note 2. This is the earliest document seen (March 2009) that mentions soybean koji; in this case it is used to make soy nuggets (*shi*, *shih*).

Shih Shêng-han (1962), in his translation and interpretation of the *Qimin Yaoshu*, includes a lengthy analysis of the sources from which it is drawn. On pages 27-28 is a detailed discussion (with one excerpt) of this book (*Shijing*), whose title he translates as "Catering Guide or Nutrition Manual." He states that 33 quotations from the *Shijing* are mentioned in the *Qimin Yaoshu*. The Records of Classics and Other Writings in the *Suei Shu* mentioned nine books (all lost now) titled *Shijing*. One of these, written by the mother of Cui Hao (lived ?-450), the Prime Minister to the first Emperor of the later Wei dynasty, is definitely previous to the *Qimin Yaoshu*.

20. Yen-shih chia-hsun [Essays]. 531-591 AD. China. [Chi]*

• **Summary:** "How dare I gaze upon your excellency's clear dust? Yet what is the use of the 'Great Darkness' now? It is only fit to cover chiang jars (*chiang p'ou*)."

21. Jia Sixie. 544 AD. *Qimin yaoshu* [Important arts for the people's welfare]. China. Passage on soy reprinted in C.N.

Li 1958 #66, p. 66-67, and #295, p. 216-20. Translated by Shih Sheng-han 1958, 1962. [Chi]

• **Summary:** Wade-Giles reference: *Ch'i Min Yao Shu* (QMYS) by Chia Ssu-hsieh. Northern dynasties-Northern Wei (AD 386-534; established by nomadic people from the northern steppes). This is the world's earliest encyclopedia of agriculture. H.T. Huang (2002) adds: "This is the most important book on agriculture or food technology ever published in China. At a remarkably early date it gives both general information and great detail about agriculture and food processing." The QMYS is divided into 10 books / fascicles (*juan*), and subdivided into more than 91 consecutive parts.

In his Preface, Jia Sixie states that the material in his book comes from four sources: (1) The Chinese classics; (2) Contemporary books, proverbs, and folk songs; (3) Information gathered from experts; and (4) His personal experience ("original material").

A partial English-language translation of the "original material" and commentary by Shih Shêng-han was published in 1958 (2nd ed. 1962). The numbered text below is based on the 1962 translation titled "A preliminary survey of the book *Ch'i Min Yao Shu: An agricultural encyclopaedia of the 6th century*." 2nd ed. Peking, China: Science (Kexue) Press. x + 107 p.

Book 2. General comments. The best time to plant soybeans (*dadou*) and oilseed hemp (*youma*) depends on the climate and soil condition. "Realization of the importance of proper choice of season and soil." These two factors are the key to agricultural success. A table (p. 33) shows: Best, medium, and latest time for various operations: Planting spring soybeans: Best time-First ten days of the 2nd month. Medium-First ten days of the 3rd month. Latest time-First ten days of the 4th month. Also gives such times for azuki beans, male and female hemp, and sesame seeds. For making jiang: Best time-12th and 1st month. Medium-2nd month. Latest-3rd month. Making *shi* (soy nuggets): Best-4th and 5th month. Medium-20th day of 7th month until 8th month. Latest-None. In addition: Large dark-red beans (*da chidou*) should be planted in the 3rd lunar month, and harvested in the 6th month (See Li 1958 #385). Note 1. The scientific- and common name of dark-red beans is unclear; it may well be another name for azuki beans.

Chapter 4. Millets. It is best to plant millets on new fields (without a previous crop), or on a field where the previous crop was soybeans. Best, medium, and least suitable soil / ground for planting various crops. Spiked millet: Least suitable-Following turnips or soybeans. Panicked millets-Medium soil-Following soybeans. 1.3 Amount of seeds to be sown at different seasons: Soybeans: Best time-8 *sheng/mou* (= 220 ml/508 square meters). Medium time-10. Latest time-12.

Chapter 6, "Soybeans" (*dadou*): Note 2. The first third (approximately) of this section is quotations from four early

Chinese works and commentaries on them: (1) The *Erya* (Literary expositor) (ca. 150 BC) says: “*rongshu* is the same as *renshu*.” Sun Yan’s commentary on the *Erya* explains that *rongshu* is the soybean (*dadou*).

(2) According to the *Guangya* by Zhang Yi (Ancient dictionary: Enlargement of the *Erya*) (230 AD), soybeans (*dadou*) are called *shu*; azuki beans (*xiaodou*) are also called *da*. *Hudou* is *jiangdou*. Dr. Huang adds: The true identity of *hudou* is unknown.

(3) The *Guangzhi* by Guo Yigong (Extensive records of remarkable things) (+390) says: When you plant the azuki bean (*xiaodou*), you can get three crops a year. The flavor is good. *Baidou* (“white bean”) is coarse, large, and edible. *Cidou* (“prickly bean”) is also edible. *Judou* (“millet bean”) has a seedling which is like that of the azuki bean (*xiaodou*). The flowers are purple. It can be used for flour (*mian*). It is grown in a place called Zhuti within Jianin (in today’s Sichuan). Of soybeans (*dadou*), we have the yellow *luodou* (“drop bean”), the *yudou* (“imperial bean,” in which the bean is elongated), the *yangdou* (“poplar bean”), whose leaves are edible, and the *hudou* (“foreign bean”), which comes in green (*qingdou*) and yellow (*huangdou*) varieties.

(4) According to the *Bencao* (probably *Shennong Bencao Jing*; *Benjing*) (Classical pharmacopoeia of Shennong, the Heavenly Husbandman) (100 AD), when Zhang Qian (W.-G. Chang Ch’ien) traveled to foreign lands, he brought *hudou* (“foreign bean”) seeds back to China. Note 3. Zhang went west along what is now called the Silk Road during the Former / Western Han dynasty, was gone for 11 years, and returned to China in 126 BC. The *hudou* is now generally thought not to be a soybean.

The *Qimin Yaoshu* then begins: So now (i.e., Later Wei), we have two kinds of soybeans (*dadou*), black and white, as well as *changshao* (“long tip”) and *niujian* (“cow path”) varieties. There are three kinds of azuki beans (*xiaodou*): The green (*ludou*), the red (*chixiaodou*), and the white (*baixiaodou*) varieties. There are also the yellow Korean bean (*huang gaolidou*), the black Korean bean (*hei gaolidou*), the *yandou* (“swallow bean”) and the *bidou*; all are varieties of soybeans (*dadou*). Then there are *wandou*, *jiangdou*, and *laodou*; all are varieties of azuki beans (*xiaodou*). Note 4. This is the earliest document seen (Sept. 2005) that mentions Korea in connection with soybeans. Note 5. This is the earliest Chinese-language document seen (Jan. 2005) that uses the word *baixiaodou* to refer to white azuki beans.

Spring soybeans (*dadou*): Plant them at the same time as the early grains; the middle of the 2nd lunar month is best. Use 8 *sheng* of seeds per *mou*. The second best planting time is the first third of the 3rd lunar month; use 10 *sheng* per *mou*. The latest you can plant them is the first third of the 4th lunar month; use 12 *sheng* per *mou*. If you meet with late germinating weather, you can plant in the 5th or 6th

lunar month, but you must increase the amount of seed used.

The soil should not be overly fertile. After land has been harvested in the previous autumn, it can be planted sparsely. If the soil is too rich, you may get luxuriant growth but fewer pods. Harvest the crop late. The pods do not drop. If you harvest too early, the seeds will not be full. Use a drill to plant, so the seeds will be placed deep in the soil. The seedlings will be sturdy and have deep roots to reach the moisture in the soil. Pierce (?) once, plow once, and hoe several times.

Mow / cut when all the leaves have fallen. When some leaves are left, it is harder to cut the stems. After mowing, quickly plow stubs under the soil. The soybean stubs dry out easily. If you do not plow them under, the soil will not retain moisture.

To produce [soybeans] for animal feed (*jiao*), use a wheat field as a base, and plant 3 *sheng* of seeds per *mou*. Broadcast the seeds and use a plow to form a narrow and shallow channel; level it plane. If the weather is dry, the stems will be coarse and sturdy, and the leaves sparse. If there are too few seeds, the seedlings will not grow tall; if the seeds are placed too deep, the seedlings will not be able to emerge from the soil.

If the soil is too damp, first plow deeply, then broadcast the seeds away from the plowed furrows and level the soil. Do not do this if the soil is not too damp.

In the 9th month, if you see leaves close to the ground turning yellow and about to fall, immediately harvest the crop. Even if the leaves do not turn yellow, they can easily start to rot. If you do not harvest, the wind will quickly strip the leaves, and the rain will rot the stem. The crop will be ruined.

Book 2, “Cultivating cereal grains.” The best way to improve the soil is to plow under green beans (*liudou*, probably *Dolichos* species rather than mung beans or green gram). Azuki beans or sesame seeds (*huma*) are next (Note 6. Sesame seeds are not a legume and do not enrich the soil). It’s best to broadcast these densely in the 5th or 6th month, then plow them under [as green manure] in the 7th or 8th or eighth month. In the yield of spiked millet planted the next spring should be 10 *sheng* per *mou*. The effect is as good as adding the excreta of silk worms or well-rotted compost. Varieties of crops. The Chinese and English names of 7 cereal crops and the number of varieties of each recorded in the QMYS are given; soybeans are not in this list. Fertilizing the ground: Succession of crops. This table is similar to a previous one but: For soybeans: Most favorable forerunner–Spiked millet. For azuki beans the best forerunner is spiked millet or wheat. The QMYS was the first book to state that using green manure is “the best thing to do.” The best preceding crops for plowing under as green manure are *Dolichos* beans (*liudou*) or azuki beans. The next best crops are hemp, foxtail millet (*su*; *Setaria*

italica), or sesame seeds. The least desirable are rapeseed / colza (*wujing*) or soybeans (*dadou*). Note 7. This is the earliest document seen (Jan. 2008) worldwide that mentions rapeseed.

Harvesting and storing crops. Soybeans: In the 9th month, when the lower leaves become yellow and fall, reap quickly. Different harvest dates are given for azuki beans and sesame seeds.

Chapter 8 (Li 1958, p. 217)–Hemp: Be careful not to plant soybeans (*dadou*) mixed with hemp.

Chapter 10–Barley or wheat: Upland (high) fields are good for cultivating cereal grains or beans.

22. Jia Sixie. 544 AD. *Qimin yaoshu* [Important arts for the people's welfare (Continued)]. China. Passage on soy reprinted in C.N. Li 1958 #66, p. 66-67, and #295, p. 216-20. Translated by Shih Sheng-han 1958, 1962. [Chi]

• **Summary:** Continued: Book 3, "Culinary vegetables." Chapter 14 (3.2.31 Li 1958, p. 217)–To plant melons, make a pit as big as a bowl. Place 4 melon seeds and 3 soybean seeds in the sunny side of the pit. After several leaves have expanded on the melon vine, pinch off the soybean seedlings. (Melon seedlings are too weak to break through the ground, so one should take advantage of the pushing force of germinating beans. Yet if the soybeans were allowed to grow, they would shadow the melon vine to disadvantage. Bean stalks when pinched give off a sap that moistens the soil. Never pull out the bean stalks, lest the ground become loosened and dry).

Method #2 for growing melons (from Li 1958 #66): Use the raised fields method with raised rows. After the rains in the 6th month (July), plant *Dolichos* beans. In the 8th month, plow them under. Plow again in the 10th month, then start to plant melons. Every two steps, make a small pit the size of a plate with a mouth about 5 inches in diameter and a flat bottom. Then plant melon and soybean (*dadou*) seeds, ten seeds each, in the pit. Add manure and soil, and cover it gently. Tamp it down with your feet. Pull out the beans and thin the melons as usual. When the spring grasses appear, the melons will come up and the leaves will grow quickly. In the 5th month (June) the melons will be ripe and their leaves luxuriant. They are not harmed by drought. Note: We are not told when to pull out the soybeans.

3.4 Preservation of garden vegetables. 3.4.2. Perishable vegetables can be half-dried then conserved in *jiang*; they are called *jiangcai*. The QMYS recommends 6 vegetables to be preserved in this way.

6.1 Fiber crops. The only plant discussed is hemp. Female hemp plants are cultivated mainly for their oil-rich seeds, are cropped for both their fiber and their function in pollination. Use of wild kuzu (*Pueraria*) is mentioned in passing. 6.2 Tinctorial plants include indigo. Note 1. This is the earliest document seen (Jan. 2006) that mentions kuzu / kudzu.

Book 7, "Animal husbandry," discusses domesticated animals including horses, cattle, donkeys, mules, sheep, goats, pigs, geese, Chinese ducks, and other fowl.

Chapter 45–On mulberry: Mentions azuki beans.

Chapter 58 (7.3)–On rearing baby pigs: For feeding baby pigs, nursing is the best. If you must feed them some other way, using artificial feeds, they may not grow fat, so leave the baby pig with its mother in the same pen. Using foxtail millet (*su*) and soybeans (*dou*) may not be sufficient. Bury some cartwheels (vertically) in the pen to form a feeding enclosure, enabling you to separate the baby pig from its mother. Scatter foxtail millet (*su*) and soybeans (*dou*) therein. The piglets will be able to go in and out freely and get enough to eat, so they will grow quickly. But the mother pig will not be able to reach the feed. Note 2. This is the earliest document seen (Jan. 2003) concerning the feeding of soybeans or soybean products to pigs.

Note 3. This is the earliest document seen (April 2003) that mentions *lüdou*. Chapter 17, titled "Planting mallows," advises to plant *lüdou* in the 5th or 6th month, and to plow it under [for use as a green manure] in the 7th or 8th month. Chapter 21, titled "Planting onions" (*cong*) recommends planting plant *lüdou* in spring and plowing it under in the 5th month. (See Li 1958, #416).

Chapter 57–Raising sheep. If you raise 1,000 sheep, within 3-4 months you should plant a batch beans [to help feed them].

Chapter 60–Raising geese and ducks: Take the female ducks (hens) and do not mix them with the males (drakes). Feed the female ducks with foxtail millet (*su*) and soybeans (*dou*) until they are satiated. You should get 100 eggs from each female duck. Dr. Huang notes: They are raising the ducks for the eggs, not the meat. Note 4. This is the earliest document seen (Aug. 2002) which mentions that ducks (or geese) are fed or eat soybeans.

23. Jia Sixie. 544 AD. *Qimin yaoshu* [Important arts for the people's welfare (Continued)]. China. Passage on soy reprinted in C.N. Li 1958 #66, p. 66-67, and #295, p. 216-20. Translated by Shih Sheng-han 1958, 1962, and H.T. Huang 2000. [Chi]

• **Summary:** Wade-Giles reference: *Ch'i Min Yao Shu* (QMYS) by Chia Ssu-hsieh. Chapter 70–*Jiang*. The following translation is based on Huang (2000, p. 347-49); he notes that this is the first document that gives a detailed description of the method for making soybean *jiang*. The process is related to that for making soy nuggets (*shi*), in which limited amounts of wheat flour were mixed with the soybeans to enhance the growth of microorganisms. When making *jiang*, larger amounts of wheat flour may be added and microbial growth may be further hastened by inoculating the mash with various prepared mold starter cultures such as *huangyi*, *huangzheng*, or *nüqu* (W.-G. *huang i*, *huang chêng*, or *nü ch'ü*).

Chapter 70—How to make jiang: The best time is in the 12th month or the first month, followed by the 2nd month, but not later than the 3rd month. Use waterproof earthenware vessels. If water leaks from the vessel (*weng*), the jiang will spoil. Avoid vessels that have previously been used for making vinegar or pickled vegetables. Place the vessels in the sun; if necessary raise them on a stone block. During the summer rains, do not let the bottom of the vessels stand in water.

Note 1. This earthenware vessel (*weng*) has a small mouth (to prevent evaporation) and a larger middle, tapering to a smaller bottom. The vessel (*gang*) used today for making soy sauce has a wide mouth to facilitate evaporation, to produce a good concentrated liquid.

With one's back towards the *sui sha...* direction, place a rusted iron nail under the stone supporting the vessel. Thus, even if the jiang is eaten by a pregnant woman, it will not spoil.

Use black soybeans (*wudou*) planted in the spring; they are small but uniform in size, whereas those planted later are larger but not uniform. Steam the dry beans in a steamer for half a day. Remove from steamer, then repack them so that those which were on top are placed in the bottom, and vice versa. Unless this is done, they will not be steamed evenly. Continue until all beans are well steamed. Note 2. A commentary by Miao Qiyou (1982) says that *wudou* means *heidadou* (black soybeans).

Cover fire with ashes and let it smoulder all night without being extinguished. Dried cow dung is the best fuel. Pile the dung, leaving the empty; it will burn as well as charcoal. Collect an adequate supply if possible, and use it for cooking. Since there is no dust, the fire will not be too strong. Dung is much better than dried straw.

Bite a bean; it should be dark and cooked through. If it is, collect the beans and dry them in the sun. At night, heap them in a pile and cover; they must not get wet. When you are ready to remove the hulls, place the beans in a steamer and steam them vigorously. Then dry them in the sun for a day. Next morning, clean the beans by winnowing (*bo*). Select enough good beans to fill a mortar. Pound them but do not crack them. If they had not been steamed twice, the pounding would probably crack them, and they would be difficult to clean.

Winnow beans to remove broken pieces, then soak in a large basin of hot water. After a while, wash them to remove black seed coats... Drain off water, then steam the beans again.

Add water as needed but do not change the wash water lest some of the bean flavor be lost and the quality of the jiang be lowered... Use wash water to boil broken pieces until all water has evaporated, then process the residue to make a side batch of jiang for immediate consumption. Do not use the wash water for the main batch.

Steam beans for same length of time as when cooking rice to make *fan*. Remove beans from steamer, spread them out on a scrupulously clean mat, and allow them to cool.

Meanwhile, take white table salt, yellow mould culture (*huangzheng*), *ju* leaves, and wheat koji (*benqu*) and dry them thoroughly in the sun. If the salt has a yellowish color [from nigari], the jiang will be slightly bitter. If the salt is not dry, the jiang will spoil easily. Use of the 'yellow mould culture' will add a red tinge to the jiang and improve its flavor. Grind the 'yellow mold culture' and common koji to a powder, then sift through a screen made of horse tail hair. Note 3. It is unusual to see salt used in this first fermentation, since it would slow the process. Its use is not called for at this stage in subsequent documents.

The approximate proportions of ingredients are: three *dou* of dehulled, cooked beans, one *dou* of ground common koji, one *dou* of ground 'yellow mould culture,' five *sheng* of white salt, and as much *ju* leaves as can be picked up with three fingers. If less salt is used, the jiang will turn sour; adding the salt later will not help. If superior koji (*shenqu*) is used, one *sheng* of it can replace four *sheng* of common koji, because of its greater hydrolytic / digestive power. Note 4. One *dou* (about 1 pint) equals 10 *sheng*.

Note 5. This is the earliest document seen (Nov. 2002) that uses the term *huangzheng* (yellow mold culture) or the term *benqu* (wheat koji = common koji), or the term *shenqu* (superior koji).

When measuring out the beans, heap them liberally above mouth of container; do not level the top. By contrast, pack the salt and cultures loosely in the measuring container, and level the top flat. Mix the measured ingredients strenuously by hand in a large basin, until everything, including the moisture, is evenly distributed. Face the planet Jupiter while mixing, to insure that no grubs will form.

Place mixture in an earthenware vessel (*weng*) and pack contents tight. The vessel should be full; if only half full, the product will not ripen properly. Cover vessel and seal mouth with mud, so vessel is airtight.

When the fermentation is finished (after about 35 days in the 12th month, 28 days in the 1st and 2nd months, or 21 days in the 3rd month), remove cover to open vessel. The fermented mash will show large cracks, and shrinkage away from wall of vessel. A yellow coat (of spores and mycelium) will be visible everywhere. Remove all chunks and break them into pieces. Divide the jiang substrate from 2 vessels into 3 parts—to fill 3 vessels for the next stage.

Before sunrise, get water from a well. Dissolve three *dou* of salt in one *tan* (ten *dou*) of water. Stir well, allow to settle, then decant off clear solution for use. Soak some yellow mould culture (*huangzheng*) in the clear salt solution in a bowl. Rub the pieces until a thick yellow suspension [of spores and mycelium] is obtained. Discard the residue, add more salt solution, and pour the suspension into a vessel.

For example, for 100 *dou* of moulded bean substrate, provide 3 *dou* of *huangzheng* and varying amounts of salt solution. The important point is to achieve a mixture having the consistency of thin congee (*bozhou*), since the fermented beans in the mixture can absorb a considerable quantity of water.

Allow the vessel to stand in the sun with the mouth open. [As a proverb says, ‘Drooping mallow and sun dried jiang’ are both excellent products.] For the first 10 days stir contents from top to bottom several times a day. Then stir once a day until the 13th day. Be sure to cover mouth of vessel when it rains; do not let any water get in lest it promote the emergence of grubs. Stir thoroughly after each rain. The jiang will be ready for use in 20 days, but it will take 100 days for the full flavor to be developed.

The author comments: If a pregnant woman who might spoil the jiang is present, place leaves of jujubes, *Ziziphus spinosus*, in the vessel and the jiang will recover. Some people use ‘filial stick’ (*xiaozhang*) to stir the material, or roast the vessel. The jiang is saved, but the foetus may be lost. Note 6. No commentator on this work explains the meaning of “filial stick.” The word for “roast” (*ji*) is like barbecue, indicating a high temperature. This seems to be a puzzling superstition.

24. Jia Sixie. 544 AD. *Qimin yaoshu* [Important arts for the people’s welfare (Continued)]. China. Passage on soy reprinted in C.N. Li 1958 #66, p. 66-67. Translated by Shih Sheng-han 1958, 1962, and H.T. Huang 2000. [Chi]
 • **Summary:** Continued: Wade-Giles reference: *Ch’i Min Yao Shu*, by Chia Ssu-hsieh.

Huang (2000, p. 349) adds: We see from this description that the process is divided into three stages: (a) Preparation of the soybeans to make them receptive to fungal growth. Steaming the soybeans three times before removing the seed coats by pounding is neither effective nor efficient. (b) First fermentation. The moulded soybeans were later given the name *jiang huang* (yellow jiang ferment); they are analogous to the *huangzi* (yellow seed ferment [soybean koji]) produced in the first stage of the process for making soy nuggets (*shi*). Inoculation with two kinds of ferments should greatly hasten microbial growth. Likewise, the wheat flour present in the two *qu* inoculants would enhance the nutrients available to support microbial growth. (c) Second fermentation. The fungal enzymes from the first fermentation hydrolyse the proteins and carbohydrates present to give a savoury, pasty product. A flow diagram of the three stages is shown on p. 350. Huang then compares this process with the process for making soy nuggets (*shi*, p. 338-41), and shows that there are several unnecessary steps in the jiang process. “It is natural that later work would be aimed at correcting the major deficiencies noted above” (p. 351). Note: Of course, enzymes were not known to exist at this time.

Talk with H.T. Huang. 2002. Oct. 19. The method for making jiang in the *Qimin Yaoshu* described above, based on the method for making soy nuggets, is unnecessarily complicated, so it was later simplified several times. Huang (2000, p. 123) lists the complete table of contents of this book, in 10 books and 92 chapters.

Wilkinson (2000). Jia Sixie placed a table of contents (*mulu*) at the head of each *juan* (book, volume, or chapter); he apologized, since this was an unusual practice at the time (p. 289). The author was born at the end of the 5th century in Shandong. This is the earliest extant comprehensive agricultural treatise. Although half of the book consists of quotations from previous works (which have thereby been preserved) the rest is based on the author’s experience of farming in Shandong. He also gives detailed information on the eating and drinking habits of the Northern Wei (386-584, when northern China was inhabited by nomadic people from the northern steppes). His descriptions of the different methods of preparing everyday food are the first such descriptions to survive and can be used as recipes (p. 629). Wilkinson conducted a 3-month experiment in Beijing during the winter of 1999; he asked his chef to prepare dishes based on the cooking methods, ingredients, and occasional recipes found in the QMYS. Some of the ingredients, such as grasses and fibrous plants, are difficult to find today, but “not unpleasant to anyone fond of vegetarian cooking. The fermentation of many of the ingredients or their dousing in fermented bean sauce [*jiang?*] becomes an acquired taste. The absence of sugar, vegetable cooking oil, chili, and tomatoes is hardly missed, and the use of boiling, roasting, or baking is a relief from the oily monotony conferred by stir frying. However I noticed that most of my Chinese guests felt that what they were eating was foreign, not Chinese” (p. 636). The earliest known record of everyday cooking in China is in the QMYS, which is also the main primary source on food and cooking methods in northern China during the Northern Wei of the Northern dynasties. (p. 639, 641).

25. Jia Sixie. 544 AD. *Qimin yaoshu* [Important arts for the people’s welfare (Continued)]. China. Translated by Shih Sheng-han 1958, 1962. [Chi]

• **Summary:** Continued: Wade-Giles reference: *Ch’i Min Yao Shu*, by Chia Ssu-hsieh. This is the world’s earliest encyclopedia of agriculture.

Letter from Dr. H.T. Huang, 1991. Aug. 4. In the inestimable classic of the 6th century A.D., the *Ch’i Min Yao Shu*, which describes the making of every conceivable type of processed food (even the making of yogurt) that was of importance, tofu is not mentioned at all. This indicates that tofu had not yet gained the stature of one of the “useful arts” for the people’s welfare by the 6th century AD (See also Huang 2000, p. 313-14).

Fukushima (1989, p. 2-3). “The first document in which soybeans appeared as a substitute for meat in chiang was the *Ch’i-min Yao-shu* (*Saimin-Yojutsu* in Japanese) by Chia Ssu-hsieh (Ka Shikyo in Japanese), the world’s oldest encyclopedia of agriculture, published in 535 AD in China.” (Note: The above statement is not true; as of Nov. 2002, five Chinese documents, from 166 B.C., mention soybean jiang before the *Ch’i-min Yao-shu*.) Two processes for making shih (soy nuggets) are described in the *Ch’i-min Yao-shu*. One is the process described earlier in the *Shi-ching* by Hsieh Feng (which survives only in the *Ch’i-min Yao-shu*). In the second process, first described in the *Ch’i-min Yao-shu*, soybeans are winnowed, cooked, drained, and cooled. They are piled, the temperature is measured, and then they are stirred. The last 3 steps are repeated 3 times until they are spontaneously molded. They are then spread and furrowed to make soybean koji. This is winnowed, washed, drained, dried, moistened, piled, fermented, and dried to give unsalted soybean shih (p. 8).

Yu (1987, p. 25): Discusses skills of farming, crop rotation, plowing, care of livestock, fish culture, and food processing in the middle and lower reaches of the Yellow River. Note: This is the earliest document seen (Nov. 2002) that discusses fish culture (fish farming, aquaculture); however soybeans were not used as fish feed.

Wang and Fang (1986): In this 6th century book on Chinese technology, the product chiang-ching was mentioned. The characters show that the product was related to chiang and was probably the origin of chiang-yu (soy sauce). But the method of preparing soy sauce was first described in the 16th century *Pen-ts’ao kang-mu* by Li Shih-chen. (Note: For an excellent discussion of the much earlier origins of soy sauce in China, see Huang, 2000, p. 358-74.) Also in this book more than 20 methods of preparing *tsu* (Chinese-style vinegar made from grains such as millet, rice, or sorghum) are discussed. The grain is cooked, mixed with *ch’ü* (koji), packed in a sealed container, and allowed to ferment for 3 weeks.

Yokotsuka (1986, p. 198) cites this as the earliest document seen that mentions a liquid soy sauce. He states that the *Chi-Min Yao-Shu* (532-549) discussed *ch’ü* (mold-cultured cereals made from crushed wheat or wheat flour made into balls or cakes, or cooked rice), Chiang (made from soybeans or wheat), Shi (mold-cultured soybeans with or without salt), and Shi-tche (the saltwater extract of shi).

26. Jia Sixie. 544 AD. Qimin yaoshu [Important arts for the people’s welfare (Continued)]. China. Translated by Shih Sheng-han 1958, 1962. [Chi]

• **Summary:** Continued: Wade-Giles reference: *Ch’i Min Yao Shu* (QMYS), by Chia Ssu-hsieh. Francesca Bray (1984) in her superb book on agriculture in China (*Science and civilisation in China. Vol. 6, Biology and biological technology. Part II: Agriculture. Joseph Needham series*)

offers many important insights into the QMYS. She cites it as: Essential Techniques for the Peasantry. Northern Wei, c. +535. By Chia Ssu-Hsieh. Textual references are to the 1957 ed. of Shih Sheng-Han. Bray devotes a long section (p. 55-59) to discussing this work and its context in detail. It is the “earliest Chinese agricultural treatise to have survived in its entirety. It is a long and impressive work, logical and systematic in its arrangement, comprehensive and detailed in its treatment, and a model for all subsequent Chinese agronomists.” She translates the introduction. A long work, it is divided into ten books comprising 92 chapters and over 100,000 characters. It quotes from more than 160 other works, sometimes at great length. Our present versions of the *Fan Shengzhi Shu* [The book of Fan Shengzhi (on agriculture)] (10 BC) and the *Simin Yueling* [Monthly ordinances for the four classes of people] (160 AD) are based almost exclusively on passages cited in the *Qimin Yaoshu*. “Almost half of the book consists of quotations, but the main body of the text is from” Jia Sixie’s own hand. “Little is known about the author except that he served as a middle-ranking official; however it is generally assumed that his agricultural experience was based on conditions in the Shantung area.” The work describes in depth “the practical details of running an agricultural estate, cultivating both subsistence and commercial crops and directing a number of household manufactures and culinary preparations.” The book also gives a detailed description of hemp cultivation (Bray, p. 535).

Adzuki beans are also referred to frequently, especially in connection with cultivation of green manures. With the development of printing in China in the early Song dynasty, it was one of the first agricultural works to be printed by imperial order (Bray, p. 53).

Concerning soybeans (Bray, p. 514-15): “The soybean was probably the most important legume grown in China, but it was by no means the only one. ‘Lesser beans’ (*hsiao tou* or *ta*) came, according to the *Ch’i Min Yao Shu*, in three varieties, red, green and white (Fig. 239). The term *hsiao tou* can probably be identified with the adzuki bean, *Phaseolus angularis* (Willd.) Wight, which is native to China and Japan.”

Note: This is the earliest document seen that clearly mentions the azuki bean.

Bray (1981): Northern Chinese agricultural methods and crops, with extended sections on preserving, brewing, exotic plants, etc. With the Nongshu perhaps the most fundamental work. This document, which arrived in Japan during the late 700s, was a key link in the transmission from China to Japan of food preparation techniques. It described how to make soy nuggets. Lists varieties of soybeans and how to grow them. Says Chang Chien brought soybeans to China.

27. Jia Sixie. 544 AD. *Qimin yaoshu* [Important arts for the people's welfare (Continued)]. China. Translated by Shih Sheng-han 1958, 1962. [Chi]

• **Summary:** Continued: Wade-Giles reference: *Ch'i Min Yao Shu* (QMYS), by Chia Ssu-hsieh. Bo (1982): This is the world's earliest document describing techniques for processing agricultural products. The production methods for soybean chiang and shih (soy nuggets) are described in detail. In these descriptions, the author frequently used the terms "tou-chiang-ch'ing" (literally "soybean chiang refined") and "chiang ch'ing" (literally "chiang refined"), but unfortunately he didn't describe how these products were made. These terms are almost surely related to the term "ch'ing chiang" used in the *Ssu Min Yüeh Ling* by Ts'ui Shih of the Later Han. Shih was made from soybean koji. Using only soybeans (instead of soybeans and wheat, as for chiang) hydrolyzes the protein more efficiently, and was thus well suited for making soy nugget sauce (*kuki-jiru*). Thus this book contains about 70 recipes for using soy nugget sauce, many more than for soy sauce. Yet the book does not explain how to make soy nugget sauce.

The *Ch'i-min yao-shu* quotes from an even earlier non-extant work, the *Shih ching* (*The Classic of Food*; date and authorship unknown), giving the *Shih ching's* recipe for making "one thousand year bitter soy wine."

Sato (1963, p. 9), in his book titled "Documents on Soy Nuggets, Chiang, Miso, and Shoyu," cites this as the third earliest Chinese document seen on the subject. Called the *Seimin Yojutsu* in Japanese, it was translated into Japanese in 1959 by Nishiyama Kakekazu and Kumadai Yukio. It is written entirely in Chinese characters (*Kanbun*).

Shih Sheng-han (1958). The first English-language (partial) translation of this book; revised 2nd ed. in 1962. For details see these two works. The section titled "Fish-pond" (1958 and 1962, p. 72) states: "There is a whole chapter (62) on fish-pond management... But the source and the calculations of the quotation are dubious. Anyhow we can infer from this chapter that fish-pond management was started in China earlier than the 6th century."

28. Jia Sixie. 544 AD. *Qimin yaoshu* [Important arts for the people's welfare (Continued)]. China. [Chi]

• **Summary:** Continued: This record concerns information on soy sauce, based on the research and writing of H.T. Huang (2000). The section titled "Fermented soy sauce, jiangyou" (p. 358-78) contains an excellent, detailed discussion of this subject. In its food processing chapters, the *Qimin Yaoshu* (QMYS) mentions 3 seasoning agents that have been considered the ancestors of soy sauce: *jiangqing* (W.-G. *chiang ch'ing*), *shizhi* (W.-G. *shih chih*), and *shiqing* (W.-G. *shih ch'ing*). *Jiangqing* (which is "clarified jiang," is *qingjiang* with the two characters in reverse order and probably means the same thing) is used as a condiment in five recipes—in chapters 70, 76, 77, and 87.

Much more popular is *shizhi* (aqueous extract of soy nuggets / fermented soybeans) which is used in at least 26 recipes—in chapters 76, 77, 80, 82, 87, and 88. Finally there is *shiqing* (clarified soy nuggets / fermented soybeans), which is used in 3 recipes—in chapters 76 and 77.

Unfortunately the QMYS gives no indication of how *jiangqing* or *shiqing* were prepared, although in the recipe for a fish and vegetable stew this is, luckily for us, a brief statement on how *shizhi* was obtained by boiling soy nuggets (*shi*) in water. In Chapter 76 (p. 465) we read:

Shizhi: Cook [soy nuggets] in a separate pot of water. Let it boil once. Strain off the soy nuggets, and after the soup settles, decant the clear solution. Do not stir the water during cooking, lest you muddy the decoction so that it will not clarify after straining. When cooking *shizhi*, stop the process as soon as the water reaches the light brown color of amber. Do not allow it to become too dark lest the juice be bitter (Huang, p. 359).

In examining the recipes in the QMYS it is easy to get the impression that these 3 types of soy sauce are used interchangeably. Is it possible that they were simply different names for the same product? The answer is no. There are two cases in which both *jiangqing* and *shiqing* are used in the same recipe, and another case in which *shizhi* and *shiqing* are used to cook the same dish. These examples leave no doubt that these are the names of three different types of soy sauce.

A full-page table (Huang, p. 372) shows the "Usage of soy condiments in food recipes from the Han to the Qing dynasties." The seasonings based on jiang (fermented soybean paste) are used in 7 recipes: Jiang itself in 2, and soy sauce made from jiang (*jiangqing*) in 5 recipes. However the seasonings based on soy nuggets (*shi*) were used in 48 recipes (far more): Soy nuggets in 20 recipes, soy nugget sauce named *shizhi* in 26, and soy nugget sauce named *shiqing* in 2.

Note: This is the earliest document seen (Aug. 2005) that mentions the soy condiments or seasonings *jiangqing* or *shiqing*.

29. Mao Heng. comp. 642 AD. *Maoshi zhengyi* [Elucidation of the *Book of Odes*]. China. [Chi]*

• **Summary:** Wade-Giles reference: *Mao Shih Chêng I*, compiled by Mao Hêng (W.-G. Mao Hêng, Former / Western Han, 2nd century BC), annotated by Zheng Xuan (W.-G. Chêng Hsüan, Later / Eastern Han, 2nd century AD), and commented on by Kong Yingda (W.-G. K'ung Ying-Ta; 642 AD; he lived 574-648). Tang dynasty. Zheng Xuan's commentary states that *hai* is jiang made from meat. When the jiang is thin it is called *haitan*; thus *tan* is the juice from *hai*.

Huang (2000) translates this title as "The Standard *Book of Odes*" (p. 619-20) and as "Elucidation of the *Book of Odes*" (p. 333n).

30. Su Jing (=Su Gong); et al. comps. 659 AD. Tang bencao [Tang dynasty pharmacopoeia]. China. [Chi]

• **Summary:** Wade-Giles reference: *T'ang Pên Ts'ao*, compiled by Su Ching (=Su Kung), et al. Tang dynasty. This book has been lost. See: Su Jing, ed. +659. *Xinxiu Bencao* [Newly improved pharmacopoeia].

31. Su Jing (=Su Gong); et al. comps. 659 AD. Xinxiu bencao [Newly improved pharmacopoeia]. China. Passage on soy reprinted in H.T. Huang 2000. [Chi]

• **Summary:** Wade-Giles reference: *Hsin Hsiu Pên Ts'ao*, compiled by Su Ching (=Su Kung), et al. Tang dynasty. The text of this book is identical to that of the *Tang Bencao*, which has been lost. Huang (2000). It mentions that dried young soybean sprouts (*dadou huangjuan* or “yellow curls”) have medicinal properties (p. 296). It states that soy nuggets (*shi*) are widely used as food. In the spring and summer when the weather is unsettled, soy nuggets are either steamed or pan-fried then soaked in wine, to make an especially good relish (p. 341). Its also states: Jiang is usually made from soybeans. Smaller amounts are made from wheat. Some types are also made from meat and fish; these are named *hai* and are not used medicinally (p. 354). Also mentions malt sugar (*yitang*).

Huang (2000, p. 134-36, 616) adds: Date: +659, Tang. Title: The Newly Improved Pharmacopoeia. Edited by Su Jing (= So Gong) and a commission of 22 collaborators. This work was afterwards commonly but incorrectly known as the *Tang Bencao* (W.-G. *T'ang Pên Ts'ao*). It was lost in China, apart from manuscript fragments at Dunhuang (W.-G. Tun-huang), but copied in +731 by Tanabe Fubito (a Japanese physician or medical student) and preserved, though incompletely, in Japan (at Ninnaji).

Note: Talk with H.T. Huang. 2003. May 3. The *Tang Bencao* has been lost. But the exact same work (the entire text is identical) was rediscovered under the name *Xinxiu Bencao*; therefore the latter work is usually cited. The *Tang Bencaozhu* is a later commentary on the *Tang Bencao*, published within the *Zhenglei Bencao* (1082 AD), a Song dynasty work.

This was the first official pharmacopoeia in any country worldwide, the first compiled by imperial decree, the first to be richly illustrated. The unusual history of this great work has been told by Needham (1986, p. 265-74, 570, 587). The illustrations in the original editions are all lost. However the table of contents and significant parts of the text have been preserved in chapters 2 to 4 of the *Qianjin Yifang* (Supplement to *A Thousand Golden Remedies*) (+660). All this made it possible for the complete ancient text to be published in 1981.

Letter from Dr. H.T. Huang, expert on the history of Chinese food and agriculture. 1996. Sept. 29. “The earliest document with an illustration of the soybean is probably the

illustrated *Hsin Hsiu Pên Ts'ao* (Newly Improved Pharmacopoeia) (+659). Illustrations to this work are now lost, but some are preserved in the *T'u Ching Pên Ts'ao* of +1061 and later in the *Ch'ung Hsiu Cheng-Ho Ching-Shih Cheng-Lei Pei-Yung Pên Ts'ao*, generally known as *Cheng Lei Pên Ts'ao* (CLPT), +1249 (final version), which remains available today. The entry on soybean (*Dadou*) in the CLPT includes a picture of the plant. A copy is attached.”

Note: This is the earliest document seen (Oct. 2005) that contains an illustration of a soybean.

Needham (1986, p. 174): The *Tang Bencao*, compiled in c. +660 under the chairmanship of Su Jing (W.-G. Su Ching), was the first Chinese work to mention the castor-oil plant (ma, *Ricinus communis*); how long the plant had been known in China before that time is unknown.

Needham (1986, p. 264-74): This was the first national pharmacopoeia, issued by royal decree, in any civilisation. Nearly 1,000 years would pass before a similar work was produced in Europe under government authority; that was the *Pharmacorum... Dispensatorium*, by Valerius Cordus, published in 1536 by the Municipality of Nuremberg [in today's Germany]. Yet though it was also officinal, it was not national, and for that we have to wait for the first *London Pharmacopoeia* of 1616, issued by royal proclamation for the whole country of England. Emperor Kao Tsung (Li Chih) came to the throne in +650 and in the following year he commissioned Li Chi (a famous general) and Yü Chih-Ning (a high civil official) to superintend the preparation of a new pharmaceutical natural history, radically revised and improved. Published in +659, this work “was a landmark of natural history at least as much as a treatise on *materia medica*. It was, so far as we know, the first of the pandects to be richly illustrated.” The illustrations were of plants, animals, and minerals. Note: A pandect is a treatise covering an entire subject. “Although existing manuscripts do not all show it, we know that [this book]... fully maintained the red and black colour system of the T'ao Hung-Ching.” Unlike most later pandects “there is almost no quotation of authorities or differences of opinion; the information is set forth as if it were from the pen of one man... The result is a singularly fresh approach, as if everything had been written down anew.” The book had a rather sad history. Although so great a work, it was produced a couple of centuries before the beginning of printing in China, and must therefore have circulated only in manuscript form on the flimsy medium of paper.” By the year +970 it had certainly become rare. The work is now accessible only through quotations and fragments. “Putting all of the pieces together one can say that we still possess the greater part of 12 out of the 20 text chapters” and its table of contents. The book had a close connection with the development of medical and scientific education in China

and spread of medical-scientific culture to Japan. In +731 in Japan, Tanabe Fubito was copying this work.

Bo (1982): This T'ang dynasty work states: "The majority of chiang varieties are made from soybeans, and very rarely use wheat or barley (mugi)."

32. Meng Shen. 670 AD. *Shiliao bencao* [Compendium of diet therapy (Materia dietetica)]. China. Passages on soy reprinted in H.T. Huang 2000. [Chi]

• **Summary:** Wade-Giles reference: *Shih Liao Pên Ts'ao*, by Mêng Shên. Tang dynasty.

Huang (2000) notes that this book emphasizes the relationship between nutrition and health, and the medicinal properties of foods. It was the first of the *Bencao* compilations devoted to diet therapy (p. 116, 135-36). It mentions that dried young soybean sprouts (*dadou huangjuan*) have medicinal properties (p. 296). It gives a recipe for cooking soy nuggets (*shi*) similar to that from the *Xinxiu Bencao* (Newly improved pharmacopoeia) (+650) (p. 341). It also discusses soy nugget sauce (*shizhi*; W.-G. *shih chih*), noting that an excellent product comes from Shan prefecture and describing briefly how it is made: The soy nugget sauce (*shizhi*) from Shan prefecture is better than ordinary soy nuggets (*shi*). To make it, allow cooked soybeans to ferment to the yellow mold stage of soybean koji. For each *tou* (pint) [of soybean koji], add 4 pints of salt and 4 ounces of pepper. [Note: Some water was probably also added]. It will be half done after 3 days in spring, two days in summer, and 5 days in winter. Add 5 ounces of raw ginger to give it a clean, delicate flavor (p. 360-61). This work also mentions mung beans (p. 298) and malt sugar (*yitang*, p. 460).

Hagerty (1917, p. 4) states: "The *Shih liao pên ts'ao* (Materia Medica, by Mêng Shen of the T'ang Dynasty, second half of the 7th century), says: 'The *Ta tou* [soybean] has a cold effect upon the human system. When mixed with rice and pounded into a powder, it may be used as a remedy for reducing all kinds of inflammatory swellings. It is used as a remedy for swellings or inflammation in the region of the reproductive organs of both male and female. This remedy is prepared in the form of a poultice made by wrapping the bean paste in cotton cloth and applying to the diseased part. It is also a specific for poison from eating certain herbs. According to this work, if these beans are boiled into a liquid form, and the mixture taken, it will eradicate all poison from the system and cure gastric fever, paralysis, pains, difficulty in passage of urine and other bladder troubles. It is also good for improper circulation of the blood, improper functioning of the heart, liver, kidneys, stomach, and bowels, and also a remedy for chills. When mixed together with the ashes of burned mulberry twigs and water, and boiled, it is used as a remedy for dropsy and swelling of the bowels. The yellow bean is a specific for paralysis, pains in thighs, improper functioning of the heart,

liver, kidneys, stomach, and bowels, and constipation. It is also used to increase the lung power (?), make the body plump, and beautify the complexion. These beans are also cooked until they are of an oily consistency, mixed with hog's fat, and taken in the form of pills in order to fatten and increase the strength of the body. This may also be used as a remedy to cure hoarseness.

"To prepare a remedy, take one "Shêng" (Chinese pint) of fresh *Ta tou* beans, forty-nine green bamboo sprouts about four inches (Chinese) long, and one "fen" (one-tenth of an inch) wide. Boil thoroughly in water, and take two doses, one during the day and the other at night—and also after each meal. Another method of utilizing these beans consists of washing them thoroughly, and grinding into a meal and combining with chicken's eggs. This is eaten as a food and will cause man to live a long life. When first eaten they will cause the body to become heavy, but after eating constantly for one year, they will cause the body to become light and also increase the power of the male reproductive organs."

Hagerty continues his translation on p. 78 concerning soy nuggets (See also Bretschneider, *Botanicon Sinicum* 1:45): "The *Shen-chou-fu*, Liquid bean relish, is very much better than the ordinary bean relish and gives the following directions for its manufacture: Take some *Ta tou* beans [soybeans] and steam until yellow, to each *tou* or peck, add four *sheng* or pints of salt, four *liang* or ounces of pepper. If made in the spring, let it stand for three days; if made in the summer let it stand for two days; if made in the winter let it stand five days, when it is half ripe. Now add five *liang* or ounces of fresh ginger and let it stand in order to clarify. The best method is to bury the vessel containing this mass in horse manure. When *Ta tou* [soybeans] cannot be obtained, the good bean relish can be used as a substitute."

Note: This is the earliest document seen (Nov. 2005) that mentions cotton cloth.

33. Emperor Monmu. 701 AD. *Taihô ritsuryô* [The Taiho Law Codes]. Japan. [Jap]*

• **Summary:** This is the earliest document seen (July 2000) concerning soybeans, soybean products, or miso in Japan. Although it does not specifically mention soybean cultivation, the soybeans used to make the various fermented soy products described below must have been grown in Japan. This document also contains the earliest date seen for soybeans in Japan, or (by inference) the cultivation of soybeans in Japan (A.D. 701).

Shurtleff and Aoyagi (1976. *The Book of Miso*, p. 216; 1983. *The Book of Miso*, 2nd ed., p. 219): One of Japan's earliest constitutions, the *Taihô Ritsuryô* established the *Hishio Tsukasa*, or Bureau for the Regulation of Hishio Production, Trade, and Taxation in A.D. 701; it went into effect in 702. The *Hishio Tsukasa*, located in the Imperial Palace, was an annex of the emperor's kitchen (*kunaicho*

daizenshoku), where hishio was made. Using methods very similar to those developed in China, it transformed soybeans into high- and low-quality *hishio* (which resembled Chinese *chiang*), soy nuggets (*kuki* or *shi*), and *misho* (an ancestor of miso; the term “miso” had not yet been coined). These foods and seasonings were consumed at the Imperial Household. Note: This is the earliest document seen (Oct. 2008) that mentions *kuki*, an early type of Japanese soy nuggets / salted, fermented soybeans.

Yokotsuka (1986, p. 198) states that the “Taiho-Law (701) mentioned soybean-hishio, miso, *kuki* (same as *shi*), tare-miso, usu-dare, and miso-damari.” But in a letter (June 1988) to William Shurtleff, who questioned the correctness of this, he stated, “This was a serious mistake. I am fully aware that there is no description of filtered soy sauce in the Taiho Ritsuryo. I should have written:

“Taiho-Law (701): Sho-shi and miso

“Tare-miso, usudare, miso-damari (1300–1500)

“Ekirinbon-setsuyoshu (1598): Shoyu.”

Usudaré and *miso-damari* were apparently liquid soy sauces. *Usu-daré* means a thin taré, where *taré* is a typically thick seasoning sauce. *Miso-damari* is the liquid that separates or is separated from miso, often forming a pool in the upper surface of the vat.

Reischauer and Fairbank (1960, p. 481-82) notes: “The Law Codes. The details of the administrative system which the Japanese borrowed from China can best be learned from the law codes they compiled on the basis of the Chinese models... The very concept of law was a new idea. Hitherto the Japanese had had only the unwritten precepts of the Shinto religion... The first code seems to have been compiled under Tenchi, but the most famous was the Taiho Code of 701.”

34. Fujiwara, Fuhito. 718 AD. *Yōryō ritsuryō* [Yoryo ritsuryo]. Japan. [Jap]*

• **Summary:** According to Ichiyama (1968) an early reference to hishio, perhaps a soy-based product, appeared in this book. It mentioned various types of *chiang* and soy nuggets, plus *misho*, the second character of which was *chiang*. Address: Japan.

35. *Nihon shoki* (or *Nihonshoki*, or *Nihongi*) [*Nihon shoki: Chronicles of early Japan*]. 720 AD. Japan. [Jap]

• **Summary:** The second version of the mythical story of the origin of the soybean in Japan, following that told in the *Kojiki* (A.D. 712) is as follows, from a note in Philippi’s 1968 translation of the *Kojiki* (p. 404-05): “Ama-terasu-opo-mi-kami [also called Amaterasu-omikami, the Shinto Sun Goddess], hearing that a deity called Uke-moti-no-kami [a food deity] dwelt in the Central Land of the Reed Plains, sent Tuku-yomi-no-mikoto [the moon god] to inquire after her.

“When Tuku-yomi-no-mikoto arrived there, Uke-moti-no-kami took rice, fish, and meat from her mouth, and, placing them on tables, offered them to him. At this he became angry and killed her, then returned and reported this matter.

“Then Ama-terasu-opo-mi-kami rebuked the moon deity and vowed never to set eyes on him again. For ever after she dwelt one day and one night apart from him. [A mythological explanation for the rotation of sun and moon.]

“When Ama-terasu-opo-mi-kami sent a messenger to see, in the dead Uke-moti-no-kami’s head there had come into being cattle and horses, on her forehead millet, on her eyebrows silk-worms, in her eyes Deccan grass [MJ *hie*; also panic grass], in her belly rice, and in her genitals wheat, soy beans, and red beans [probably azuki].

“When these were taken and presented to Ama-terasu-opo-mi-kami, she rejoiced and caused these things to be used by mortal men for their livelihood. [Asahi ed., I, 86-87; Aston, I, 32-33.]”

For a background on this book, see *Kojiki* (A.D. 712). For other English translations see Aston (1896, 1972; p. 32-33).

36. *Tōdaiji shōsōin monjo* [Documents in the Shosoin imperial treasury at Todaiji temple in Nara]. 730-748 AD. Japan. [Jap]*

• **Summary:** Sato (1963, p. 27), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the earliest Japanese document seen on the subject. He gives the date as Tenpyo 2 (730 A.D.). It is written entirely in Chinese characters (*Kanbun*).

Ichiyama (1968) says this is a collection of documents, not just one. “In 730 AD taxes were being paid on miso and *hishio*, in 731 on *kuki*, *arabishio*, and *richio*.”

Shinryū Sekine, in his book *A Study on Eating Habits in the Nara Period* (1969, 1974) quotes from the *Shosoin-monjo*, a document preserved in the Shosoin, the storehouse at the Todai-ji temple in Nara. From the phrase “... to obtain liquid out of brewed or fermented soybeans...” in the document, Sekine says: It is clear in those days that *sho* in those days was liquid.

Shurtleff and Aoyagi (1983. *The Book of Miso*, 2nd ed., p. 219): “The most detailed information to date on the early relatives of miso and the first clear reference to a soybean hishio appeared in the Todaiji Shosoin documents, written between 730 and 748, and still preserved in excellent condition in the Imperial Treasury of the Shosoin, connected with Nara’s Todaiji temple. It records that in 730 taxes were being paid on hishio and on *misho* (a variety of hishio and an early relative of miso). A document from the next year mentions the same foods again. A document written prior to 748 clearly referred to soybean hishio (Ichiyama 1968).”

37. Manyōshū [Man'yōshū: Collection of Japan's earliest songs and poems]. 760 AD. Japan. For translations see Pierson 1929 and Honda 1967. [Jap]*

• **Summary:** The earliest poems in this extraordinary work were written in AD 315. In most poems Japanese words are elaborately spelled out with Chinese characters used phonetically.

Sato (1963, p. 29), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the second earliest Japanese document seen on the subject. It was published in year 3 of Tenpyō Hoji (760 A.D.) and the pertinent information is in Volume (Kan) 16. It is written entirely in Chinese characters (Kanbun).

Shurtleff and Aoyagi (1983. *The Book of Miso*, 2nd ed., p. 219): “One of the first references to this hishio appears in the *Man'yōshū*, an extraordinary collection of thousands of Japan's earliest songs and poems recorded from as early as the year 315 A.D. and compiled circa 760. In most of the poems, the Japanese words are elaborately spelled out with Chinese characters used phonetically. The character for hishio (chiang) appears in scroll 16 in a poem by Imiki Okimaru (686-707), a humorous bard who improvised at banquets for the court nobility. We and Pierson (1929) translate this as:

“I want to eat red snapper (*tai*)

“With a dressing of minced garlic and vinegar-hishio

“So do not offer me a leek soup.

“Another poem describes two comic crabs happily making themselves into crab hishio seasoned with pounded elm bark. Mention is also made of hishio containing wild game and deer meat. Unfortunately we are not told exactly what type of product this hishio was nor how it differed from miso and chiang, yet it is now generally believed that all of these products were well known at this period among the nobility and, to a lesser extent, the common people.”

Yokotsuka (1986, p. 198) states that the *Manyōshū* (350-759 A.D.) mentioned Koji (mold-cultured cereals) and Hishio (same as chiang, made from fish, meat, or soybeans). That would make this the earliest Japanese document seen that refers to koji.

38. Omi, Mifune. 785 AD. ZZZ T'ang ta he shang tung cheng chuan [Biography of the great monk from the T'ang dynasty who traveled to the East]. China. [Chi]*

• **Summary:** Tang dynasty. Williams (1988): The monk discussed is Chien Chên (Jap. Ganjin, who lived A.D. 688-763), who was blinded while traveling to Japan to teach Buddhism. The author, Omi, lived A.D. 722-785 in Japan, wrote this work in Classical Chinese, probably between A.D. 763 and 783. New editions of the work have been published in 1936 and 1979.

Concerning Ganjin, Shurtleff and Aoyagi write in *The Book of Miso* (1976, p. 216): “One of the most colorful chapters in the history of miso concerns the great Chinese

Buddhist master Ganjin. The founder of the Japanese Ritsu or ‘precepts’ sect and of the well-known Toshodaiji temple in Nara, Ganjin spent over 11 years trying to reach Japan. After being blocked by pirates, shipwrecks, and storms, and having lost his eyesight during one of his 6 attempted crossings, he finally succeeded in 754 at the age of 66. The records of his ship's cargo show that in addition to 185 monks, sailors, and craftsmen, he brought 100,000 gallons of ‘sweet kuki.’ Later records show that this same fermented soybean food was prepared at his temple, carried by foot to Kyoto, and peddled there in the streets.

“Although Ganjin's sweet kuki was related to miso, it was probably more a preserved food than a seasoning, similar to today's Daitokuji natto. Nevertheless, Ganjin is often said to have brought the first prototype of Japanese miso from China, and if we take this sweet kuki to be the original Japanese miso, then he was clearly its transmitter. But records show that something called ‘miso’ was already being sold in Nara's markets more than 20 years before Ganjin's arrival. Hence, some scholars have concluded that the popular ‘Ganjin theory’ probably reflects more of a desire on the part of early miso makers and Buddhist priests to link their new product to Ganjin's lofty reputation than to historical fact.”

H.T. Huang (2000, p. 317). There are two popular theories about how tofu was transmitted from China to Japan. The first theory holds that it was brought from China by the delegation of Buddhist monks headed by the master Kanshin (Jianzhen; W.-G. Chien Chên), who arrived in A.D. 754. While this view is certainly plausible, there is as yet no documentary evidence to support it.

Note 1. This is the earliest document seen (March 2003) concerning an early foreign traveler in Japan (Chien Chên; Jap. Ganjin) in connection with soybeans.

Note 2. This is the earliest document seen (April 2001) that is a biography of a person involved with soyfoods (soy nuggets) or soybeans.

39. Kiyohara Natsuno. 834 AD. Reigekai or Ryōgekai [Reigekai or Ryōgekai]. Japan. [Jap]*

• **Summary:** Sato (1963, p. 8), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the fifth earliest Japanese document seen on the subject. The pertinent information is in volume 1 (Teninrei). It was completed in the 10th year of the Tencho era (834 A.D.). It is written entirely in Chinese characters (Kanbun).

40. Endo Hoju. 843 AD. Zoku Nihon kōki [Continuation of the Nihon Kōki]. Japan. July. [Jap]*

• **Summary:** Sato (1963, p. 29), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the fourth earliest Japanese document seen on the subject. It was published in the 7th month of the 9th

year of the Jowa era (July of 843 A.D.). It is written entirely in Chinese characters (Kanbun).

41. Koji dan [Stories about ancient things]. 886 AD. Japan. [Jap]*

• **Summary:** Sato (1963, p. 8), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the seventh earliest Japanese document seen on the subject. It was published in the second year of the Ninna era (886 A.D.). It is written entirely in Chinese characters (Kanbun). Not clear are 2 shinsetsu. 49 Koko. Mitsutaka.

42. Nichinichi Ju (Monk). 893 AD. Shinsen jikyô [Newly selected character mirror dictionary]. Japan. [Jap]*

• **Summary:** Sato (1963, p. 31), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the eighth earliest Japanese document seen on the subject. It was published in the 4th year of Kampyo. It is written entirely in Chinese characters (Kanbun).

43. Sagawaka Doshin (Michimasa?). 893 AD. Ruiju Kokushi [Ruiju Kokushi]. Japan. [Jap]*

• **Summary:** Sato (1963, p. 29), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the third earliest Japanese document seen on the subject. It was published in Kanpyo 4 (173 saii, Nen soshin). It is written entirely in Chinese characters (Kanbun).

44. Han E. 900 AD. Sishi zuanyao [Important rules for the four seasons]. China. Passage on soy reprinted in H.T. Huang 2000, p. 351. [Chi]

• **Summary:** Wade-Giles reference: *Ssu Shih Tsuan Yao*, by Han O. Date of publication: Late Tang dynasty. Huang (2000, p. 351) notes that the method for making jiang described in this book represents a significant improvement over that from the *Qimin Yaoshu* (+544). A method for making jiang in ten days is given:

“Jiang substrate: Take one *dou* of yellow soybeans, clean three times (to remove extraneous matter), drain off water, steam thoroughly until the beans are tender (*lan*) and collect on a flat surface. Mix the beans with two *dou* and five *sheng* [10 *sheng* = 1 *dou*] of wheat flour. Be sure all the beans are individually coated with the flour. Steam again until the flour is cooked. Spread and allow to cool to human body temperature. Cover the ground evenly with cereal leaves. Spread the beans on top, and cover them with another layer of leaves. Incubate for three to four days, until the beans are covered with a dense yellow coat. Dry them in the sun and store the finished jiang substrate.

“Chiang incubation: When it is time to make jiang, get ready one *dou* of water for every *dou* of jiang substrate used. Dissolve five *sheng* of table salt in water at body temperature. Mix the salt solution with the jiang ferment in

a jar. Seal tightly. After seven days stir the contents. Place three ounces of Han pepper in a cloth bag, and hang the bag in the jar. Add one catty of cold, cooked [edible] oil and ten catties of wine. After ten days the jiang will be ready.”

Huang then comments on this improved process (p. 351-52). “Although the description is rather sketchy, we can see that the process has been simplified and streamlined. It now follows the same general scheme that had been developed for the brewing of *jiu* (wine) and the making of *shi* (fermented soybeans) [soy nuggets]. As is the case with the *jiu* and *shi* processes, the first stage involves an aerobic surface culture, and the second, a mildly anaerobic submerged incubation. These changes should make the process more efficient. Even without the use of preformed inoculum, the first stage now takes only four days, instead of thirty days. The second fermentation takes only ten days whereas the old method requires more than twenty days. Although there is no indication that the beans are dehulled before use, the text says that they are steamed until *lan*, i.e. soft, ripe and tender. This means the internal structure of the beans is already damaged; they are thus rendered easily susceptible to invasion by proliferating fungal myceliae.”

45. Ogura Yoshiyuki. 901-908 AD. Sandai jitsuroku [Three generations of real records]. Japan. Widely circulated in manuscript form by 886 A.D. [Jap]*

• **Summary:** Note: This is the earliest document seen, and the earliest Japanese-language document seen, (March 2009) that contains the modern word miso. This is also the earliest document seen (Jan. 2009) concerning the etymology of miso. It portrays miso as a truly Japanese food, rather than a Chinese import. Ichiyama (1968), however, shows that the modern characters for miso are not in it, but in *Fuso Ryakuki*. Sato (1963, p. 30), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the sixth earliest Japanese document seen on the subject. It comes from the *Shoin Zashin Kobai Shinko*, published in the first year of Teikan, by Daizen Tenzashin. It is written entirely in Chinese characters (Kanbun).

Shurtleff & Aoyagi (1983. *The Book of Miso*, 2nd ed., p. 220): “At the beginning of the Heian period, the word ‘miso’ suddenly began to be written with a new combination of characters, which is used to this day. The character for ‘mi’ meant ‘flavor’ and the one for ‘so’ meant ‘throat.’ The second character was, itself, a Japanese invention and is presently used in no other words. It first appeared in an official Japanese document in 806 in connection with a food called *enso*, a salt seasoning... We may well inquire why the Japanese of this period deliberately invented a new character to replace the character *chiang* (*hishio*) that had been used during the previous two centuries, and why they introduced the character meaning ‘flavor’ into the combination. It seems likely that by this time the Japanese

had so thoroughly transformed *chiang* into a food suited to their own culture and tastes, that they felt it deserved a uniquely Japanese name. In fact, the *Sandai Jitsuroku* portrays miso as a truly Japanese food rather than as simply a Chinese import. But there were broader cultural changes too behind the change in characters. In 894, at the beginning of the Heian period, Japan essentially cut off contact with the outside world, and began an extended period of assimilating and transforming Chinese cultural imports. During this period, Japan also developed the *hiragana* and *katakana* writing styles, which were completed in the 10th century. It was as part of this larger cultural transformation that the change in miso and its characters took place.”

Saito (1985, p. 13): “The Chinese character *so* in the present word *miso* appeared for the first time in the *Sandai Jitsuroku* (858-887).

Fukushima (1989, p. 9): “The first appearance of the present word ‘miso’ was in the *Nihon-Sandai- Jitsuroku*, a history book by M. Sugiwara, Y. Minamoto, T. Fujiwara, and Y. Okura, published in 901 AD in Japan.”

46. Minamoto no Shitagau. 923 AD. *Wamyō ruijūshō* (*Wamyōshō*) [General encyclopaedic dictionary. 10 vols.]. Japan. [Jap]*

• **Summary:** Heian period. This is a collection of Japanese names, by subject.

Needham (1986, p. 590) cites this as: Minamoto no Shitagau. +934. *General Encyclopaedic Dictionary*.

Shurtleff & Aoyagi (1983. *The Book of Miso*, 2nd ed., p. 221): “Some scholars believe that the pronunciation ‘miso’ originated in the *Wamyosho* (also called *Wamyō Ruijusho*), the earliest dictionary of the Japanese language, encyclopedic in scale and written between 903 and 938 by Minamoto no Shitagau. It was modeled after Chinese dictionaries and listed many types of *hishio* including ones pronounced *miso*, *misho*, and *kara hishio*. It also mentioned soy nuggets.”

J.R. Wang and Y.H. Lee (1976) in “Traditional soybean foods in Korea” state that: “Since an old Japanese literature [document], *Hwameyruitsuroku* [*Wamyō Ruijusho*; Collections of Japanese Names, by Subject], of Heian [Heian] records that ‘Maljang (Meju) is a Korean soy sauce and paste’ and a record on Maljang was also observed in the ruins of Nara, it is evident that soy sauce and paste were introduced from Korea to Japan during the Nara period (645-793 A.D.).”

Sato (1963, p. 33), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the tenth earliest Japanese document seen on the subject. See section 16 (Shoume/Anbai). The selections were made during the Encho period then published more than 700 years later in about 1615, during the Genwa era. It is written entirely in Chinese characters (*Kanbun*).

Note: This is the earliest document seen concerning soybeans or soybean products in Korea. It seems very likely that soybeans were also being grown in Korea by this time, but this is not stated.

47. Fujiwara, Tadahira; et al. comp. 927 AD. *Engi shiki* [Law codes of the Engi period]. Japan. 50 volumes. See vols. 23, 33, 39, 42. Japanese summary by Kawakami 1978, p. 207-08. [Jap]

• **Summary:** Compilation of this book started in 905 and was completed in 927. Containing the earliest known information on production of *hishio* and *miso* in Japan, it lists 10 types of *miso* and *hishio*. The word *miso* is written in 5 different ways. Sato (1963, p. 31), in his book titled “Documents on Soy Nuggets, Chiang, Miso, and Shoyu,” cites this as the ninth earliest Japanese document seen on the subject. It was published in the 7th year of the Engi era. It is written entirely in Chinese characters (*Kanbun*).

Shurtleff & Aoyagi (1983. *The Book of Miso*, 2nd ed., p. 221): “The earliest Japanese document to contain information about the production of *miso* and *hishio* was the *Engi Shiki*, an elaboration of old law codes, compiled in about 927 by Fujiwara Tokihira and others. In it we are told that *miso* was a fermented food with soybeans as its main ingredient, but it also contained rice, rice koji, wheat, salt, and saké. The *Engi Shiki* gave detailed information about the *Hishio Tsukasa* government bureau, stated that *hishio* was given to the Emperor’s civil and military officials as part of their annual wage, and listed at least ten different types of *miso* and *hishio*. Among these, the word ‘miso’ was written using at least five different character combinations, all of which were pronounced ‘miso,’ or perhaps occasionally ‘mishio.’

“It is not always clear whether each of these names refers to a different food, or whether the name of a single variety was simply being written with different character combinations. The book gives the amounts of basic raw materials used in preparing numerous different types of *miso* and *hishio*, but most of the quantities appear quite inaccurate and cannot be used experimentally to make the products they describe.

“Although notebooks dating from as early as the 8th century reveal that *miso* was bought and sold in the marketplaces of the former capital at Nara, the first shops specializing in its sale are said to have originated in about 925 in the new capital at Kyoto. The *Engi Shiki* records the presence of a *miso* retail shop in Kyoto’s western market and a *hishio* outlet in the eastern market. Moreover, 50 other shops are reported to have carried *hishio*, and 32 *miso*, as one among numerous other foods. Thus by the middle of the 10th century, it seems that *hishio* and *miso* were becoming basic staples.”

Gotoh (1984, p. 136) states: “*Engishiki* (completed 927 AD) which described in detail the regulations on crop

products (for example, exchange rates of soybeans with bundles of rice and barley for yearly tribute), stated that the Kinki, Chugoku, and Shikoku districts [all located in southwest Japan, from Kyoto to just north of Kyushu] were the main soybean production areas.” He gives a good map of Japan showing these three regions.

Lumpkin and Konovsky (1991, p. 121, citing Igata 1977) state that “*Aomame* [meaning “green soybeans”] is mentioned in the *Engishiki*, a guide to the conduct of government and religious affairs, published in 927 A.D.” [Heian period].

Iino (1999, p. 14): “The *Engishiki*, the legal code of the Heian era, which provides details on the implementation of ancient laws, offers examples on the use and provision of *sho* / *hishio*. It seems that *sho* was a daily necessity up to this period. Iino adds: “The Chinese character *sho* was pronounced *hishio* in Japanese and meant fermented soybeans... No clue as to the original recipe for *sho* can be found, with one exception in ‘General Instructions and Recipes,’ part of the *Daizen-ge* in the *Engishiki*. This recipe states that *sho* made to present to the emperor consists of soybeans, malted rice [koji?], glutinous rice, wheat, liquor and salt. It tells us the proportions of ingredients and the amount of the resulting *sho* but provides no further details.”

There is a debate among scholars as to whether *sho* was a liquid or more like a mash (*moromi*). One part of the *Engishiki* mentions ‘*sho* dregs.’ It seems likely that the dregs remained after the liquid was filtered off. “In the *Engishiki*, liquid *sho* and *sho* dregs were used for pickling gourds, wax gourds, turnips, and eggplant. The *Engishiki* also refers to some foods that are very likely *sho*-pickled fish, such as crucian carp, blowfish, and sardines.” Many kinds of *sho*-pickles were available during this era.

“Mash-style *sho*: When used as a seasoning for processed food, *sho* was probably prepared in mash-like form, not as a liquid. It is not very difficult to prepare liquid *sho*: all you have to do is filter out or extract the mash-like *sho*. Doing so, however, severely reduces the efficiency of the process. The *Engishiki* states that the amount of liquid *sho* produced was less than a third of the total amount of ingredients used. The *Daizen* and *Naizen* in the *Engishiki* also indicate that large quantities of *sho* were used for provisions, workers’ meals and feasts, as well as for many kinds of pickles. It is impossible to think that all this *sho* was of the labor-consuming, wasteful liquid type. Besides, *sho* dregs without liquid after filtering lack the taste and quality that are necessary.”

Note: This is the earliest document seen (July 2007) that mentions sake in Japan.

48. Liu Xu. 945 AD. Jiu Tangshu [Old history of the Tang dynasty (+618-906)]. China. Passage on soy reprinted in C.N. Li 1958 #87, p. 74-75. [Chi]

• **Summary:** Wade-Giles reference: *Chiu T’ang Shu*, by Liu Hsü. Published during the Five Dynasties period (North China). The Biography of Peixu states that during a drought, he saw farmers who were worried because they could not plant soybeans (*shu*) and setaria millet (*su*).

The Biography of Li Yuanliang states that there was an abundant harvest of soybeans (*shu*) and setaria millet (*su*), totaling ten thousand bushels (*hu*). (Translated by H.T. Huang, PhD, July 2002). Dr. Huang adds: In both passages we find soybeans and setaria millet (which seems to have been the major millet of the time) mentioned together; they may have been planted at about the same time.

Wilkinson (2000, p. 504, 736, 819) states that this standard history was written/compiled by Liu Xu (lived 887-946). It was compiled during the years 940-945 (during the Five Dynasties and Ten Kingdoms, *Wudai Shiguo*) and presented/printed in +945. This book covers the entire period of the Tang dynasty, +618-906. Non-Han foreigners mentioned: Xiyu, Nanman Beidi, Dongyi.

Morohashi (1955) says: “In the department of the controller of pickles are 23 jiang craftsmen, 12 vinegar craftsmen, and 12 shi craftsmen.”

49. Tao Ku. 965 AD. Qing yilu [Anecdotes, simple and exotic]. China. Passage on soy reprinted in C.N. Li 1958 #90, p. 75. [Chi]

• **Summary:** Wade-Giles reference: *Ch’ing I Lu*, by T’ao Ku. The section titled *Xiaozaiyang* states: “When Shi Ji was the magistrate of Qing Yang, he emphasized the virtue of frugality among the people, and discouraged the consumption of meat. Instead he promoted the sale of tofu (*doufu*), which gained the sobriquet, ‘mock lamb chops’ or ‘the vice mayor’s mutton.’ (Translated by H.T. Huang, PhD, July 2002).

Note 1. This is the earliest document seen (Feb. 2009) that mentions tofu. Note 2. This is the earliest Chinese-language document seen (July 2002) that uses the term *doufu* to refer to tofu.

Note 3. This is the earliest document seen that advocates both vegetarianism and soyfoods, and that recommends the use of soyfoods (tofu) as a replacement for meat.

Dr. Huang adds: The title of this section can have a double meaning. *Xiao* means “little.” *Zai* can mean either “ruler / minister / mayor” or “sacrificial / slaughtered.” And *Yang* means “mutton” or “lamb.” The intended meaning is clearly “mock (meatless) lamb chops” or “lamb chops for the people.” The story implies that tofu was produced and marketed commercially by the latter part of the Tang dynasty, and that it was less expensive than mutton.

In March 1894, Schlegel and Cordier wrote an article in the European periodical *T’oung Pao* (published in France) titled “The Chinese bean-curd and soy and the soya-bread of Mr. Lecerf. I. Tofu” in which they discussed in detail the story from the *Qing yilu* but without actually citing that

early Chinese book. Instead they cited the *Shuwu yiming shu* (ca. 1644, late Ming dynasty).

In 1968, in a Japanese-language article on the origin of tofu, the well-known Japanese food historian and sinologist Shinoda Osamu showed that this book (called *Seiiroku* in Japanese) was the world's earliest known *document* to mention tofu (Huang 2000, p. 300).

Then, in the 1980s, Chinese researchers found a tomb mural incised on a stone slab from the Eastern / Later Han dynasty (A.D. 25-220) that clearly shows tofu (or a prototype of tofu) being made (Chen, Wenhua 1990).

Huang (2000) gives a good explanation and translation of this passage and notes that during the Song dynasty, there was a dramatic increase in the number of times that the term “tofu” appeared in Chinese literature (p. 300-01). He adds (p. 126-27) that this food canon of late medieval China is “a compilation of anecdotes of little known facts and unusual events associated with a wide range of topics current in the Sui, Tang and Five Dynasties era. The entire book consists of 648 anecdotes, of which 238 deal with matters relating to food and drink.” In addition (p. 354) this book states: Jiang (soybean paste) “is the host of the eight delicacies (*bazhen*), while vinegar (*chu*) is their manager.” Thus it places “the value of *jiang* as a condiment higher than that of vinegar.”

A second passage in this book, titled *Hutuofan* states that Guang Wu (a person or ruler) is at a place named Hutuo. Someone named Gong Sun recommended soybean congee (*douzhou*) to him. Until now, all through the northwestern prefectures and counties, people call soybean congee as *Hutuofan*. Note 4. *Fan* means “cooked grains.” (Translated by H.T. Huang, PhD, July 2002).

50. Huang Chien. 1027. *ZZZ T'an yuan* [A collection of conversations]. China. Modern rendering by Morohashi 1955, trans. p. 25. [Chi]*

• **Summary:** Northern Song dynasty. Someone asked if the people and officials of Hsui-shui and Ch'ing-te were clear (i.e. honest). He replied: “They are the color of Chiang water (Chiang shui)—not clear and not thick (i.e. corrupt).” Address: China.

51. Konjaku monogatari-shû [Tales of today and yesterday. A compilation of popular and funny Buddhist and historical stories from India, China, and Tibet]. 1050-1185. Japan. Japanese summary by Kawakami 1978, p. 215-16. [Jap]

52. Su Song; et al. 1061. *Bencao tujing* [Illustrated pharmacopoeia: Or, Illustrated treatise of pharmaceutical natural history]. China. Passage on soy reprinted in C.N. Li 1958 #299, p. 220-21, and #331, p. 234. [Chi]

• **Summary:** Wade-Giles reference: *Pên Ts'ao T'u Jing*, by *Su Sung, et al.* Song dynasty. Li (1958, p. 220-21) cites this as *Tujing Bencao* (+1061) however Needham (1986) has convinced us to cite it as shown above. This is a noteworthy

work, however the original has been lost. The following passage has come down to us in the *Zhenglei Bencao* (Reorganized pharmacopoeia) (+1082), Chapter 25. Dried soybean sprouts (*dadou huangjuan*; “yellow curls”) and mature raw soybeans (*sheng dadou*). They grow in the plains near Taishan (the famous mountain near the birthplace of Confucius). You find them everywhere. Dried soybean sprouts are derived from the fresh soy sprouts. After it has sprouted, you dry it and use it. Alchemical treatises call it “yellow curls” (*huangjuan*). There are two kinds of soybeans: Black and white. The black ones are used in medicine, the white ones are not. The very small ones are the male beans (*dou*); they are particularly good for medical use.

The young plants (*doumiao*) grow to a height of 1-2 feet. The leaves are round with a pointed tip. The color is green. They are slightly hairy. The stem divides into branches. In the fall, they bear small, white or purple flowers in clusters. They form pods (*jia*) more than one inch (*cun*) long, which may contain 3-4 seeds / beans. Small pods may contain only 1-2 seeds / beans. The seeds fill the pods. When the leaves and the stems are full, then the beans are ready for harvest. There are early, medium, and late varieties. The shapes are large, small, round, or flat. The colors are yellow, white, red, black, spotted / speckled / striped (*ban*), and dark brown. Soybeans are used to make *jiang*, soy nuggets (*shi*), tofu (*fu*), or soy sprouts (*ya*). They can be pressed to give soy oil (*you*), or they can be parched / fried (*chao*, with or without oil, probably without in this case) to give soy nuts (*guo*, literally “fruit”). They can also be used to make soy flour candy (*tangmo*). So the soybean has many uses. The pods are called *jia*, the leaves are called *huo*, the stems are called *qi*, and the seeds are called *dou*.

Note 1. This is the earliest document seen (Sept. 2004) that mentions brown or dark brown soybeans.

Note 2. This is the earliest document seen (March 2005) that mentions soybean oil for what appears (from the context) to be food or therapeutic use. It is also the earliest Chinese-language document seen that mentions soy oil, which it calls *you* (a general term for all oil).

Red azuki beans (*chixiaodou*) are also mentioned in this book. (See Li 1958 #387).

And there is an entire section titled “Cowpeas” (*jiangdou*, *Vigna sinensis*) which says that it was widely cultivated in the northwestern provinces of China. (See Li 1958 #476).

And a section titled “Hyacinth beans” (*biandou*) with a long description. (See Li 1958 #537).

There is also a section titled “Broad beans” (*candou*, *Vicia faba*) with six lines of description, including the statements that it can be boiled, stir-fried, or made into flour (*fen*). When these beans are fed to cows or horses, the animals grow well. The seedlings fertilize the fields. The stems can be used for fuel, and the leaves used for feed. The

pods are shaped like silkworms—which is why they are called “silkworm beans” (*candou*). (See Li 1958 #641). Note 3. This is the earliest document seen (Jan. 2005) that mentions broad beans (*candou*; *Vicia faba*) together with soybeans. (Translated by H.T. Huang, PhD, Jan. and May 2003). Note 4. The above text now exists only in the *Sannongji* (Records of the three departments of agriculture) (1760), by Zhang Zongfa.

Needham (1986, p. 581, 281n) cites this as shown above noting: “Now preserved only in numerous quotations in the later pandects of pharmaceutical natural history.” On p. 588 Needham has a second explanatory reference for: “*T’u Ching* (*Pên Ts’ao*). Illustrated Treatise (of Pharmaceutical Natural History). See *Pên Ts’ao T’u Ching*. He explains that the term *T’u Ching* originally applied to one of the two illustrated parts (the other one was a *Yao T’u*) of the *Hsiu Pên Ts’ao* of +659. But by the middle of the +11th century these had become lost, so the *Pên Ts’ao T’u Ching*, by Su Sung was prepared as a replacement. The title “*T’u Ching Pên Ts’ao* was often later applied to Su Sung’s work, but wrongly—according to evidence in the *Sung Shih* bibliographies. Needham (1986) states that this was the first document to mention flax in China (p. 174). Su Sung, also called Su Tzu-Jung, was a statesman and outstanding scientific thinker (p. 252, 281).

Note 5. This is the earliest document seen (Sept. 2004) that mentions soybeans whose color is spotted / speckled / mottled / striped (*ban*).

Note 6. This is the earliest document seen (June 2003) that mentions flax.

53. Tôji ruiki [Toji ruiki]. 1080. Japan. [Jap]*

• **Summary:** Mentions many types of chiang (Ichiyama 1968).

54. Tang Shenwei. comp. 1082. Zhenglei bencao [Reorganized pharmacopoeia]. China. Passage on soy reprinted in C.N. Li 1958 #299, p. 220-221. [Chi]

• **Summary:** Wade-Giles reference: *Chêng Lei Pên Ts’ao*, compiled by T’ang Shên-Wei. Song dynasty. Needham (1986, p. 561) says that the full title of this work (in W.-G.) is *Ching-Shih Chêng Lei Pei-Chi Pên Ts’ao*. This important work discusses the medicinal properties of foods. Chapter 25 states that the soybean (*dadou*) can be used to make sprouts. When these sprouts are dried, they are called “yellow curls” (*huangjuan*). You can also use the [undried] sprouts as food.

Chapter 25 also contains a long passage from the *Bencao Tujing* (Illustrated pharmacopoeia) (+1061) on dried soybean sprouts (“yellow curls”), fresh soybean sprouts, and mature dry soybeans (which see).

Chapter 25 states that soy nugget sauce (*shizhi*; W.-G. *shih chih*) from Shan or Shanzhou (same as today’s Shaanxi province) can be kept for years without deterioration. Note

1. This passage suggests that this type of *shizhi* was a fermented product which would keep as long as today’s soy sauce. If this is true, then *shizhi* would be a precursor of the soy sauce (*jiangyou*) that originated in China in the late Song dynasty (Huang 2000, p. 361).

The next passage appears in a much later book titled *Sannongji*, by Zhang Zongfa (W.-G. *San Nung Chi*, by Chang Tsung-Fa) (Records of the three departments of agriculture) (+1760). Young soybean plants (*doumiao*) grow to a height of 1-2 feet (*chi*). (Note 2. This is the earliest document seen {Jan. 2003} stating that *doumiao* grow to a height of several feet. Previously the term *doumiao* was used to refer to long soy sprouts which were typically much smaller and more tender). The leaves are round with a pointed tip; their color is green (*qing*) and they have hairs (*mao*) on the surface. One stem divides into branches. In the fall, white flowers appear; they are white or purple, and grouped together. The pods (*jia*) are more than an inch (*cun*) long, and they typically contain 3-4 seeds, or at least 1-2 seeds. The seeds fill the pods. The pods grow separately from the leaves. The varieties are early, middle, and late. The pods are either large or small, round or flat. The colors of the seeds are yellow, white, red (*chi*), black, spotted / speckled (*ban*), or dark brown. You can [use the seeds to] make jiang or soy nuggets (*shi*), tofu (*fu*) or sprouts (*ya*). You can press them to give yield oil (*you*). You can roast / fry (*chao*) them to give nuts (*guo*; soynuts). You can make candy from grain sweetener (*tangmo*). It has many uses. The pods are called *jia*. The leaves are called *huo*. The stems are called *qi*. The seeds are called *dou*. (Translated by H.T. Huang, PhD, Jan. 2003).

Note 3. This is the earliest document seen (Feb. 2003) that mentions red (*chi*) soybeans.

Also mentions malt sugar (*yitang*) and gluten (Chap. 25). (See Huang 2000, p. 296, 460 {malt sugar}, 498 {gluten}, 611). This work was enlarged in +1116 and retitled *Chêng-Ho Hsin-Hsiu Ching-Shih Chêng-Lei Pei Yung* (New revision of the classified and consolidated armamentarium pharmacopoeia of the Chêng-Ho reign period). It was then re-edited +1204 in Jurchen Chin, and definitively republished +1249 in Yuan; later reprinted many times. See also Hummel (1941).

55. Tang Shenwei. comp. 1082. Jingshi zhenglei beiji bencao [The classified and consolidated armamentarium of pharmaceutical natural history]. China. Passage on soy reprinted in C.N. Li 1958 #299, p. 220-221. [Chi]

• **Summary:** Wade-Giles reference: *Ching-Shih Chêng Lei Pei-Chi Pên Ts’ao*, compiled by T’ang Shên-Wei. Song dynasty. See *Zhenglei Bencao* (1082).

56. Kou Tsung-shih. 1115? ZZZ T’u-ching yen-i pen-ts’ao [Sung dynasty pharmacopoeia]. China. Undated. [Chi]*

• **Summary:** Northern Song dynasty. Address: China.

57. Lin Hong. 1200? *Shanjia qinggong* [Basic needs for rustic living]. China. Passage on soy reprinted in C.N. Li 1958 #303, p. 221-22. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Shan Chia Ch'ing Kung*, by Lin Hung. Southern Song dynasty. An important work. The section titled “Swanlike yellow bean sprouts” states (see Huang 2000, p. 296): Several days before the 15th day of the 7th moon, people soak black soybeans (*heidou*) in water then allow them to sprout as follows: Spread grain chaff on a tray, top the layer with sand, plant the beans in the medium, then press surface with a wooden board. When beans are sprouted [remove board and] cover tray with an [inverted] pail. Remove pail each morning so that sprouts are exposed briefly to the sun. This will enable sprouts to grow evenly and be protected from sun and wind. On the 15th day, display tray in front of the ancestral tablet. After three days, remove tray and wash sprouts clean. Grill sprouts with oil, salt, vinegar and spices to give a savory dish. They are especially good when rolled in a sesame pancake. Because the sprouts are light yellow, and are shaped like the neck of a swan [goose], they are called “swanlike yellow bean sprouts” (*Ehuang dousheng*). Huang (2000, p. 296) notes that this is the “earliest documentation we have on the preparation and use of soybean sprouts as a food” is in this book. A footnote (Huang, p. 296) states: “The 15th day of the 7th month is the Summer Festival *Zhongyuan* when offerings are made to the ancestral spirits. A long soybean sprout with a yellow tip may resemble the neck of a swan with a yellow beak, hence the name Swanlike bean sprout. Except for the step of exposing the germinating beans to sunlight, this recipe is basically similar to those given in later works, in which the beans are always kept in the dark to prevent the generation of chlorophyll and the emergence of a bitter taste.”

Note 1. This is the earliest document seen (Feb. 2007) that uses the term *heidou* to refer to black soybeans.

Huang (2000, p. 301) states that this work describes two dishes containing tofu: One, named Snow and Red Cloud Soup, is prepared by cooking tofu with hibiscus flowers; the other, Tofu à la *Su Dongpo* [named after the great Song dynasty poet (W.-G. Su Tung-P'o), who lived 1036-1101] is made from yew nuts, scallions, oil and soy sauce.

Huang (2000, p. 354) says that this work contains at least nine recipes in which *jiang* is used, including the celebrated Tofu à la *Su Dongpo* mentioned above.

Huang (2000, p. 358) notes that the earliest references to the term *jiangyou* [soy sauce] occur in two works of the late Song dynasty. This work gives four recipes in which *jiangyou* is used to flavor various vegetables and seafood. A footnote summarizes the recipes, with page numbers from the 1985 modern Chinese version: Soy sauce, ginger threads, and a little vinegar are used as a dressing for lightly cooked young chives (p. 34). A stir fry of spring bamboo

shoots, bracken leaves and fish or shrimp is seasoned with soy sauce, sesame oil, salt and pepper (p. 47). Soy sauce is used with sesame oil, pepper and salt to flavour young bamboo shoots, mushrooms and Chinese wolfberry seeds (p. 66). Soy sauce and vinegar are used to season blanched shoots of the daylily [day lily; genus *Hemerocallis*].

Huang continues (p. 358): Neither work tells us how the *jiangyou* was prepared. This does not necessarily mean that soy sauce first originated during the Song. Rather, it means rather that by the time of the Song, *jiangyou* had become the accepted name for the liquid seasoning derived from *shi* or *jiang*. Most scholars agree that soy sauce is almost as old as soy *jiang*, but opinions differ as to what it was called before it became known as *jiangyou* during the Song. A footnote (p. 358) cites three Chinese-language works from the 1980s that discuss this issue.

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” *Jiang* itself is used in 9 recipes, soy sauce called *jiangyou* in 3 recipes, and soy sauce called *jiangzhi* (W.-G. *chiang chih*) in 1 recipe. Note 2. This is the earliest Chinese-language document seen (Aug. 2005) that uses the word *jiangyou* (one of two documents) or the word *jiangzhi* to refer to soy sauce.

It is surprising that the sauce made from *jiang* should have been called *jiangyou* at all. Throughout the history of the Chinese language *you* has always meant the oily (or greasy), water insoluble substance derived from animal, vegetable, or mineral sources, for example, *zhuyou* (lard), *niuyou* (butter), *chaiyou* (rapeseed oil), *xiangyou* (sesame oil), *tongyou* (tung oil), *shiyou* (petroleum) etc. *Jiangyou* (or *shiyou*) is the one, notable exception. It is an aqueous solution (or suspension) of a variety of substances and by no stretch of the imagination can it be construed as a *yu* (oil). Nevertheless, the term *jiangyou* (soy sauce) gained acceptance in the Song dynasty and is now firmly ensconced in the language, perhaps as an indication of its very special role in the daily life of the Chinese. Thus, we have a surprising situation in which an English translation, ‘soy sauce’ (sauce prepared from the soybean) is a more rational name for the product than its Chinese original, *jiangyou* (oil derived from *jiang*) (p. 358).

Note 3. This is the earliest document seen (Aug. 2007) that mentions sesame oil, which it calls *xiangyou*.

Question: If soy sauce were made from whole soybeans (which contain about 16-20% oil), why wouldn't that oil rise to the top of the soy sauce, whence it would have to be skimmed off before the soy sauce could be used? Dr. Huang answers (Oct. 2002): There should have been a lot of oil on top of the soy sauce. However in the early Chinese literature, some of which goes into great detail about the process, there is no mention of any oil atop the soy sauce. In the old process, which used mixed cultures of microorganisms, I suspect much of the oil is simply

hydrolyzed by lipase enzymes. The oil may have started to appear in modern times when they began to use pure cultures.

Fukushima (1989, p. 4): “The first appearance of the name of *chiang-yu* was in *Shan-chia Ch'ing-kung* (*Sanya-Seikyo* in Japanese) by Lin Hung (*Rin Ko* in Japanese) in the Sung dynasty (960-1127 AD).”

Bo (1982): It was recently discovered that the term “*chiang-yu*,” written with the same characters as the Japanese term “*shoyu*,” and both meaning soy sauce, was used for the first time in China (or the world) in this work, written during the Sung dynasty. *Shoyu* was used either in recipes that didn't contain meat, or in side dishes. It was an important seasoning to be sprinkled on foods.

58. Lin Hong. 1200? *Wushi zhongkuilu* [Madam Wu's recipe book]. China. Passage on soy reprinted in H.T. Huang 2000, p. 358. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Wu Shih Chung Khuei Lu*. Also known as *Chung Khuei Lu*. Author unknown; reputed to be Madam Wu. Southern Song dynasty. Huang (2000, p. 358) notes that the earliest references to the term *jiangyou* [soy sauce] occur in two works of the late Song dynasty. This work describes the use of *jiangyou* in cooking meat, crab, and vegetables. A footnote summarizes the recipes, with page numbers from the 1987 modern Chinese version: Soy sauce is used to marinate sliced raw meat before stir-frying (p. 8). Crab is cooked in wine, soy sauce, vinegar, wine fermentation lees and sesame oil (p. 10). Soy sauce, sesame oil, vinegar and pepper are mixed as a dressing for various vegetables (p. 21).

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Only seasonings based on *jiang* (fermented soybean paste) are used in this book; none are based on soy nuggets (*shi*). *Jiang* itself is used in 5 recipes, and soy sauce made from *jiang* (*jiangqing*) in 3 recipes.

Note: This is the earliest Chinese-language document seen (March 2004) that uses the word *jiangyou* to refer to soy sauce (one of two documents).

59. Buddhist monk Kakushin returns to Japan Sung dynasty from China having learned how to make Kinzanji miso (Early event). 1228.

• **Summary:** In *The Book of Miso*, by Shurtleff and Aoyagi (1976, p. 219-20) we read: “The origins of modern *shoyu* can be traced more clearly to the mid 1200s when the Japanese priest Kakushin [1207-1298] returned from China, having learned there the technique for preparing Kinzanji miso. Establishing himself at Kokoku-ji temple near the town of Yuasa (in today's Wakayama prefecture, just south of Osaka), he began to teach the local people both Buddhist meditation and the method for preparing his miso specialty. According to non-documented oral tradition, he soon

discovered that the liquid which settled to the bottom of the miso kegs made an excellent seasoning, so he decided to alter the process slightly by increasing the proportion of water in the basic mixture. After the regular fermentation period, the excess liquid was ladled off and briefly heated to stop fermentation... Kakushin's creation, too, came to be known as *tamari*, deriving its name from the verb *tamaru*, meaning ‘to accumulate,’ as ‘water accumulates into ponds,’ and by 1260 it was being produced for home consumption in the nearby towns of Yusa and Hiromachi... By 1290, the first Yuasa *tamari* was said to have been sold commercially, and soon even poets began to sing the praises of this new delicacy, calling it *murasaki* or ‘deep purple,’ ...”

In “Chronology of Soybeans,” by Akio Saito (1985. *Daizu Geppo* (*Soybean Monthly News*). Jan. p. 12-14—in Japanese) we read: 1228—The Buddhist monk Kakushin returned from Sung dynasty China having learned the method for making fermented Kinzanji miso. While fermenting the miso, he discovers that the liquid which gathers on the bottom of the vats can be used as a tasty seasoning. This *tamari* is considered the first soy sauce in Japan. Kinzanji miso is a type of *namémiso* (Finger Lickin' Miso) made from roasted soybeans and barley koji. To these are added eggplant, white melon (*shiro uri*), etc., and the mixture is fermented.

60. Yuwen Maozhao. 1250? *Jin guozhi* [History of the Jin dynasty {1115-1234}]. China. Passage on soy reprinted in C.N. Li 1958 #120, p. 85. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Chin Kuo Chih*, by Yü Wên Mao Chao. Since his name contains four characters, he may have been a Mongol who lived during the Yuan (Mongol) dynasty. Date estimated as about 13th century. Covers the years 1115-1234; this minor dynasty, which caused the partition of the Song dynasty, existed in northern China at about the same time as the Southern Song in southern China. The section on food and drink states that the Jin people make *jiang* from soybeans. (Translated by H.T. Huang, PhD, Sept. 2002). Dr. Huang adds: This is one of the dynastic histories.

61. Zhao Xigu. 1250? *Tiaoxie leibian* [Compilation of harmonious variations]. China. Passage on soy reprinted in C.N. Li 1958 #117, p. 85. Undated. [Chi]

• **Summary:** Wade-Giles reference: *T'iao Hsieh Lei Pien*, by Chao Hsi-ku. Date is estimated as 13th century—probably Southern Song dynasty. The section titled “Grain foods” states: The soybean (*dadou*) is black, white, green (*qing*), yellow, dark brown, and spotted / speckled (*ban*) in color. Its nature is neutral [not warming or cooling]. If you fry it, its nature becomes hot. If you boil it, its nature becomes cool. If you use make a soup of it, its nature becomes very cold. If you ferment it to make *jiang* [a thick, chunky sauce], its nature becomes neutral. When cattle eat it, it is

warming. But when horses eat it, it is cooling. So even though it is one food, it has different effects. It contradicts the five kinds of *seng* (ginseng is one type of *seng*) and the dragon's spleen (*lungdan*). (Translated by H.T. Huang, PhD, Aug. 2002). Dr. Huang adds: The meaning of the last sentence is not clear.

Note: This is the earliest document seen (Feb. 2003) that mentions green (*qing*) mature soybeans.

62. Wu Zimu. 1275. *Mengliang lu* [Dreams of the former capital]. China. Passage on soy reprinted in C.N. Li 1958 #121, p. 86. [Chi]

• **Summary:** Wade-Giles reference: *Mêng Liang Lu*, by Wu Tzu-Mu. This important work is a description of Huangzhou, the capital, towards the end of the Southern Song dynasty. The “Different bureaus” section states that they have fields of rice, wheat, and soybeans (*dou*) used [perhaps as forage] mainly to feed horses belonging to the various government agencies.

The “Street vendors on mats” section describes foods they are selling in Hangzhou—capital of the Southern Song dynasty, including bean-flavored water (*douershui*) and sweet soybean soup (*gandoutang*), honeyed jujubes, fruits, and cooked meats.

The “Market that sells things at dawn” section states that in the summer they sell various things including young soybean congee (*douzizhou*). Note: Young soybeans might refer to green vegetable soybeans.

The “Miscellaneous products” section states that children are selling different kinds of foods, including two unknown varieties of soybeans (*qidou* and *fadou*, “law + bean”), brownish-green soybeans (*geqingdou*), salted young soybeans (*yandouer*, maybe green vegetable soybeans), and sugared yellow young soybeans (*douer huangtang*), and cooked soybeans ground to make a cake (*doutuan*).

The section on “Noodle shops” says that these shops sell different kinds of soups and dishes, including pan-fried tofu (*doufu*), fried fish, cooked vegetables, fried eggplant. These are shops where the common people get an inexpensive meal.

The section on “Produce” mentions grains but concentrates on beans, starting with soybeans of different colors: black (*doudahei*), purple (*dazi*), white (*dabai*), yellow (*dahuang*), and green (*daqing*). Also mentions various non-soy beans including white (flat) beans, black (flat) beans, white azuki beans (*baixiao*), red azuki beans (*chixiao*), mung beans (*liudou*), and many others. (Translated by H.T. Huang, PhD, Sept. 2002). Dr. Huang adds: The word “former” in the title indicates that author apparently moved away from Southern Song territory, perhaps northward into that controlled by the Yuan (Mongol) dynasty, which began in 1260. Note 1. This is the earliest document seen (Sept. 2004) that uses the term *doudahei*

(“bean large black”) to refer to black soybeans, or the term *dabai* (“large white”) to refer to white soybeans.

Huang (2000): In Lin An (present-day Hangzhou, capital of the Southern Song dynasty), “tofu soup and grilled tofu were sold in a wine shop, and a food stall specializing in vegetarian stews also sold grilled tofu” (p. 301). Soy nuggets (*shi*) are mentioned (p. 341). A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Jiang (fermented soybean paste) is used in two recipes and soy nugget sauce (*shizhi*) is used in one recipe.

This book also “states that ‘things that people cannot do without every day are firewood, rice, oil, salt, soybean paste (*jiang*), vinegar, and tea.’ It is clear that by the time of the Song, edible oil had advanced to the position as one of the proverbial ‘seven necessities’ of life” (Huang p. 436). Vegetable “oil pressing establishments were seen in the southern capital of Hangzhou” (p. 441). Northerners loved to use hemp oil for frying food. Wheat gluten (*fu*) was widely served during the Southern Song; names of four dishes served in a pasta restaurant are given (p. 500).

Wilkinson (2000, p. 854) cites this as *Record of the splendors of the capital city*, by Wu Zimu (no date given). These are reminiscences of the Southern Song capital of Lin’an (Huangzhou) modeled after *Menghualu*.

Talk with H.T. Huang. 1995. Dec. 28. The *chiang* mentioned by this work would definitely have been soybean *chiang*; that is what the word meant, starting a century or two before the beginning of the Christian era.

Letter from H.T. Huang. 1994 April 12, followed by talk of 1995 Dec. 28. The “seven necessities” of life are first mentioned in this book, in chapter 16, p. 136 in the 1982 edition. They are: firewood, rice, oil, salt, *chiang*, vinegar, and tea.” Yet according to another respected source, the original version of the book mentioned eight necessities, the eighth being wine, which was widely used both for drinking and as a condiment in cooking. Today, however, all the modern editions of this book include only seven necessities, omitting wine. Later the list was standardized seven (see Chai Hao 1771), and the term “seven necessities of life” became popular in China during the Yuan dynasty (1279-1368). In the Yuan dynasty there were several famous dramas; this period saw the start of Chinese dramatic literature. The words were put together in rhymes of seven characters, and at least one of these mentioned the “seven necessities.” They couldn’t accommodate eight necessities in the rhyme, so since the Yuan it has always been standardized at seven.

Letter from H.T. Huang, PhD, expert on the history of Chinese food and agriculture. 1993. June 5. This book (1982 edition, p. 136) lists *fu* (gluten) with lamb casserole, dragon (shrimp) *fu*, parched *fu* in five flavors, and grilled *fu*. At this time, *fu* (gluten), used as a synonym for *mien chin*, seems to be widespread in the Southern Song, China.

Note: This work was re-issued in 1982 by Commerce Publishers, Beijing. It is part of a series titled “Culinary Classics of Ancient China.”

63. Chen Yuanjing. 1280? *Shilin guangji* [Record of miscellanies]. China. Passage on soy reprinted in H.T. Huang 2000, p. 353. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Shih Lin Kuang Chi*, by Ch'ên Yuan-Ching. Yuan (Mongol) dynasty. Huang (2000) states that this book contains a method for making soybean jiang, quite similar to that found in earlier works (p. 353). It also contains a recipes for making jiang from wheat flour (*mien*) (p. 355). A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Jiang (fermented soybean paste) is used in one recipe and soy nuggets (*shi*) are used in one recipe.

64. Tamari-style shoyu is sold commercially from Yuasa in the Kishu area of Japan (in today's Wakayama prefecture) (Early event). 1290.

• **Summary:** *The Book of Miso*, by Shurtleff and Aoyagi (1976, p. 219-20) states that when the Japanese priest Kakushin returned from China [in 1228], he established himself at Kokoku-ji temple, near the town of Yuasa. By 1260 tamari “was being produced for home consumption in the nearby towns of Yuasa and Hiromachi... By 1290, the first Yuasa tamari was said to have been sold commercially, and soon even poets began to sing the praises of this new delicacy, calling it *murasaki* or ‘deep purple,’ a synonym for the finest shoyu, used to this day.” A nine-line poem about tamari follows.

In “Chronology of Soybeans,” by Akio Saito (1985. *Daizu Geppo* (*Soybean Monthly News*). Jan. p. 12-14—in Japanese) we read: 1228—The Buddhist monk Kakushin returns to Japan from Sung dynasty China having learned the method for making fermented Kinzanji miso. While fermenting the miso in Japan, he discovers that the liquid which gathers on the bottom of the vats can be used as a tasty seasoning. This tamari is considered the first soy sauce in Japan...

1288-1292—Tamari-style shoyu is sold from Yuasa in the Kishu area (in today's Wakayama prefecture).

65. Saito, Akio. 1292. [Chronology of soybeans, 122 B.C. to A.D. 1292] (Document part). In: Akio Saito. 1985. *Daizu Geppo* (*Soybean Monthly News*). Jan. p. 12-14. [Jap; eng+]

• **Summary:** 122 B.C.—It is said that Lord Liu An of Huainan (*Wainan O Ryuan*) invented tofu. Therefore is sometimes called “Wainan.”

300 A.D.—By this time in Japan people are using fermented foods such as kuki, sake, vinegar, sushi, and hishio made from herbs (*kusa-bishio*) and grains (*koku-*

bishio). Kuki is a bean-based product related to miso, natto, or tamari.

630 A.D.—Igunami no Otasuki is sent as a student from Japan to T'ang dynasty China (*Kentoshi*). It is thought that foods like tofu were brought back to Japan by such student monks when they returned [but there are no records of this].

701 A.D.—The Taiho Law Codes (*Taiho Ritsuryo*) are established, and they call for the establishment of the Hishio Tsukasa (Bureau for the Regulation of Production, Trade, and Taxation of Hishio and Misho), located in the Imperial Palace as an annex to the emperor's kitchen (*daizenshoku*). Soybeans were definitely used to make these fermented foods and seasonings such as hishio (like Chinese chiang), soy nuggets (*shi, kuki*), and misho (a forerunner of miso; the term “miso” had not yet been coined).

741 A.D.—Two new temples are added to each feudal domain (*kuni*): Kokubunji is for monks and Kokubuniji is for nuns. It is said that from this time, soy nuggets (*tera nattô*, or *shiokara nattô*) spread throughout Japan. They are made from soybean koji, which is soaked in salted water and dried.

794—The capital of Japan is relocated to Kyoto from Nara. The Heian period (794-857) begins.

794-1190—Salted pickles (*shio-zuke*), hishio pickles (*hishio-zuke*), miso pickles (*miso-zuke*), and sake lees pickles (*kasu-zuke*) are eaten. The pickles were made by various methods. But only during and after the Muromachi period (1338-1573) were the various pickles made often.

802—Sakanoue no Tamuramaro (758-811) recommends that farmers in Tanzawa grow soybeans as an emergency food.

840—Each feudal domain (*kuni*) is encouraged to plant millet, barnyard millet, barley, wheat, soybeans, azuki beans, and sesame seeds.

901—The Chinese character *so* in the present word *miso* appears for the first time in the *Sandai Jitsuroku*.

927—The *Engishiki* is completed by Fujiwara no Tokihira (871-811) and others. In this book it is written: “In the feudal domain of Omi 60 koku of soybeans [1 koku = 47.6 gallons or 180 liters], in the domain of Tanba 30 koku, in the domain of Harima 20 koku, in the domain of Misa 10 koku, and in the domain of Iyo 10 koku are recommended (*susumu*). It seems that the soybean was an important crop in those days. Soybeans, rice, wheat, sake, and salt are given as the raw materials for making misho (a product resembling miso). The places famous for making misho are Omi, Hida, Yamato, etc. There are 27 misho shops in the Nishi no Kyo area of Kyoto. It is stated in the *Engishiki* that in order to make 1.5 koku of hishio you need 3 koku of soybeans, 1.5 koku of salt, 0.15 koku each of rice, wheat, and sake, and 0.043 koku of nonglutinous rice (*uruchi-mai*). Hishio at that time would seem to resemble today's kidamari; it would seem to have been very salty.

1068?—Salty natto (*shiokara nattô*; probably soy nuggets) appears for the first time in the book *Shin Sarugakki*, by Fujiwara no Akihira (lived 989-1066). In this book the lifestyle, manners, and customs of the time are described.

1083—Stringy natto (*itohiki nattô*) is discovered accidentally in Oshu (northeast Japan) during the conquest of Oshu by Minamoto (Hachimantaro) Yoshiie (lived 1041-1108). It is said that the natto was made when cooked soybeans were placed in a sack strapped over the back of a horse. The warmth of the horse caused the fermentation. There are so many legends like this on in the northeast prefectures (*Tohoku Chiho*) of Japan that it seems possible that natto was originally made there.

1183—Tofu is first mentioned in a document from the Great Kasuga Shrine (*Kasuga Taisha*) in Nara. The characters used to write the word tofu then were different from the characters used today. It seems that this tofu was very hard.

1192—The Kamakura period and shogunate begins as Minamoto no Yoritomo (1147-1199) becomes the first head shogun.

1228—The Buddhist monk Kakushin returns to Japan from Sung dynasty China having learned the method for making fermented Kinzanji miso. While fermenting the miso in Japan, he discovers that the liquid which gathers on the bottom of the vats can be used as a tasty seasoning. This tamari is considered the first soy sauce in Japan. Kinzanji miso is a type of *namémiso* (Finger Lickin' Miso) made from roasted soybeans and barley koji. To these are added eggplant, white melon (*shiro uri*), etc., and the mixture is fermented.

1288-1292—Tamari-style shoyu is sold from Yuasa in the Kishu area (in today's Wakayama prefecture).

Note 1. This document contains the earliest clear date seen for the cultivation of soybeans in Japan (A.D. 802, and 840), and for the appearance of the term “tamari” in Japan (1228).

Note 2. This is the earliest document seen (Sept. 2000) that mentions sesame seeds (802 A.D.). Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

66. Jujia biyong shilei quanji [Essential arts for family living (encyclopedia)]. 1301. China. Passage on soy reprinted in H.T. Huang 2000, p. 352. Undated. [Chi] • **Summary:** Wade-Giles reference: *Chü Chia Pi Yung Shih Lei Ch'üan Chi*, author probably unknown or maybe by Hsiung Tsung-Li (pinyin Xiong Zongli). Late Yuan (Mongol) dynasty.

Huang (2000, p. 352) states that this book “presents two methods for making jiang from soybeans, one for *shu huang jiang* (ripe yellow soy paste) and the other for *sheng huang jiang* (raw yellow soy paste). The names are actually misleading since the ‘ripe’ and the ‘raw’ refer to the manner

in which the beans are treated before mixing with wheat flour for the first fermentation and do not refer to the quality of the final product. In the *shu* or ‘ripe’ case, the beans are roasted and ground into flour; in the *sheng* or ‘raw’ case the beans are soaked overnight and boiled until soft and tender. The product from the first fermentation is called *huangzi* [‘yellow child,’ soybean koji] and well as *jianghuang* [‘jiang yellow’].”

Huang (2000, p. 355-56) gives an interesting full-page table which compares the processes for making the following types of jiang: Soybean (*dou*), wheat (*mien*), sweet flour (*tianmien*), azuki bean (*xiaodou*), jack bean, barley (*damai*), and elmnut (*yuren*). Each of the processes except one is based on the *Jujia Biyong* (ca. 1350); the process for making sweet flour jiang is based on the *Bencao Gangmu* (The great pharmacopoeia) (+1596).

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Only seasonings based on jiang (fermented soybean paste) are used in this book; none are based on soy nuggets (*shi*). Jiang itself is used in 17 recipes, and soy sauce made from jiang (*jiangqing*) in 1 recipe.

Huang (2000, p. 297) notes that this is the earliest document seen to use the term *douya*, which, in English, is the modern term—“bean sprouts.” Mung beans (*lüdou*) are the preferred beans for making such sprouts. A long quotation describes the process in detail and gives a recipe.

Huang (2000, p. 255) quotes a passage describing the process for making *jufu* (also known as *jubing*), from dairy milk curds. Its says to coagulate cow’s milk by adding vinegar, just as when making tofu (*doufu*). When the dairy curds are fully formed, drain in a silk bag and press with a stone. Add salt and store in a jar.

Letter from Dr. H.T. Huang. 1996. Sept. 29. “I am glad you brought up the question of when vegetarian mock meat dishes were first prepared in China; it is one that requires further research. The earliest examples of mock meat dishes I have found so far were made with *mien-chin* (wheat gluten).” Gluten is used “in a recipe for mock lung sausage and one for mock eel.” The book contains 4 vegetarian recipes using *mien chien* (wheat gluten), found on pages 132-34. These are vegetarian versions of grilled liver, barbecued liver, mock fermented beans (*doushi* = soy nuggets), and mock fish.

Note 1. This is the earliest document seen (Dec. 2005) concerning roasted soy flour.

Note 2. This is the earliest document seen (Aug. 2002) concerning a meatless sausage.

Huang (2000, p. 194-95) notes that this book contains probably the earliest account of the process for making red fermented rice and a red wine.

Bray (1984, p. 623): Translates the title as “Collection of certain sorts of techniques necessary for households (encyclopedia).” Published in Yuan, +1301. Probably by

Hsiung Tsung-Li. Ed. Ming, +1560, T'ien Ju-Ch'eng. Partly reprinted in Shinoda & Tanaka (1973), "A Collection of Chinese Dietary Classics." Also discusses hemp oil, which was widely used in traditional China, was considered to have an offensive smell, and was rated lowest of all the cooking oils, but it was a good lamp oil as it did not smoke or hurt the eyes" (p. 51).

Bo (1982): This book mentions wheat chiang. It also gives a detailed description of the method for making soy nugget sauce: Two months after September, heat clear sesame oil, stir in 3 *tou* [unit of measure] of good soy nuggets (*shi*), mix, steam, and cool. Sun dry then steam again. After repeating this process 3 times, mix in 1 *tou* of white salt and put everything in a large cauldron with 3-4 *tou* of hot water. Add 1 *ry* each of three spices, 5 *kin* each of white onion and (?). Simmer down to two-thirds the volume and store in a container. From this it is clear that soy nugget sauce was a kind of soy sauce with flavorings and spices.

67. Lu Mingshan. ed. 1314. *Nongsang yishi cuoyao* [Selected essentials of agriculture, sericulture, clothing and food]. China. Passage on soy reprinted in C.N. Li 1958 #132, p. 93, and #308, p. 223. [Chi]

• **Summary:** Wade-Giles reference: *Nung Sang I Shih Ts'o Yao*, by Lu Ming-Shan. Title sometimes shortened to *Nongsang Cuoyao*. Yuan (Mongol) dynasty. The section titled "In the third month plant soybeans" (*dadou*) states: When apricot tree flowers bloom profusely, its a good time to plant soybeans. Plant sparsely in fertile soil and densely in poor soil. Note: This is the earliest document seen (Feb. 2003) that contains the planting advice given in the previous sentence. It will be repeated often in later documents.

The section titled "In the ninth month collect soybean stems" (*dougan*) says: In the winter, use them to feed cattle and horses.

The section titled "Planting black soybeans" states: When you plant black soybeans (*heidou*), the plowed land should be ripe (*shu*) and level. Hold the seeds in one hand; each time you take a step, broadcast the seeds. The beans (*dou*) will be good for making jiang, or for feeding horses. The stems can be used as fuel. (Translated by H.T. Huang, PhD, Oct. 2002; Jan. 2003).

Huang (2000). Red ferment (Red fermented rice; Jap: *Beni-koji*), made with a species of the red *Monascus* mold, is cited as an ingredient in the preparation of rice vinegar (p. 194). In the first stage of the process for making *shi* (soy nuggets), cooked soybeans are usually incubated (without additives) in the air, however in some cases they are mixed with wheat flour. The earliest description of the use of wheat flour is found in this book (see Huang 2000, p. 342): Clean black soybeans and cooked thoroughly. Drain the beans, mix evenly with some flour, and spread on a mat until cool. Then cover with paper mulberry leaves to make *huangzi* (yellow molded seeds [soybean koji]). When beans

are completely covered with a yellow coat [mycelium], dried them in the sun. The second stage of the fermentation takes place in the sixth month as follows: Take 2 catties of sliced melon and eggplant. For each catty of vegetables, add 1 oz of clean salt and suitable amounts of finely cut ginger, orange skin, perilla, cumin, pepper, and licorice. Mix them together and allow to stand overnight. The next day, winnow molded beans to remove free mycelium. Mix beans and vegetables in an urn and blend in any free vegetable juice. Top with a layer of bamboo leaves. Press with a brick or stone. Seal mouth of vessel with paper and mud, and allow to stand in the sun for a month. Then remove beans, melon and eggplant from vessel, and expose to the sun until dry. Collect and store.

Note: This is the earliest document seen (June 2004) that mentions fermented red rice.

Huang also reports (p. 352) that the *Nongsang Yishi Cuoyao* contains a detailed recipe for making jiang; the following is based on his complete translation: Starting with one *tan* (100 catties) of soybeans, stir-fry (*chao*) until cooked. Mill to remove hulls, boil until soft, and drain off water. While beans are still hot, mix them evenly with 60 catties of white wheat flour. Completely line a low table with bamboo leaves. Spread bean-flour mixture on leaves to a height equivalent to the thickness of two fingers. When cool, cover with mulberry leaves or cocklebur. Wait until a yellow coat [mycelium] forms around the particles. Remove leaves and cool for a day. The next day sun the material [*jiang* substrate] until dry. Break up any chunks and winnow until clean.

Blend [*jiang* substrate] with about 40 catties of salt and 2 *tan* of rain water. If mash is too thin, stir-fry some white wheat flour, cool, and add an appropriate amount (to attain desired consistency). On the night of a 'fire' day, load ingredients (in an urn) for incubation with the aid of light from a lamp. This will discourage the development of grubs. Add cumin, anise, licorice, scallion and pepper. The product will be fragrant and rich in flavour.

Huang then comments (p. 352) on the above: We may note several of innovations introduced in this process. First, the beans are stir-fried and milled to remove the hulls. This should facilitate microbial growth during the first fermentation. Second, spices are added to the second fermentation to enhance the flavor of the finished *jiang*. But the author gives no detailed instructions on how the second fermentation should be carried out. We can only surmise that the conditions are similar to those described in the *Qimin Yaoshu* and the *Sishi Zuanyao* cited earlier. Based on these assumptions, we can construct a flow diagram of the process as shown (See p. 353, Fig. 79).

Wilkinson (2000, p. 630). The *Essentials of Agriculture, Sericulture, Clothing, and Food* was "compiled by a Uighur official, Liu Mingshan. Important because written as an

actual handbook for magistrates in their role as agricultural instructors. Arranged in agricultural calendar style.”

Bray (1984, p. 628): Title. Yuan, c. +1314. Ed. Lu Ming-Shan (Uighur).

Bo (1982): Mentions a type of chiang.

Fukushima (1979, p. 4-5): “The first record indicating use of all the raw materials to prepare koji for soybean chiang appeared in the *Nung-sung I-shin Ts'o-yao* (*Noso-Ishoku-Satsuyo* in Japanese) by Lu Ming-Shan (Ro Meizen in Japanese), published in the Yuan (Gen in Japanese) dynasty (1271-1368 AD). The flow sheet of this soybean chiang is shown in Fig. 3.” In this process, soybeans are roasted, dehulled, cooked, then mixed with wheat flour and spontaneously molded to form koji. The koji is dried in the shade, winnowed, and pounded, then mixed with spices and salt water to form a mash, which is insulated and aged to make the soybean chiang.

68. Hu Sihui. 1330. *Yinshan zhengyao* [Principles of correct diet]. China. Passage on soy reprinted in Buell and Anderson 1999, p. 515-17. [Chi]

• **Summary:** Wade-Giles reference: *Yin Shan Chêng Yao*, by Hu Ssu-Hui. Yuan. Reissued in +1456 by imperial order. Huang (2000) shows that this celebrated Yuan nutritional treatise is a rich source of information about Chinese food and drink. One of China’s two best known and most important medieval and premodern works on diet therapy materia medica, it contains food prescriptions and was the official nutritional guide for the royal household. The author was the dietician at the Yuan (Mongol) court. Fortunately modern editions are available. (p. 135, 137-38). Huang (2000) notes that this work mentions soy nuggets (*shi*) (p. 341), and says that in countering the toxicity of foods, soybean jiang (*doujiang*) is superior to fermented wheat jiang (*mien jiang*) (p. 357). It also discusses: Red fermented rice (p. 196; also called red ferment, *hongqu* in pinyin, or *hung ch’ü* in Wade-Giles; it is made with the Mold *Monascus purpureus* Went, and used as a natural red coloring agent). Distilled wine (p. 227). Five types of dairy products (p. 256). Malt sugar (*tang*) (p. 460). Pasta-making, including steamed buns (*mantou*) and wheat flour noodles (*mian*, *miantiao*) (p. 476, 484). Sea vegetables (*haicai*) are mentioned as a cure for goiter (p. 576). Three recipes for curing beri-beri (*jiaoqi*, W.-G. *chiao-chhi*) are given (p. 581). Wilkinson (2000, p. 649) states that after the Han dynasty, recipe books were called *shijing* (“food treatises”), and after the Tang, *shipu* (“recipe manuals”) or *shidan* in the later empire. Most have been lost. One that survives, a treatise on diet written for the khan by the Muslim court doctor, the Mongolian Hoshi (Husihui), titled *Yingshan Zhengyao* (Essentials of eating and drinking)” has been translated into English.

English translation: Buell, Paul D.; Anderson, Eugene N., trans. 1999. *A soup for the Qan: Chinese dietary*

medicine of the Mongol era as seen in Hu Szu-hui’s Yinshan Chêng-yao. London: Kegan Paul International. 715 p.

Section 3 (p. 515-17) states: “Soybeans are sweetish in flavor and neutral and lack poison. They decrease demon *qi*, control pain, and drive out water. They expel heat of the stomach, bring down blood stasis, and counteract the poisons of various drugs. They are made into tofu. Tofu is cooling and moves the *qi*.”

Needham (1984, p. 592) says this book is mainly about deficiency diseases, with the aphorism “many diseases can be cured by diet alone.”

Lu, Gwei-Djen; Needham, Joseph. 1951. “A contribution to the history of Chinese dietetics.” *Isis—History of Science Journal* 42:13-20. April. The *Yinshan Zhengyao* discusses early Chinese treatments for beri-beri.

69. Ni Zan. 1360. *Yunlintang Yinshi Zhidu Shi* [Dietary system of the Cloud Forest Studio]. China. [Chi]

• **Summary:** Wade-Giles reference: *Yün Lin T’ang Yin-shih Chih-tu Chih*, by Ni Tsan. Yuan dynasty. Huang (2000) states that this book mentions only one dairy product, milk curds (*rufu*; W.-G. *jufu*), a name that would later be used to refer to fermented tofu (p. 256).

Concerning the history of soy sauce, Huang observes (P. 362): The role of soy nuggets as a precursor to soy sauce is further emphasized in the very first specific reference we have to the making of *jiangyou* (soy sauce). Found in this book written by the famous Yuan painter Ni Zan, it says: “For every official peck of yellow soybean koji (*huangzi*), have ready 10 catties of salt and 20 catties of water. On a *fu* day, mix them [in a jar] and incubate.” Note 1. *Huangzi* is soybeans covered with a mycelium of *Aspergillus* mold used as a substrate for making soy nuggets (*shi*). A *fu* day is one of the 3 *geng* days during the summer, based on the calendrical system according to ‘celestial stems’ and ‘earthly branches.’ Essentially, it means that the operation should be carried out when the weather is warm.

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Only seasonings based on jiang (fermented soybean paste) are used in this book; none are based on soy nuggets (*shi*). Jiang itself is used in 3 recipes, soy sauce made from jiang (*jiangyou*) is used in 1, and another type of soy sauce made from jiang (*jiangshui*) is used in 2 recipes. Note 2. This is the earliest document seen (Aug. 2005) that uses the word *jiangshui* to refer to a type of soy sauce.

Also discusses mantou and cooked noodles (p. 476, 484n). Address: China.

70. Liu Ji. 1370. *Doneng pishi* [Routine chores made easy]. China. [Chi]

• **Summary:** Wade-Giles reference: *To Nêng P’i Shih* by Liu Chi. Ming dynasty. Huang (2000) states: This is the earliest of at least 13 food canons and recipe books in premodern

China. “Premodern” refers to the period from the start of the Ming to the end of the Qing dynasty (1368-1912). The author was a distinguished official of the early Ming (p. 129-130). The book contains a brief recipe for making soy nuggets (p. 340) and for making jiang (p. 353, 357).

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Jiang (fermented soybean paste) is used in 5 recipes, and soy nugget sauce (*shizhi*) in 1 recipe.

The book also mentions preparation of meat and fish pastes (*jiang*) including those made from five kinds of fish, yellow sparrow, pork, lamb, mutton, and shrimp. Many of these recipes were copied verbatim from two earlier works (p. 386, 387n). Also mentions the use of soybean jiang to preserve meat or fish (p. 414n). Address: China.

71. Shijō ryōri-sho [Cookbook of the Shijo School]. 1384. Japan. [Jap]*

• **Summary:** This book mentioned “tare-miso,” “usu-tare,” and “tare usu,” which are soy sauces similar to tamari.

72. Tajimi Teiken. 1489. Shijōryū hōchōgaki [Cookbook of the Shijo school?]. Japan. [Jap]*

• **Summary:** This famous cookbook mentioned “tare miso,” “usu tare,” and “surimiso.”

73. Kuang Fan. ed. 1502. Bianmin tuzuan [Everyman’s handy illustrated compendium (or the Farmstead manual)]. China. Passage on soy reprinted in C.N. Li 1958 #310, p. 224. [Chi]

• **Summary:** Wade-Giles reference: *Pien Min T’u Tsuan*, edited by Kuang Fan. Ming dynasty. The section titled “Planting soybeans” (*dadou*) states: Prepare rows, dig holes, and plant. Plant the early varieties in the 2nd month; they will be ready for eating in the 4th month (Note: Only if they are eaten as green vegetable soybeans). These are called “plum beans” (*meidou*). Plant other varieties in the 3rd and 4th months. The ground should not be fertile, and any grass that exists should be cut / eliminated.

The section titled “Planting black soybeans” (*heidou*) says: Plant them in the 3rd and 4th month. The beans (*dou*) can be used to make jiang, or as feed (*liao*) for horses. (Translated by H.T. Huang, PhD, Jan. 2003).

Huang (2000) states: One of the food canons and recipe books in premodern China, this work, although usually classified as an agricultural treatise, is also a rich source of information on food processing (p. 129-30). It mentions red ferment (*hungqu*, p. 126 [Jap. *beni-koji*]), crabs preserved in *zao* (W.-G. *tsao*; wine residues, which are also mentioned in other works for making fermented tofu or *doufuru*, p. 413), and crabs preserved in jiang (p. 414n). This work was reprinted in +1552 and +1593.

74. Oogusaden yori soden no kikigaki [The Oogusaden and Soden cookbook?]. 1504. Japan. [Jap]*

75. ōkusa-ke ryōri-sho [The house of okusa cookbook]. 1532. Japan. [Jap]*

• **Summary:** The word *shoyu*, written with the characters used today, was first used in a cooking book in this work. The next major event with shoyu in Japan was when a brewer in Noda sent tamari to Kawanakajima.

This book also contains a detailed recipe for making Natto Miso Soup (*nattō-jiru*, a special type of miso soup that contains diced natto), which became popular during this period. Note: This is the earliest document seen (Feb. 2001) that mentions *nattō-jiru*.

Letter (e-mail) from Naomichi Ishige, Japanese natto expert. 2007. March 20. The title of this book is *ōkusa-ke ryōri-sho*. The “nattō” used to make *nattō-jiru* (natto miso soup) is actually *kuki*, or soy nuggets (*shiokara natto*, *tera natto*); it is not *itohiki nattō*. This cookbook was reprinted in a modern version in 1932 (Dec. 15) in Tokyo by Zokugunsho-ruie Ju Kanseikai (Ohta Yoshimara [person]).

Note: This is the earliest document seen (Dec. 2008) that mentions *nattō-jiru* [Natto Miso Soup] or miso soup of any type.

76. Iida Ichirobei of Shimōsa makes tamari shoyu and sends it to the Takeda family in Kosshu. This is the beginning of Noda Shoyu (Early event). 1558.

• **Summary:** In *The Book of Miso*, by Shurtleff and Aoyagi (1976, p. 221-22), in the section titled “The development of shoyu,” we read: “The area of Shimōsa, about 30 miles northwest of Tokyo and already famous as a center of miso production, was to become the birthplace of the product now known as shoyu. In 1561, in the town of Noda, Iida Ichiro Heibe made a new variety of tamari-shoyu from hishio and presented it to the samurai Takeda Shingen, already known for his interest in miso. The flavorful product soon became known by its elegant name: Kawanakajima Goyo Tamari-Shoyu. It was first produced commercially in Shimōsa in 1574.”

In “Chronology of Soybeans,” by Akio Saito (1985. *Daizu Geppo* (*Soybean Monthly News*)). Jan. p. 12-14—in Japanese we read:

1558–Iida Ichirobei of the feudal domain of Shimōsa (*Shimōsa no kuni*; today’s Noda city in Chiba prefecture) makes tamari shoyu, called Kawanaka-jima Goyo Tamari, and sends it to the Takeda family in Kosshu. This is the beginning of Noda Shoyu. It is said that the taste of shoyu gave a great boost to the energy of Takeda’s army. At about this same time Takeda Shingen (lived 1521-1573) starts to use dried-frozen tofu (*kori-dofu*) for his army in Kawanakajima after tasting the delicious *kori-dofu* from Sahtobei?

77. Hôchô kikigaki [Transcribed instructions for cooking]. 1560-1580. Published in the *Gunsho Ruiju*. Japanese summary by Kawakami, p. 136. [Jap]

• **Summary:** A *hôchô* is a Japanese kitchen knife; *kikigaki* means “listening and writing.” According to Kawakami and Kimura (1985) the term *shiokara nattô* (“salty natto”) appears in the work titled *Gunsho Ruiju* (Katsuji-hon, page 344, lower section, line 5). The authors think that this is the earliest document seen that mentions *tera nattô* or non-stringy natto [soy nuggets]. But after that time, the same food appears to be called *ko no daizu* or *kaori no daizu* (“fragrant soybeans”), and that term first appeared in the *Hôchô Kikigaki*, a cookbook that was published about 1560-1580 and that is part of the *Gunsho Ruiju* (Katsuji-hon, page 800, upper section, line 6).

This book also gives recipes using *tare miso*, made by mixing miso and water. Mentions *chiang*. Also contains a very early possible footnote reference to soy sprouts, *Moyashitaru mame*.

78. Matsuya Hisamasa. 1561. Nattô-jiru [Natto miso soup]. In: Matsuya Hisamatsu chakai-ki [Three-generation diary of the Matsuya family’s tea ceremonies]. Sept. 5. Compiled by Hisashige Kaiki. Japanese summary by Kawakami 1978, p. 261. [Jap]*

• **Summary:** Concerning *natto-jiru* (natto soup): Kawakami and Kimura (1985) state that in the olden days in Japan, people used natto in a soup (*nattô-jiru*), which was quite popular. However these two authors think that the *natto* used in this soup was probably soy nuggets (*kuki*, *shiokara natto*, *tera natto*) rather than *itohiki natto*. This is the 2nd earliest document seen (Feb. 2007) that mentions *nattô-jiru*. It is mentioned in the entry for 5 Sept. 1561. Mr. Matsuya was a rich merchant in the Nara area. His family kept their diary for three generations. Address: Japan.

79. A feudal lord who controls the port of Nagasaki in Kyushu is converted to Christianity. As a gift of thanks, he cedes Nagasaki to the Jesuits (Early event). 1580.

• **Summary:** Alessandro Valignano (1539-1606) was an Italian Jesuit missionary who was a leader in the introduction of Catholicism to East Asia, especially Japan. In 1584 he wrote “*Historia del Principo y Progreso de la Compania de Jesus en las Indias Orientales (1542-64)*” which states: In 1580 the daimyo who controlled the port of Nagasaki was converted to Christianity. As a gift, he ceded the port to the Society of Jesus (Jesuits). Under Jesuit control, Nagasaki would grow from a small fishing village with one street to an international trading port rivaling Goa or Macao in influence.

80. Konko chômi-shû [Present and old cooking collections]. 1580. Publisher unknown. 276 p. Handwritten. Japanese summary by Kawakami 1978, p. 46. [Jap]

• **Summary:** The year 1580 was the year the book was copied. The actual year it was written is unknown. It is a sort of encyclopedia of cooking, and includes 17 varieties of sake, 3 varieties each of hishio and miso, plus a tofu section... and much more.

81. Allesandro Valignano, a Jesuit, later says he bought miso in Japan (Early event). 1583.

• **Summary:** Valignano (1539-1606) was an Italian Jesuit missionary who was a leader in the introduction of Catholicism to East Asia, especially Japan. He first visited Japan from 1579 to 1582, when he developed a strategy for the introduction of Christianity. His luxurious life and authoritarian attitudes were criticized by members of the mendicant orders such as the Franciscans and Dominicans. He emphasized study of the Japanese language and culture, and required that all new missionaries spend at least two years in a language course and do their best to learn Japanese customs and manners. He was a great admirer of the Japanese people and envisioned a future when Japan would be one of the leading Christian countries in the world. He famously wrote that the Japanese “excel not only all the other Oriental peoples, they surpass the Europeans as well” (Alessandro Valignano, 1584, “*Historia del Principo y Progreso de la Compania de Jesus en las Indias Orientales (1542-64)*”).

In order to finance the Jesuit seminaries, schools, and printing presses, the missions needed money. The local daimyo curried favor with the Jesuit administration in hopes of having Portuguese trading ships visit their local port more often. In 1580 the daimyo who controlled the port of Nagasaki was converted to Christianity. As a gift, he ceded the port to the Society of Jesus (Jesuits). Under Jesuit control, Nagasaki would grow from a small fishing village with one street to an international trading port rivaling Goa or Macao in influence. In all, Valignano made three visits to Japan: 1579-1582, 1590-1592, and 1598-1603.

In 1954 his *Sumario de las cosas de Japón (1583)*. *Adiciones del Sumario de Japón (1592)*. *Editados por José Luis Alvarez-Taladriz* [Summary of the things of Japan (1583). Additions to the Summary of Japan (1592), edited by José Luis Alvarez-Taladriz], was published.

In the 1st book, on page 93, the author mentions that he bought the necessary provisions, rice, miso, dried fish, etc. Footnote 240 gives a long definition of *misso* (sic, miso) in Italian from *Saverio Orientale*, by Bernardino Ginnaro (1641, Naples).

82. Gao Lian. 1591. Yinzhuan fushijian [Compendium of food and drink]. China. Passage on soy reprinted in H.T. Huang 2000, p. 297, 324, 340, 373. [Chi]

• **Summary:** Wade-Giles reference: *Yin Chuan Fu Shih Chien*, by Kao Lien (who lived 1574-1624). Ming dynasty. Huang (2000) discusses: Processes for making sprouts from

yellow soybeans (*dahuangdou*) and broad beans (*handou*) (p. 297; Footnote: The identity of *handou* is uncertain; it could be either broad beans (*candou*, *Vicia faba*) or peas (*wandou*, *Pisum sativum*)). Mention of tofu (p. 324). Brief recipe for making soy nuggets (*shi*, p. 340).

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Seasonings based on jiang (fermented soybean paste) are used in 27 recipes: jiang itself in 20, soy sauce made from jiang (*jiangyou*) in 5 recipes, soy sauce named *jiangzhi* in one recipe, and soy sauce named *jiangshui* in one recipe. Seasonings based on soy nuggets (*shi*) are used in only 5 recipes: Soy nuggets (*shi*) in 4 recipes, and soy nugget sauce named *shizhi* in 1.

Huang adds (p. 373): Soy sauce (*jiangyou*) started to rival jiang in importance during the Ming [1368-1644], and by the early years of the Qing [1644-1912] had surpassed it in culinary usage. This book is the last Ming entry in the table. Huang also discusses: Use of red ferment (*hongqu*) to make red rice wine (p. 196).

Huang (personal communication, 5 June 1993), gives the date of this document as +1591, and notes that pages 148-49 mention *fu cha* (tossed gluten salad) and *chien fu* (pan-fried gluten slices). This information is repeated from an earlier book by Han I written ca. +1350.

Bo (1982): This Ming dynasty book contains many recipes that use soy sauce. Partly reprinted in Shinoda & Tanaka (1973), “A Collection of Chinese Dietary Classics.”

83. Li Shizhen. comp. 1596. *Bencao gangmu* [The great pharmacopoeia]. China. Passage on soy reprinted in C.N. Li 1958 #311, p. 224-26. [Chi]

• **Summary:** Wade-Giles reference: *Pên Ts'ao Kang Mu*, by Li Shih-Chên (lived 1518-1593). Ming dynasty. This classic work was completed in 1578, but not published until 1596. It describes almost 2,000 animal, vegetable, and mineral drugs and gives over 8,000 prescriptions. A rich source of information, it is still very useful. All foods mentioned are considered as medicines, based on the ancient Chinese saying: “Food and medicine have the same origin.” The title might also be translated as “Collected essentials of herbs and trees. Illustrated compendium of materia medica with commentaries.”

Soybeans and soyfoods are discussed in two chapters of this book. Chapter 24 contains sections on soybeans, soybean sprouts, and yellow soybeans, in that order. Chapter 25 has sections on soy nuggets, yellow molded soybeans (Jap. soybean koji), tofu and yuba (*doufu pi*), jiang, and soy sauce. Concerning yuba, we learn that a skin is formed on the surface of soymilk when it is heated in the process of making tofu. This skin can be lifted off and dried to give yuba (*doufu pi*).

Note. This is the earliest China-language document seen (Oct. 2008) that mentions yuba, which it calls *doufu pi*

(Huang 2000, p. 303, 323)

The first part of each section is titled “Explanation of names”; when these simply repeat material we have translated from earlier Chinese documents, we will not retranslate it. Another part of each section explains each food / medicine in terms of its “nature” or “vital energy” (*qi*, hot, warm, neutral, cool, and cold) and “flavor” (*wei*, bitter, sour, sweet, pungent, salty).

The section titled “Soybeans” (*dadou*) begins by stating that soybeans are considered a “middle class drug / medicine” according to the *Shennong Bencao Jing* (*Benjing*) (Classical pharmacopoeia of Shennong, the Heavenly Husbandman) (+100). This section has four parts: (1) “Explanation of names.” The soybean is *shu*. The pods are called *jia*. The leaves are called *huo*. The stems are called *qi*. (2) “Explanation of uses.” After quoting information from earlier Chinese sources, he states: The different soybean varieties are black, white, yellow, spotted / speckled (*ban*), green, and striped. The black ones are also called *wudou*. They are used for both medicine and food, and for making soy nuggets (*shi*). The yellow ones are good for making tofu (*fu*), for pressing to obtain oil, or for making jiang. But the other soybean varieties can also be used to make tofu and can be cooked for food. They are usually planted before summer. The young plants (*miao*) grow to a height of 3-4 feet. The leaves are pointed. In the fall they have small white flowers which come in clumps about one inch across. The plants wither in the frost.

According to the *Lüshi Chunqiu* (Master Lü’s spring and autumn annals) (239 B.C.), when soybeans are in season, the stems are long and the branches are short. The pods come in groups of 27. The more branches there are, the more nodes. The large soybeans (*shu*) are round; the small soybeans (*shu*) are oval. The early varieties tend to grow like vines. The leaves float. The nodes are further apart. The pods are smaller and not solid. The later varieties have fewer nodes, less space between nodes, and they are less solid. According to the *Fan Shengzhi Shu* (The book of Fan Shengzhi {on agriculture}) (10 B.C.), if you plant soybeans in early summer, you should not plant them deep because the flowers do not like too much sun; they will rot and the roots will be scorched. One should adjust the depth of planting according to the variety. [After harvesting] store soybean seeds in a level, shady place in a bag. Take them out 15 days after winter begins; then you can use them for planting. Soybeans can be stored quite easily for one full year, so they can be kept in preparation for a famine year.

(3) Black soybeans—nature and flavor (*heidadou qiwei*): They are sweet, neutral, and nontoxic. Prolonged ingestion will make you / your internal organs feel heavy. When raw, they are warm. When cooked, they become cold—according to *Zhibo* (a person) cited in the *Huangdi Neijing Suwen* (Yellow Emperor’s classic of internal medicine: Questions and answers) (200 B.C.). Chang Qi (another person) says:

When soybeans are raw they are neutral, but when they are roasted they become hot, and when they are boiled they become cool (*han*). When made into soy nuggets they become cold (*leng*). When used to make jiang or soy sprouts (“raw yellow curls”) they are neutral. When cattle eat them, they are warm [i.e. they have a warming effect on the cattle]. When horses eat them, they are cold. So even though it is one substance, when it is eaten in different ways, it has different effects.

(4) “Inventions” (*faming*): Explains the complex pharmacology and medicinal effects of soybeans on the five internal organs—such as the kidney, liver, etc.

The section titled “Soybean sprouts” (*dadou huangjuan* or “soybean yellow curls”) has two parts: (1) “Explanation of names.” These are sprouted [soy] beans (*dounie*). Allow the black soybean to sprout until it is 5 inches (*cun*) long. Then dry it; this is called *huangjuan* (“yellow curls”). It becomes very small when dried. (2) Nature and flavor (*qiwei*): Sweet, neutral, nontoxic. Note 1. This is the earliest document seen (April 2003) that uses the term *dounie* to refer to “sprouted soybeans.”

The section titled “Yellow soybeans” (*huang dadou*)—explanation of food uses—is divided into three parts: (1) “Explanation of names.” Similar to the passage above stating that yellow soybeans are good for making tofu (*fu*), for pressing to obtain oil, for making jiang, etc. (2) Nature and flavor (*qiwei*): Sweet, warm, nontoxic. (3) Soybean oil (*douyou quiwei*) nature and flavor: Pungent, sweet, and hot (*re*); slightly toxic. Note 2. This is the earliest document seen (Feb. 2003) that uses the term *huang dadou* to refer to yellow soybeans.

Note 3. This is the earliest Chinese-language document seen (Sept. 2006) that uses the term *douyou* to refer to soybean oil.

Red azuki beans (*chixiaodou*) are also mentioned in this book; a listing of alternative names, with commentaries, is given. (See Li 1958 #393).

White beans (*baidou*) are also mentioned as follows: White beans (*baidou*) are mentioned in the Song dynasty. They are also called *fandou*. The seedlings can be used as a vegetable. They are good eaten raw. In eastern Zhejiang the flavor is especially good. They can be used to make jiang and tofu (*fu*). In the north, the watery white beans (*shui baidou*) are similar but is not as good. White beans are also called *fandou*. They can be used to complement congee / gruel (*zhou*) and cooked rice served as a main dish (*fan*). According to the author (Li Shizhen) *fandou* is the same as white azuki beans. Some white beans have a yellow color. The beans are about the size of mung beans (*liudou*). Plant them in the 4th or 5th month. The leaves of the seedlings are like those of red azuki beans (*chixiaodou*) and can be eaten. The pods are like those of azuki beans (*xiaodou*). One kind of pod comes with leaves like those of the soybean (*dadou*). They can be cooked like rice and used to make tofu (*fu*).

They are of the same category. Nature and flavor (*qiwei*): It is sweet, neutral, and nontoxic. (See Li 1958 #467). (Translated by H.T. Huang, PhD, May 2003). Dr. Huang adds: The white bean (*baidou*) could well be the white azuki bean.

84. Li Shizhen. comp. 1596. *Bencao gangmu* [The great pharmacopoeia]. China. Passages on soy reprinted in C.N. Li 1958 #140, p. 95-96, and #311, p. 224-26. [Chi]

• **Summary:** Continued: Wade-Giles reference: *Pên Ts'ao Kang Mu*, by Li Shih-Chên (lived 1518-1593). The following information on soybeans and soyfoods appears in Chapter 25 of the *Bencao Gangmu*.

The section titled “Soy nuggets” (*dadou shi*) is divided into four parts: (1) “Explanation of names.” The word *shi* (different character but same pronunciation) also means something delectable and highly desirable. According to the *Shuowen Jiezi* (Analytical dictionary of characters) (+121), you get soy nuggets by adjusting salt and incubating soybeans (*shu*). (2) “Explanation of uses” gives a long, detailed description of how to make soy nuggets. See Huang 2000, p. 340-41. *Shi* can be made from various types of soybeans. When made from black soybeans, they make good medicine. There are two kinds of *shi* [both made by a mold fermentation]: unsalted / bland soy nuggets (*danshi*), and salted / savory soy nuggets (*yanshi*).

To make unsalted / bland soy nuggets (*danshi*): In the 6th month, take 2-3 *dou* (20-30 liters) of black soybeans. Winnow until clean then soak overnight in water. Steam the beans thoroughly then spread on a mat. When almost cool, cover beans with artemisia leaves. Examine them every 3 days. When they are covered, but not luxuriantly, with a yellow coating [of mold], dry them in the sun, then winnow until clean. Add enough water to wet the soybeans, so that when scooped by hand, there will be wetness between the fingers. Place them in an earthenware jar (*weng*) and pack them down tightly. Cover with a 3-inch layer of mulberry leaves. Seal mouth of jar with mud, then let stand in the sun for 7 days. Remove beans from jar and dry them in the sun for an hour. Wet them again and put them back in the jar. Repeat this process [from wetting and sunning] 7 times. Finally, steam the beans, cool, dry, and store in the jar.

To make salted / savory soy nuggets (*yanshi*): Take 1 *dou* (10 liters) of soybeans, soak in water for 3 days, steam thoroughly and spread on a mat (as before). When the beans are covered with a yellow coating [of mold], winnow, soak in water, drain off the water, and dry in the sun. For every 4 catties of beans (1 catty weighs about 1.33 pounds), mix in 1 catty of salt, plus half a catty of finely-cut strips of ginger. Place mixture in an earthenware jar. Season with pepper (*jiao*), orange peel, perilla, fennel, and almonds. Add water until it is one inch (*cun*) above surface of mixture. Top contents with leaves, then seal the mouth. Sun the jar for a month; then the savory soy nuggets will be ready.

Huang (2000, p. 341) notes that the process described above is identical in principal to that in the *Qimin Yaoshu* (Important arts for the people's welfare) (+544), reiterated about 350 years later in the *Sishi Zuanyao* (Important rules for the four seasons) (+900).

(3) Unsalted / bland soy nuggets nature and flavor (*danshi qiwei*): Bitter (*ku*), cold (*han*) and nontoxic. (4) Puzhou soy nuggets (*Puzhou shi*) nature and flavor: Salty (*yan*), cold (*han*), nontoxic. Note: Puzhou is a place in Shanxi province, China, noted for its distinctive soy nuggets. This is the earliest document seen (Feb. 2003) that mentions *Puzhou shi*.

The section titled "Yellow soybean koji" (*douhuang*, "bean yellow") describes the soybeans covered with yellow mold; they are the first step in making salty soy nuggets and are not a consumer food product. This section is divided into two parts: (1) "Explanation of names." Describes how to make *douhuang*. According to Li Shizhen (the author of this book): Take one *dou* (bushel) of black soybeans. Steam until cooked through. Spread on a mat and cover with rushes—as if you were making *jiang*. Allow the soybeans to mold until they have a yellow coating. Dry, then grind. (2) Nature and flavor (*qiwei*): Sweet, warm, nontoxic.

Dr. Huang offers a comparison of *danshi* and *douhuang* (Feb. 2003 Feb): Unsalted / bland soy nuggets (*danshi*) is an end product, which is largely free of molds when it is sold; it was traditionally used in Chinese medicine. Dr. Huang has never seen or tasted *danshi*, never heard of it being used in food, and never seen it for sale in the USA. *Danshi* is made by a two-stage fermentation. In the first stage, after the soybeans are covered with a yellow coat of mold, they are winnowed, soaked in water, rinsed to remove most of the white mold and its yellow spores, then sun dried. In the second stage, the beans are packed tightly into a container and incubated for 10-15 days depending on the season. This stage enables the enzymes to act on the soybeans, digesting some—but not all—of the soy proteins. If the incubation is too long, some of the excessive peptides resulting from digestion of soy proteins may give the *danshi* a bitter taste. By comparison, yellow soybean koji (*douhuang*) is an intermediate stage of soybean processing not normally sold, but used to make *jiang*.

(C) The section titled "Tofu": The first clear recipe for making tofu in China appears in chapter 25 of this book (Huang 2000, p. 303). Li says that the process for making tofu (*doufu*) originated with the Prince of Huai-Nan, Liu An. Black [soy] beans, soybeans, white [soy] beans, mud beans, peas, mung beans, etc. can all be used. There are six steps: 1. Soak the soybeans [in water]. 2. Grind the beans [to give a slurry]. 3. Filter the milk [to remove the insoluble residue {okara}]. 4. Cook the milk [for an adequate time]. 5. Add nigari / bittern (*yen lu*), leaf of the mountain alum tree (*shan fan*), or vinegar to coagulate the milk. 6. Collect the curds.

Li Shizhen continues: One can also obtain curds by mixing the hot milk in a container with gypsum powder. Various salty, bitter, sour, or pungent materials can also be used to coagulate the soymilk. If a film forms on the surface of the soymilk, it should be collected and dried to give yuba (*doufupi* or 'tofu skin'), which is itself a delicious food ingredient. Note 1. This is the earliest document seen (Oct. 2002) that mentions nigari or yuba. Li (1958) adds: "Vital energy and flavor (*chiwei*, of tofu): Sweet, salty, cold / cooling, slightly toxic." Huang adds (p. 303) that although Li gives no details about the tofu-making process, we can surmise that the procedure used in his time is very similar to that used today in the Chinese countryside. Huang (p. 304-05) reprints line drawings (from Hung Kuang-Chu 1984, p. 58-60) of the traditional process for making tofu still used in China, and notes that the same curdling agents or coagulants listed by Li Shizhen (bittern, mountain alum, vinegar, and gypsum) are still in use today.

85. Li Shizhen. comp. 1596. *Bencao gangmu* [The great pharmacopoeia (Continued)]. China. Passages on soy reprinted in C.N. Li 1958 #140, p. 95-96, and #311, p. 224-26. [Chi]

• **Summary:** Continued: Wade-Giles reference: *Pên Ts'ao Kang Mu*, by Li Shih-Chên (lived 1518-1593). The following information on soybeans and soyfoods appears in Chapter 25 of the *Bencao Gangmu*.

The section titled *jiang*, Li (1958, p. 95-96) states: Explanation of the name: According to the *Shiming* by Liu Xi (+150), *jiang* is like a military general (*jiang*) who directs and can control the poison in food. It is just like a general controlling the evil elements in the population. Explanation of the method: [Li] Shizhen says there are different varieties of *mianjiang* (which is sweet); it can be made from barley, wheat, sweet *jiang* (*tianjiang*), or bran *jiang* (*fujiang*). Bean *jiang* (*doujiang*) also comes in different varieties such as that made from soybeans (*dadou*), azuki beans (*xiaodou*), or peas (*wandou*, *Pisum sativum* L.) and soy sauce (*douyou*, literally "bean oil)." Note: Soy sauce is classified here as a subcategory of bean *jiang*. This is the earliest document seen (Aug. 2005) that uses the word *douyou* to refer to soy sauce.

To make soy sauce (*douyou*), take 3 *dou* of soybeans (1 *dou* is about 1 pint, so 3 pints of dry soybeans weigh about 2.43 pounds). Boil in water until soft. Mix with 24 catties of wheat flour (1 catty = about 1.33 pounds, so 24 catties weigh about 31.92 pounds). Allow them to become molded. For every 10 catties, add 8 catties of salt and 40 catties of well water. Blend to a slurry. Then collect the sauce [which separates].

Note: This is the earliest document seen (June 2007) that describes a method for making Chinese-style soy sauce in which a significant amount of wheat (or wheat flour or barley) is mixed with the soybeans before fermentation

begins. The ratio by weight of wheat to soybeans in this early Chinese soy sauce is about 13 to 1, whereas the ratio in modern (early 21st century) Japanese soy sauce is about 1 to 1. How could the early Chinese make so much wheat flour stick to such a relatively small amount of boiled soy beans? Maybe the soybeans were mashed, mixed with the wheat flour and shaped into cakes before letting the cakes become molded (See Wang and Fang 1987).

To make soybean jiang (*dadou jiang*), dry-roast soybeans (*dou*) then grind to a flour. For every *dou* (pint) add 3 *dou* of flour. Blend well and shape into cakes. Allow it to stand until it becomes moldy. For every 10 catties, add 5 catties of salt. Then cover it with well water [in a container], and sun it and collect it.

Concerning the use of soybeans in wine, Chapter 25 contains a section on “wine” (*jiu*) which refers to a type of soy wine called *doulinjiu* (W.-G. *tou-lin chiu*; “bean soak wine”) which is made by percolating regular Chinese wine (fermented from cereal grains) through roasted black soybeans. A recipe is given and it is stated that the *Congshu Jicheng Chubian* (Collected collecteana) (+1473), having 3,467 volumes, says that it cures post-partum white sickness, apparently an affliction suffered after the birth of a child.

Also describes how to make jiang from azuki beans (*xiaodou*) or from barley (*damai*).

Vital energy and flavor (*qiwei*, of jiang): Salty, cold / cooling, nontoxic. *Mienjiang* [made with wheat and soybeans] is salty. Bean jiang (*doujiang*), sweet jiang (*tianjiang*), soy sauce (*douyou*), barley jiang (*damaijiang*), and bran jiang (*fujiang*) are all salty and sweet [because they are made with wheat, which is hydrolyzed to sugars].

Huang (2000, p. 357) states that this book is the first to introduce the process for making sweet wheat-flour jiang (*tianmian jiang*). The process for making soybean jiang described in the *Bencao Gangmu* is very similar to that described in the *Jujia Biyong* (Essential arts for family living) (ca. +1350).

Huang (2000, p. 363) gives the process for making soy sauce, which appears in the *Bencao Gangmu* as an appendage to the section on jiang, titled “soybean oil” (*douyou*) which was obviously a synonym for soy sauce (*jiangyou*). Take 3 *dou* (1 *dou* = about 10 liters) of soybeans; boil in water until soft. Blend in 24 catties of wheat flour. Incubate until the mixture is covered with yellow mold. Mix 10 catties of the yellow jiang substrate with 8 catties of salt and 40 catties of well water. Ferment in an earthenware jar in the sun until the product is ready. Huang comments that although the passage does not explain how the soy sauce is separated from the fermented mash, it is absolutely clear that we have here a process based on jiang and the product can rightfully be called soy sauce (*jiangyou*).

Concerning the use of soybeans in wine, Chapter 25 contains a section on “wine” (*jiu*) which refers to a type of soy wine called *doulinjiu* (W.-G. *tou-lin chiu*; “bean soak wine”) which is made by percolating regular Chinese wine (fermented from cereal grains) through roasted black soybeans. A recipe is given and it is stated that the *Congshu Jicheng Chubian* (Collected collecteana) (+1473), having 3,467 volumes, says that it cures post-partum white sickness, apparently an affliction suffered after the birth of a child.

Huang also discusses from the *Bencao Gangmu*: Koji (*qu*) for making rice wine (*jiu*, p. 158). Malt sugar (*i*, p. 158). Red ferment (p. 196, 200-02). Malt sugar (*i t'ang*, p. 460).

Huang (2000) cites this (p. 621) as *The Great Pharmacopoeia* [or *Pandects of Natural History*]. Ming, +1596. Paraphrased and abridged translation: Bernard E. Read and associates (1-7). Textual references are to the 1975 edition published by Renmin Weisheng, Peking. It mentions dried young soybean sprouts (*dadou huangjuan* or “yellow curls”) as having medicinal properties.

Wilkinson (2000, p. 662) translates the title as *Collection of Materia Medica*, gives the publication date as 1602, and notes that Li lived 1518-1593.

86. Li Shizhen. comp. 1596. *Bencao gangmu* [The great pharmacopoeia]. China. See p. 360-71. 1965 ed., reprint of 1885 edition, Peking. Also reprinted in 1916 by Shanghai Hong Pao Chai Book Co., Shanghai. [Chi]

• **Summary:** Wade-Giles reference: *Pên Ts'ao Kang Mu*, by Li Shih-Chen (lived 1518-1593). The author: Bretschneider (1882, in *Botanicon Sinicum*, p. 54-55) notes: “Li was born at K'i Chou in Hu pei probably in the first quarter of the 16th century, and died toward the close of the same century. His literary name was *Tung pi*. He wrote under the pseudonym *Pin hu*. As was the case with the majority of early Chinese physicians of note, Li Shi chen was not a professional medical man, but a civil functionary and a magistrate of the district of P'eng k'i (T'ung ch'uan fu, Sz' ch'uan [Szechuan]). Besides this, his principal work, Li left several medical treatises. “Li began compilation of this work in 1552, and after 26 years' labour he completed it in 1578. He wrote out the manuscript three times before he was satisfied to give it out as complete. The author died before it was published, and his son, Li Kien yüan, presented the manuscript to the Emperor, in 1596, who ordered it to be printed.”

The work: Called *Honso Komoku* in Japanese, this is the most famous of the many Chinese herbals, and the most important Chinese work on materia medica and natural history. Also called a botanical encyclopedia, it is the first treatise of its kind in which the material is treated critically. Bretschneider (1882, p. 55) adds: “Several editions have been successively issued. The earliest now extant is, it

seems, that of Shun chi 15 (A.D. 1658). All editions which I have had an opportunity of examining are printed on indifferent paper and are full of misprints, which make the book very inconvenient for reference... The preface is followed by a general index of the 52 books (chapters) of the work, enumerating the 16 divisions and the 62 classes under which the whole matter is arranged... It begins with a critical review of the 42 capital works on *Materia media* published” previously.

Concerning the year of publication: Huang (2000, p. 621) says 1596. Yokotsuka (1986, p. 198) says 1590 and cites this as the earliest Chinese work to mention *chiang-yu* and *tao-yu* (the liquid separated from soybean *chiang*). Wai (1964) says 1596. Reischauer and Fairbank (1960, p. 308) say it was completed in 1578. Li (1958) says 1578. Merrill & Walker (1938) say 1590. Bretschneider (1881) says: Completed in 1578 but published in 1596 or 1597.

Talk with H.T. Huang. 1992. March 23. The most current, and one of the best, editions of this work was published in 1982 in Beijing by The People’s Health Press (2,977 pages). It is edited and extensively annotated by Liu Heng-ju. He compared several of the most important extant versions, and where they differ (e.g. where a word is written differently in different versions), he explains these differences in footnotes, and explains why he chose the word or text that he did for his basic text. There is no English translation of the *Pen-ts’ao kang-mu*, one of the great scientific works in China (and worldwide) because: (1) It is a huge book which would take a lifetime to translate; (2) A vast amount of research would be required for an accurate translation; and (3) The cost of the translation and publication, and the relatively limited demand for the finished work would probably make the venture unprofitable for a commercial publisher. Perhaps the Chinese Academy of Traditional Medicine would be able to undertake such a translation, working jointly with English-speaking Western scholars.

In the section on soybeans, this work refers to a type of soy wine called *tou-lin chiu* (“bean soak wine”) which is described as a sake-like fermented alcoholic beverage made from black soybeans. A recipe is given and it is stated that the *Ts’ung-shu chi-ch’eng ch’u-p’ien* (1473) said that it cures post-partum white sickness, apparently an affliction suffered after the birth of a child.

Wang and Fang (1987) write: The method of preparing *chiang-yu* (soy sauce) was first described in this work. Cooked soybeans were mixed with wheat flour, pressed into cakes, and left in the room until the cakes were covered with yellow mold growth. The molded cakes, or *ch’ü*, were mixed with salt and water and aged in the sun. After pressing, the liquid was known as *chiang-yu*. Li also described how to make a similar sauce (*shi-tche*) by boiling soy nuggets.

Needham (Botany, 1986, p. 318g): “The soya-bean, *Glycine Soja, ta tou*, was considered an antidote for indigestion and poisoned conditions of the intestinal tract, but Li Shih-Chen found that this never had any effect unless *kan ts’ao* (*Glycyrrhiza glabra*) was given with it (chap. 24, p. 4a).”

Fukushima (1979, p. 5-6): “The *chiang-yu* described in *Pen-ts’ao Kang-mu* (*Honso-Komoku* in Japanese), published in 1590 by Li Shih-chen (*Ri Jichin* in Japanese) in the Ming (*Min* in Japanese) dynasty, was also made with *koji* [*ch’ü*] manufactured by using soybeans and cereals (Fig. 4). (In this process soybeans were cooked in water, mixed with wheat, and spontaneously molded to form *koji*. Salt water was mixed in with a paddle, then the mash was insulated and aged. Finally it was filtered to make *chiang-yu*). The ratio of soybeans to wheat in the *koji* making was 3:2. This ratio is very close to that used in making regular Japanese *shoyu*, which is made by using equal amounts of soybeans and wheat.”

Wai (1964) notes that this book infers that soybean curd [tofu] was invented by Liu An.

Sato (1963, p. 20), in his book titled “Documents on Soy Nuggets, *Chiang*, Miso, and *Shoyu*,” cites this as the fourth earliest Chinese document seen on the subject. It was translated into Japanese by Suzuki Shintai.

Morohashi (1955) translated parts of the *Bencao* related to [soy] bean oil (*douyu*), bean sprouts (*douya*, *dounieh*), soy nuggets (*doushi*), tofu (*doufu*), [soy] bean flour (*doufen*), bean soak wine (*doulinjiu*), soybeans (*dadou*—production; there are black, white, yellow, dark brown, green, and speckled soybeans).

87. Francesco Carletti of Florence later says he saw miso in Japan (Early event). 1597.

• **Summary:** Carletti, a 16th century Florentine merchant (lived 1573-1636), set out from Seville, Spain with his father in 1594, on what was intended to be a relatively brief slave trading voyage but eventually became a circumambulation of the globe. In June 1597 he arrived in Nagasaki, Japan, where he saw miso soup—and crucified Christians. After losing most of the wealth he had accumulated by astute trading, he finally returned to Florence, Italy in July 1606. There he was welcomed at the court of Ferdinando de’ Medici [lived 1549-1609], Grand Duke of Tuscany, to whom he made the first verbal reports of his experiences, which later were written down as the *Ragionamente* (Chronicles). Thus, he didn’t actually write about miso until after July 1606. Scholars generally agree that the best copy is a 17th century manuscript titled *I Viaggi di Francesco Carletti* in the Biblioteca Angelica in Rome (Codice 1331; T.3.22). A much-polished and heavily edited version was published in 1701.

In 1964 Herbert Weinstock’s English-language translation of the Roman version was published as *My*

Voyage Around the World. On page 110 Carletti says the following about the rice miso (he calls it “*misol*”) which he saw in Japan in 1597.

“They prepare various sorts of dishes from fish, which they flavor with a certain sauce of theirs which they call *misol*. It is made of a sort of bean that abounds in various localities, and which—cooked and mashed and mixed with a little of that rice from which they make the wine already mentioned [saké, p. 100-01], and then left to stand as packed into a tub—turns sour and all but decays, taking on a very sharp, piquant flavor. Using a little at a time, they give flavor to their foods, and they call *shiro* [sic, probably *shiru* but possibly shoyu] what we would call a potage [soup] or gravy. They make this as I have said, of vegetables and fruit and fish all mixed together, and even some game, and they eat it with rice, which serves them as bread and is cooked simply in water and served in certain wooden bowls lacquered with red lacquer, eating it very cleanly and never touching it with their hands. For they eat everything by using two small sticks...”

Note: This is the earliest document seen concerning soy in connection with (but not yet in) Italy.

88. *Ekirinbon setsuyôshû* [Early Japanese dictionary]. 1597. Japan. [Jap]*

• **Summary:** This dictionary contains the earliest known published reference to shoyu (soy sauce) in Japan, written with the characters used today. Prior to this, other characters were used: Hishio/chiang, mame-bishio, etc. Written by a Japanese priest between 1469 and 1503, it was widely circulated in manuscript form and used by the common people. Modern rendering by Kawakami 1978, p. 220. It also mentions amazake and ko (the early term for amazake). Note: This is the earliest Japanese-language document seen that mentions amazake, which it calls “amazake” and “ko.” This is also the earliest document seen (March 2001) concerning the etymology of amazake.

Yokotsuka (1986, p. 198) gives the title and date as “*Ekirinbon-Setsuyoshu* (1598)” and notes that the term shoyu was written with the same Chinese characters as chiang-yu.

Fukushima (1989, p. 9): “The word ‘shoyu’ first appeared in *Ekirinbon-Setsuyoshu*, a Japanese dictionary published in 1597 during the Muromachi period.”

89. Saito, Akio. 1599. [Chronology of soybeans in Japan, 1336 to 1599, the Ashikaga/Muromachi period] (Document part). In: Akio Saito. 1985. *Daizu Geppo* (Soybean Monthly News). Jan. p. 14. [Jap; eng+]

• **Summary:** 1350—Dengaku (Oden) is mentioned in the records of the Gion shrine in Kyoto.

1444 June—The present characters for “tofu” appear in the *Kagakushu* encyclopedia.

1450—The suribachi (a serrated earthenware grinding bowl or mortar) becomes popular among the common people, therefore miso soup becomes popular.

1469—In the feudal domain of Sanuki (*Sanuki no kuni*) the Sakade Salt Farm (*Sakade Enden*) starts operation.

1500—In the published collection of Japanese poems and songs titled *Shichijû-ichiban shokunin-zukushi uta awase*, there is a drawing of a lady in a black kimono and white headband sitting cross legged on a low platform on a street and selling large and small pieces of cut tofu.

1521—The present characters for the word “shoyu appear for the first time in the book *Ekirinbon Setsuyoshu*.

1526—In a memorandum by Munenaga is written: “Late in the night, sitting by the fireplace together, and eating many Dengaku tofu” (*Yo mo fuke, irori-be ni hiza o narabe, Dengaku tofu o do kasanari.*) It seems that at the end of the Muromachi period, people spread miso on tofu, grilled it over a fire, then ate it.

1535—In Kishu (today’s Wakayama prefecture), Akagiri Umataro? (Zenuemon/Yoshuemon?) starts selling Yuasa Shoyu, which is derived from Kinzanji miso.

1558—Iida Ichirobei of the feudal domain of Shimôsa (*Shimôsa no kuni*; today’s Noda city in Chiba prefecture) makes tamari shoyu, called Kawanaka-jima Goyo Tamari, and sends it to the Takeda family in Koshu. This is the beginning of Noda Shoyu. It is said that the taste of shoyu gave a great boost to the energy of Takeda’s army. At about this same time Takeda Shingen (lived 1521-1573) starts to use dried-frozen tofu (*kori-dofu*) for his army in Kawanaka-jima after tasting the delicious kori-dofu from Sahtobei?

1559—The book *Tokitsugu Kyoki* by Yamashina Tokitsugu (lived 1507-1579) states that Tokitsugu sent a small keg of shoyu to Nagahaki kyoku. It seems that at the end of the Muromachi period, shoyu is becoming popular.

1560 May—Oda Nobunaga (who lived 1434-1582) wins the war over Imagawa Yoshimoto (1519-1560) in Okehazama. At about this time people start use the technique of frying to prepare the side dishes to their meals (*fukushoku-hin*) for the first time.

1573-91—Shoyu making starts on the island of Shodo-shima.

1574—Tanaka Chobei of the feudal domain of Shimousa (today’s Chiba prefecture) Ichikawa starts making shoyu.

1587—Maruo Magouemon of Hanshu Tatsuno makes shoyu using Mikazuki soybeans.

1591—Akagiri Saburobei of Yuasa in Kishu-han (today’s Wakayama prefecture) starts to use Shoyu Kaisen, a ship of at least 200 koku [9,520 gallons] capacity to transport his shoyu to other feudal domains (*kuni*) for sale.

1594—The term *koma-dofu* appears in the Rokuon Diary of Ginkakuji. “Rokuon” means “deer garden.” *Koma-dofu* is a very firm tofu which originated in Korea. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

90. Companhia de Iesus [Society of Jesus (Jesuit)]. 1603. Vocabulario da lingua de Iapam, com a declaração em Portugues, feito por alguns padres, eirmaos da Companhia de Iesu [Vocabulary of the language of Japan, with definitions in Portuguese, produced by some fathers and brothers of the Society of Jesus]. Nagasaki, Japan. 403 p. [Por; Jap]

• **Summary:** At the bottom of the title page is written: “Com licença do ordinario, & Superiores em Nangasaqui no Collegio de Iapam da Companhia de Iesus. Anno M.D. CIII.” The “Licença” or license by Francisco Pasio is dated 2 Jan. 1603. A romanized version of each Japanese word is given, followed by a brief explanation in Portuguese. In Japanese, this book is known as *Nippo Jisho, Nagasaki-ban*. In 1960, Iwanami Shoten published a facsimile edition in Japan, titled *Nippo Jisho: Vocabulario da lingua de Iapam*, compiled by Tadao Doi (822 p., 22 cm), then in 1980 they published a Japanese translation (xxxiv + 862 p., 27 cm). Kawakami (1978) has summarized some soy-related portions. Iwai (1953, p. 11) notes that this dictionary was compiled by Joao Rodrigues—but this is controversial.

Soy-related terms in this dictionary, and a translation of their definitions from Portuguese, through Japanese, into English, are as follows:

Abura ague. 1. Abura agueno mono. Abura-agé [deep-fried tofu] or abura-agé mono. Things which are deep-fried in oil. Note 1. This is the earliest document seen (April 2001) that mentions fried tofu.

Aburidôfu. Slice tofu, which is made from beans like raw cheese, broil in a fire.

Amazaqe [Amazake], a still-bubbling fermented liquid that has not yet completely become sake; or sweet sake. Note 2. This is the earliest Portuguese-language document seen that mentions amazake, which it calls “Amazaque.”

Azzuqi or azzuqui [azuki beans]. “*Hus feijoes pequenos como lentilhas*” means “Beans that resemble green peas (endo). Azzuqigai is rice porridge (o-kayu) that contains azuki beans. Azzukimochi is mochi that contains azuki beans. Note 3. This is the earliest European-language document or Portuguese-language document seen (Jan. 2005) that mentions azuki beans, which it calls *Azzuqi* or *Azzuqui*.

Cabe [Kabe]. Same as tofu. A type of food which is made from ground beans. This is a woman’s word. Note 4. This is the earliest document seen (Feb. 2004) that uses the word “cabe” (or “kabe”) to refer to tofu.

Côji [Koji], a yeast used in Japan to make sake, or mixed with other things. Note 5. This is the earliest European-language document seen (July 2000) that mentions the word for koji.

Daizzu [Daizu]. Mame. Graos, ou feijoes de Iapao [grain, seed, kernel, or Japanese beans].

Dengacu [Dengaku]. Dancing monks (Bôzos). Or tofu which is skewered, and on top of each slice is spread miso;

then it is broiled.

Fanben [Hanben]. A type of food which is made by broiling tofu and simmering it with miso.

Ichchô. A way of counting some types of food, such as tofu.

Miso. A kind of mixture which is made with *graos* [grains, seeds, kernels], rice, and salt to season Japanese soups.

Note 6. This is the earliest European-language (or Portuguese-language) document seen (March 2009) that mentions miso, which it calls *Miso*.

Misocoxi [*Misokoshi*], a bamboo strainer used for straining miso. Note 7. This is the earliest document seen (Jan. 2009) that mentions a *misokoshi*.

Misoya, a shop that sells miso.

Misoyaqijiru [*Miso-yaki-jiru*], a type of soup (*Xiru*) made with tofu and finely sliced daikon radish. Note that the word tofu was written as “Tofus” in the dictionary but should be written “Tôfus.”

Misôzzu, which should properly be called Zosui, is a healing food made from vegetables, rice, miso, etc. and served to those who are old, weak, or sick. Another meaning of this term is a type of porridge [*kayu*] containing a mixture of rice, vegetables, and other things.

Nattô, a type of food made by a brief boiling of grains / seeds [*graos* is the word used, but soybeans are actually employed], which are then put into an incubation chamber (muro).

Nattôjiru, a soup (*Xiru*) made from natto. Note 8. This is the earliest Portuguese-language document seen (Feb. 2004) that mentions *natto* or *Nattôjiru*.

Saqe (sake, saké).

Tamari, a very savory liquid taken from miso which can be used for seasoning foods [when cooking] or at table. Note 9. This is the earliest document seen (Feb. 2005) that mentions tamari.

Tôfu*–Taufu. A type of food. It is made into the shape of a cheese by crushing soybeans. * Note: The sound of the Japanese character for bean (mame) is “tou.” But at that time “taufu” was the typical pronunciation. In other documents it is the same, for example the *Iitsugu Kyoki* (Iitsugu Diary) written during the Tensho period (1573–1586), with entries in 1588, 1591, and 1600. Sometimes they used the characters for “T’ang” (as T’ang dynasty in China) and “cloth,” although they were also pronounced as “taufu.” In this 1603 Portuguese dictionary there appear a number of tofu terms written in the “open sound form” (kaionke): Cabe [Kabe = wall], Dengacu [Dengaku], Fanben, Ichchô [One cho or cake of tofu], Vdondôfu, and Yudofu. One exception is the term Aburidôfu.

Tôfuya–Taufuya, a shop which makes and sells that cheese-like thing (tofu), which is made by grinding soybeans that have been soaked in water until they are soft.

Vdondôfu [Udon-dôfu]. Tofu which is made like udon (Japanese-style wheat noodles) and cooked.

Xôyu [Shoyu, or soy sauce], a liquid which corresponds to vinegar except that it is salty. It is used for seasoning foods. It is also called *sutate*. The character *su* means “bamboo mat” [as in “sudare”] and the character *taté* means “to stand up.” Note 10. This is the earliest Portuguese-language document seen (July 2006) that mentions shoyu or soy sauce, which it calls Xôyu.

Yudôfu–Yudaufu: A food made from thinly sliced tofu, served next to a *kakejiru*-type sauce [which is then poured over the top].

The following terms are not mentioned: Agé (but *aburagé* is), Daitokuji natto, Edamame (or Eda mame or Yeda mame), Fu (or gluten or wheat gluten), Hamanatto or Hamana-natto, Hiya-yakko, Kinako, Koya-dofu (or Kori-dofu), Okara, Soi*, Soj*, Shoyu, Tonyu, Unohana, Yaki-dofu, Yuba, Zoy*.

Note 11. This is the earliest dictionary of the Japanese language compiled by Europeans. It is also the earliest document seen (Feb. 2001) concerning soybeans or soybean products in connection with (but not yet in) Europe or Portugal, and the first such document to mention miso or natto.

Note 12. This is the earliest European-language (or Portuguese-language) document seen that mentions tofu, which it calls *Cabe*, *Tôfu*, or *Taufu*.

Michael Cooper (1974, p. 222-23), in his excellent biography of Rodrigues, states that in the preface to this celebrated work, the “compilers promised to produce shortly a supplement containing additional terms and words inadvertently admitted from the dictionary. The supplement appeared the following year, and the Bodelain Library, Oxford, possesses a copy of both the *Vocabulario* and its supplement bound together in one volume. The dictionary runs a formidable total of 330 folios, while the supplement extends to 71 more folios, each page carrying two columns of text. The value of this great dictionary, containing a total of 32,798 entries, is considerable.” “Whether or not Joao Rodrigues had a hand in the compilation of the *Vocabulario* is still a debatable point... Thus until further evidence appears, the identity of the principal European collaborators must remain conjectural.” Address: Nagasaki College of Japan.

91. Heo Jun [Jo, Dyun]. comp. 1613. Donguibogam [Dongui Bogam (RR), Tongui Pogam (MR)]. 25 vols. Korea: Nae-uwon. 787 p. 26 cm. Facsimile edition reprinted in 1975 by Namsandang (Seoul, Korea). [Kor]*
 • **Summary:** This is an early, important and widely known book in traditional Korean medicine. In it, the medicinal functions of doenjang are first described. It describes herbs that can be found on the Korean Peninsula. Embodying a

systematic approach, its basic theory is based on the Naegyong.

The compiler, Heo Jun, started working on the Dongui bogam in the 29th year of King Seonjo’s reign (1596) as requested by the king. The book was completed in the 2nd year of King Gwanhaegun’s reign (1610) and was published by Nae-uwon (“royal hospital”). The *Dongui Bogam* consists of 25 volumes. It was started by Heo Jun by the king’s request but was stopped because of the second Japanese invasion of Korea in 1597. After the war, the king once more ordered Heo Jun to complete the book and this time, the King allowed about 500 books kept in the national library to serve as sources of information. Heo Jun kept writing the book, but before it was completed, the king died. It was completed in the second year of his successor’s reign as the fruit of 15 years of hard work.

92. Wang Xiangjin. ed. 1621. Qunfang pu [The assembly of perfumes, or Monographs on cultivated plants]. China. Passage on soy reprinted in C.N. Li 1958 #154, p. 99, and #315, p. 227-28. [Chi]

• **Summary:** Wade-Giles reference: *Ch’iin Fang P’u*, by Wang Hsiang-Chin. Li (1958) and Bray (1984) give the date as 1621; Needham (1986) and Huang (2000) give the date as 1630. Ming dynasty. “Heavenly perfumes:” During the 8th month rains, it rained soybean flowers (*douhua*).

In the part titled “Assembly of cereals,” section No. 1 is about fertilizing the soil. Green beans are the best; azuki beans and sesame seeds are next best. It is advantageous to plant them before planting cereals. In the 7th or 8th month, plow them under. They are as effective as the droppings of silk worms or fresh manure, and are especially good for planting wheat. Note: This passage describing green manuring is found in the *Nongsang Cuoyao* (Selected essentials of agriculture, sericulture, clothing and food) (1314), and even earlier in the *Qimin Yaoshu* (Essential techniques for the subsistence of common people) (+544).

Section No. 3 titled “Black soybeans” (*heidou*) states: *Dou* is the general name for beans in the pod. The large ones are called *shu*. The little ones are called *ta*. The leaves are called *huo*.

Third lunar month: Plant black soybeans (*heidou*) and regular soybeans (*dadou*). Fifth lunar month: Plant the late varieties of regular soybeans, black soybeans, and yellow soybeans (*huangdou*). Ninth lunar month: Harvest the various mature soybeans.

Black soybeans (*heidou*): They are widely grown and the young plants (*miao*) grow to a height of 3-4 feet. The pods are several inches long, and may contain 5 or 6 beans. Some pods contain only 1-2 beans. They mature by the time of the first frost. The smaller ones are used medicinally. The larger ones can be eaten; they are used for making soy nuggets (*doushi*) or feeding animals. The flavor is raw (*sheng*) and neutral. When fried, it is considered to be a

“hot” (*re*, or “heating”) food, but when boiled it is considered to be a “cold” (*han*, or “cooling”) food. It can be used several ways. Children 10 years old or younger should not eat the fried beans together with pork; they might suffocate and die. Do not eat hemp seeds together with fried black soybeans. The leaves are called *huo* [and can be eaten]. Planting: A good time to plant soybeans is when the locust trees are free from insects. Plant sparsely in fertile soil and densely in poor soil.

Yellow soybeans: There are two varieties—large and small. You can harvest the seedlings (*miao*), the leaves, and the pods—just like the black soybeans mentioned above. The leaves are slightly lighter in color and the pods are a little fatter than those of black soybeans. The beans can be eaten as whole soybeans (*dou*), or they can be made into jiang (fermented soybean paste), soy nuggets (*doushi*), soy oil (*douyou*), or tofu (*doufu*). The residue (*zhi*, Jap: okara) from the tofu can be used to feed pigs. In times of famine, people also eat the okara. The presscake (*zhi*, “residue”) that remains after pressing out the oil (*you*) can be used as a fertilizer. The stems can be burned for fuel. The leaves are called *huo*, and when these leaves are young, they can be eaten. (Translated by H.T. Huang, PhD, Nov. 2002).

Note 1. This is the earliest document seen (Sept. 2001) concerning the use of soybean presscake (or cake—the residue from pressing out soy oil) as a fertilizer.

Note 2. This is the earliest document seen (Oct. 2001) concerning the use of okara (residue from tofu) as a feed for pigs or other animals.

Talk with H.T. Huang, PhD, expert on the history of Chinese food and agriculture. 2001. July 10. What is the difference between eating (*doumiao*) and (*huo*)? In antiquity in China, soybean leaves (*hou*) were sometimes used to make soup. These leaves were typically picked when the plant was still green but fairly large and mature; the plant was probably not uprooted, but continued to grow. On the other hand, the soybean seedlings (*doumiao*) were uprooted when they were still quite young, and the leaves were more tender. These tender leaves were prepared differently and eaten as a succulent vegetable. (*Doumiao*) is served today as a dish in Chinese restaurants, yet Dr. Huang has never seen it mentioned for use as a vegetable the early Chinese food literature—say before the year 1500. By contrast, Dr. Huang has never seen soybean leaves (*huo*) served as a dish in Chinese restaurants but they are mentioned in the earliest Chinese literature (*Book of Odes / Shih Ching*, 7th to 10th century B.C.).

H.T. Huang (2000, p. 456n) states that the sunflower (*xiangri kui*) originated in North America and was introduced to Europe in about 1510. In China, it first appeared in this 1621 book.

Wang Lianzheng (1987, p. 246) states that the sunflower is first mentioned in China in this book, where it is called *wenju* (“gentle chrysanthemum”) and *ying yang hua*

(“facing sunlight flower”). Today, sunflowers are an important oil crop in northern China.

93. Song Yingxing. 1637. *Tiangong kaiwu* [Exploitation of the works of nature]. China. Passage on soy reprinted in C.N. Li 1958 #160, p. 103-08. [Chi]

• **Summary:** Wade-Giles reference: *T'ien Kung K'ai Wu*, by Sung Ying-Hsing. Ming dynasty. For English-language translations of the entire book see: (1) E.-Z. Sun and S.-C. Sun (1966), and (2) Li Chiao-P'ing et al. (1980).

In the section titled “General names” the soybean (*shu*) is mentioned as one of the “five grains.”

The long section titled “legumes” (*shu*) notes that one of the many types of Chinese legumes is the soybean (*dadou*) of which there are two colors: black (*heidou*) and yellow (*huangdou*). Different varieties, their time of planting and harvest, and uses are discussed. North of the Huai River, black soybeans are fed to horses and mules that are used on long journeys. All types of jiang, sauce, and curds [tofu] made from beans are made from the soybean.

The chapter on “Vegetable oils and fats” notes that the oil of yellow soybeans is one of the best for eating; from each *tan* of yellow soybeans, 9 catties of oil is obtained. In Jiangsu (W.-G. Kiangsu) soybean oil is used as food for humans, and the meal cakes are fed to pigs. For more details, see the two English-language translations cited above.

Huang (2000, p. 444-45, 447, 450-52) cites and quotes from this book. See also Bray (1984, p. 513n, 518, 631, 707).

Letter from H.T. Huang, PhD, expert on the history of Chinese food and agriculture. 1994. May 10. This famous work on Chinese technology is one of the few post-Han Chinese documents that contains information about *Li*, the early Chinese forerunner of Japanese amazake. It states in Chapter 17: “In ancient times, *qu* (rice koji) was used for making wine (*jiu*) and *nie* (malt) for making sweet wine (*li*). In later times the manufacture of sweet wine was discontinued because its flavor was thought to be too weak, and the art of using malt [to make *li*] was consequently lost.” (Dr. Huang’s translation).

Note 1. This is the earliest document seen (Aug. 2002) that mentions soybean cake or meal.

Perkins (1969) says in a footnote on p. 71: “Beancake is not mentioned in the *Nung shu* (1313 ed.). The first reference of which I am aware is referred to in the Ch'en Tsu-kuei (1958, p. 99). It is also mentioned in Hsu Kuang-ch'i, 1628, and in the *T'ien-kung k'ai-wu*, both seventeenth-century publications.”

E.-Z. Sun and S.-C. Sun, trans. and ed. (1966). *T'ien-Kung K'ai-Wu, Chinese Technology in the Seventeenth Century*. University Park & London: Pennsylvania State University Press. Chapter 12, titled “Vegetable oils and fats” states (p. 215-16): “For eating, the oils of sesame seeds,

turnip seeds, yellow soy beans, and cabbage... seeds are the best.” Next in quality come perilla and rape-seed oil. The yield of oil (in catties per *tan*) is given for many Chinese oilseeds. The two oilseeds with the lowest / worst yields of oil are: cotton seeds 7, and yellow soy beans 9. By contrast, sesame, castor, and camphor seeds yield 40 and rape seeds yield 30-40.

Platt (1956, p. 835) notes: The second volume of this 1637 work “is devoted to oils and fats. From this work it may be deduced (according to information supplied by Dr. G.D. Lu) that the soya bean was grown for its oil as early as the third century A.D. The yield of oil reported at this time was 9 catties per picul of oil seeds; since a picul is a hundred catties it means that, using a simple press, 9% of oil was extracted. [Note 2. 1 picul = 133.3 pounds weight. This is about as much as one man with a yoke can carry]. It may be of interest to those concerned with animal nutrition that the press cake at that time was fed to pigs, or used as fertilizer... The fighting horses and donkeys had to be fed with the black soya bean in order to increase their endurance and muscular power.”

Hagerty (1917): This 17th century work on Chinese technology contains extensive information on soybeans, translated by Hagerty.

Note 3. This is the earliest document seen (Nov. 2005) that mentions cotton seed oil.

Note 4. This is the earliest document seen (March 2005) that mentions both rapeseed (or rapeseed oil, *chaiyou*) and soybean oil. See also Huang 2000 (p. 447-53, 456).

94. Yangming yueyi [Monthly activities to nurture the people]. 1640? China. Passage on soy reprinted in C.N. Li 1958 #321, p. 229-30. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Yang Ming Yüeh I*. Author unknown. Probably late Ming dynasty. Some of the information on soybeans is quite similar to that in the *Yangyu Yueling* (Monthly ordinances for superabundance) (1640); it is not clear which appeared first.

The section titled “Third lunar month planting soybeans” states: Plant early in the third month, when the apricot (*xing*) flowers are in bloom and the mulberry leaves are just starting to turn red. You can plant until the 20th day of summer. Plant sparsely in fertile soil and densely in poor soil. Remove weeds as soon as the seedlings emerge. When the pods (*jia*) turn red [reddish-brown at maturity] and the stems are white, then its time to harvest. Plant the soybeans when there are no insects on the locust trees. Avoid planting on *shen* days; plant on *mou* days. Note: *Shen* and *mou* are days in the Chinese calendar following the 10 Celestial Stems and 12 Earthly Branches System.

The section titled “Planting black soybeans” (*heidou*). Plant in fertile, well-plowed soil. Take a handful of seeds, then broadcast one handful as you take each step. When the seedlings emerge, remove weeds. It’s best if there are no

weeds. You can also plant black soybeans in the fourth lunar month. The beans can be used for making jiang and as feed for horses. The stems can be burned for fuel. The beans can be sold by the company named *Guo* in the city. (Translated by H.T. Huang, PhD, Feb. 2003). Dr. Huang adds (half jokingly): The scholar who wrote this book is probably related to or employed by the owners of the *Guo* company. We are not told in what city this company exists.

Note: This is the earliest document seen (Feb. 2003) that mentions a commercial outlet for whole soybeans (used as a cash crop) or that gives the name of a company which resells soybeans.

95. Ginnaro, Bernardino. 1641. Saverio Orientale, o vero Istorie de Cristiani [Oriental Xavier, or the true history of Christianity]. Naples, Italy. With engraved title page and folded map. [Ita]*

• **Summary:** In Book 1, Chapter 13, p. 49, is a description of miso and miso soup (*shiru*). “*Misso: che è una pasta ammassata ri riso, faivoli, o vero ceci corrotti, con frumento cotto, e notabile quantità di sale, che per lungo tempo si conserva, e ridotta poscia in polvere, rende el brodo ove si mescola simile alla salamoia, da cui vene sluzzicato P appetito di mangiare il riso.*”

Note: This is the earliest Italian-language document seen (March 2009) that mentions miso, which it calls *Misso*.

96. Ryōri monogatari [The story of cooking]. 1643. Japan. [Jap]*

• **Summary:** This famous printed book by an unknown author is the earliest Japanese book that specialized in cooking. Therefore it was widely quoted in many subsequent cookbooks. Recipes include miso soup and taremiso. The names of the volumes include *Ryori Taikan*, *Nihon Ryori Taikan*, *Zokugun Shoruiju Inshokubu*, *Shokumotsu Koza*.

Note: This is the earliest document seen worldwide, and the earliest Japanese-language document seen (Jan. 2008) that mentions dried-frozen tofu or frozen tofu, which it calls *kōri-dōfu*. Miyashita, who cited this early reference, gave the book’s date as 1624.

In the section on “Foods, Sake,” is a section on “Quick preparation of amazake. Wash 1 *sho* (1.8 liters) of cooked and dried glutinous rice (*domyoji*) in hot water and drain. Mix in 1 *sho* of koji and 1.5 *sho* of water; grind in a suribachi very well. Strain in a strainer (*suino*), then simmer in a pot, while stirring. It will become good amazake. Adding white sugar is good.”

In the section titled “Man Kiki Gaki” is a description of “How to make Shirokawa Amazake. Crack by grinding 3 *sho* white rice, steam well and cool. Mix in 5 *sho* of koji, 5 *sho* of water, and knead well. Strain in a strainer (*suino*). Discard the pulp and keep the liquid to make amazake. Mix

it occasionally. In summer it takes 3 days and in winter 5 days until it is ready.”

97. **Product Name:** [Hatcho Miso].

Foreign Name: Hatchô Miso.

Manufacturer's Name: Hayakawa Kyuemon Shoten (Also called Hatcho Miso Kakkyu Goshi-kaisha).

Manufacturer's Address: Aza, Okan-dori 69, Hatcho-cho, Okazaki-shi, Aichi-ken 444, Japan.

Date of Introduction: 1645.

New Product–Documentation: Kaneko. 1972. Hatcho Miso; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 223, 256. The company claims that it was established in 1362, but other evidence indicates that it was established in the late 1500s or 1600s.

Letter from Tsuneo Hayakawa. 1992. March 17. He is studying the company's early history. Most early documents, written during the Edo period (1868-1912) state that the company was established in 1645. A death register, which had been kept in the Buddhist temple where his ancestors' tombs stand, supports this view.

Note: This is the earliest known commercial soy product (with a brand name) made in Japan (Jan. 2007; one of two products).

98. Yorozu kikigaki hidden [Secrets of things heard and written]. 1650. Japan: Publisher unknown. 102 p. 2 volumes. Japanese summary by Kawakami 1978, p. 158. [Jap]

• **Summary:** Within the 54 sections, 34 sections concern food preparation, preservation, etc. Includes how to make shoyu, natto, dried-frozen tofu (kori-dofu), and miso. Between 1650-1673, nine printings were made. Each successive publication became more compact and more popular.

99. Nattô monogatari [The story of natto]. 1650? Japan. [Jap]*

• **Summary:** Contains a recipe for Natto Miso Soup (*Nattô Jiru*).

100. Keijser, Jacob; Grevenraet, Joannes; Brummel, Luder; Baron, Henrick. 1652. [Re: Request for provisions for the settlement]. Letter to Adriaen van der Burch, director of commerce at the Deshima factory [Nagasaki, Kyushu, southern Japan], Aug. 14. p. 93-100. See p. 98-99. Handwritten, with signature. [Dut]

• **Summary:** This request includes: 80 to 90 kegs of good sake (*balijen goede sackij*). 50 piculs of wheat meal. 150 bales of white rice for the settlement and the ships. 70 bales of little beans (*boontjens*) for the settlement and the ships. 40 bales of peanuts (*cadjangh*) for the settlement and the ships. 10 bales of barley for the settlement and the ships. 16 pots of round rusk. 4 pots with sugarloaf. 25 piculs of

smoked hams. 2 kegs of mustard seed. 4 kegs of miso (*misio*). preserved with pickled vegetables (*connemonne [kô-no-mono]*). 15 kegs soy [sauce] (*soije*) and 16 pieces of dried katsuo (*caetchio [katsuobushi]*). 2 pots with various Japanese candied fruits to treat native leaders. As much rice as they need before they are back in Japan, because wheat is expensive in Tonkin.

Bibliographic reference in Dutch: NA, NFJ 285, ontvangen brieven (14-8-1652) 93-100. On microfilm.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 285 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 284].

Note 1. Henrick Creijers = Hendrick Craijers. Note 2. 1 picul is about 125 pounds, the amount a man can carry with a yoke.

Note 3. This is the earliest Dutch-language document seen (March 2009) that mentions miso, which it calls “misio.” Address: Written on the ship Taiwan moored on the river of Tonkin [in today's north Vietnam] before the bar.

101. Caesar, Cornelius. 1654. [Re: Order for provisions]. Letter to Honourable Hapart at the Deshima factory [Nagasaki, Kyushu, southern Japan], July 18. p. 46-56. See p. 53. Handwritten, with signature. [Dut]

• **Summary:** This order for provisions includes: 25 smoked hams, 4 kegs of miso (*4 balies miso*), 4 kegs of soy [sauce] (*4 ditos soijo*), 6 large kegs of the very finest pickled vegetables (*connemon van de alderbeste*), 25 bales of white stamped rice.

Note: This is the earliest Dutch-language document seen (March 2009) that uses the word “miso” to refer to miso.

Bibliographic reference in Dutch: NA, NFJ 286, ontvangen brieven (16-7-1654). On microfilm.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 286 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 286].

Note: About the sender: In *Pieter van Dam's Beschryvinghe van de Oostindische Compagnie*, by F.W. Stapel is an entry for Cornelius Ceasar. In 1609 he was born in Goes, a commune in Zeeland province, southwest Netherlands. By 1635 he was already a merchant in the VOC service. In 1636 and 1637 he was a merchant in Quinam [Cochin China]. Then he was a merchant in Taiwan and in Japan. In 1641 he became supreme merchant. From 1646-1651 he was back in Holland. In 1651 he became Council of Justice in Batavia. From 1653 to 1656 he was

Governor of Formosa. In 1657 he died in Batavia. This letter is a contemporary handwritten copy, in a letter-book for the administration on Deshima. Address: Governor of Taiwan and the Council of Formosa.

102. Coijett, Fredrick; Schedel, Fredrick; Dammans, R.; Alphen, Pieter van; Pedel, Thomas. 1655. [Re: List of provisions ordered]. Letter to Honourable Leonard Winnix on Deshima (Nagasaki, Japan), Aug. 3. p. 1-13. See p. 8. Handwritten, with signature. [Dut]

• **Summary:** In this letter (p. 8) is an order for provisions: 12 Japanese hams. 25 bales of white stamped rice. 6 kegs of good pickled vegetables (*connemon [kô-no-mono]*). 4 kegs of miso (*Balijen Miso*). 4 kegs of soy [sauce] (*Soija*). 4 bales of buckwheat. 8 Japanese room-mats (*camermatten*). 5 to 6 ordinary tea kettles.

Bibliographic reference in Dutch: NA, NFJ 287, ontvangen brieven (3-8-1655) 1-13. On microfilm.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 287 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 287].

Note: This is the earliest Dutch-language document seen (June 2007) that uses the word “Soija” to refer to soy sauce. This soon became by far the most widely used spelling of the word in Dutch. “Soije” was a distant second. Address: Fort Zeeland (Casteel Zeelandia) on Taiwan.

103. Coijett, Fredrick; Schedel, Fredrick; Dammans, Reijnier; Pedel, Thomas; Valentijn, Jacobus. 1657. [Re: List of provisions ordered]. Letter to [illegible] on Deshima (Nagasaki, Japan), Aug. 3. p. 1-5. See p. 4. Handwritten, with signature. [Dut]

• **Summary:** In this letter (p. 8) is an order for provisions: With the return ships, you must send for the use of this settlement and otherwise the following: 10 to 12,000 bales of new rice. 500 bales of wheat. 800 pairs of cotton dress coats for the for the slaves of the factory based on the model / pattern sent with the skipper of the *Domburgh / Domburg*; they must be more suitable than the last ones. 150 piculs [1 picul = about 125 lb] of good Japanese tobacco, to fill all cargo space available. 20 bales of white stamped rice. 8 hams. 6 kegs of pickled vegetables (*connemonne [kô-no-mono]*). 6 kegs of good sake (*sackie*). 3 kegs of miso (*missouw*). 3 kegs of soy [sauce] (*soija*). 2 pairs of scales [for weighing] with their accessories.

Note: This is the earliest Dutch-language document seen (March 2009) that uses the word “missouw” to refer to miso.

Bibliographic reference in Dutch: NA, NFJ 288, ontvangen brieven (8-7-1657) 1-5. On microfilm. Received

19 July 1657. Sent with the ship *Domburgh / Domburg*.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 288 [National Archives, Prins Wilhem Alexanderhof 20, The Hague.

www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 288]. Address: Fort Zeeland (Casteel Zeelandia) on Taiwan.

104. Coijet, Fredrik; Oetgens, Johan; Pedel, Thomas; van Iperen, Thomas; Harthouwer, D. 1658. Lijst met handelswaar [Re: List of commodities ordered]. Letter to Joan Boucklejou on Deshima (Nagasaki, Japan), July 30. p. 25-33. See p. 28. Handwritten, with signature. [Dut]

• **Summary:** In this letter (p. 28) is an order for provisions: “20 bags of white stamped rice. 6 kegs of pickled vegetables (6: *balien connemonne [kô-no-mono]*). 3 kegs of miso (*missoe*). 3 kegs of soy sauce (*soija*). 3 kegs of umeboshi (*mebos* [salt pickled plums]). 6 kegs of sake (*sackij*). 12 pieces of smoked ham.” Also information about copper weights. On p. 33 are the names of the writers.

Note 1. This is the earliest Dutch-language document seen (March 2009) that uses the word “missoe” to refer to miso.

Note 2. This is the earliest document seen (Dec. 2006) concerning umeboshi salt plums.

Bibliographic reference in Dutch: NA, NFJ 289, ontvangen brieven (30-7-1658) 28. On microfilm.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 289 [National Archives, Prins Wilhem Alexanderhof 20, The Hague.

www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 289].

Note 1. This is probably a list of goods for Goijet’s table, because he requested the same sort and amount of provisions on 7 Aug. 1659. Address: Governor of Formosa, Fort Zeelandia (Casteel Zeelandia) on Formosa [in today’s Taiwan].

105. Coijet, Fredrik; Oetgens, Johan; Pedel, Thomas; van Iperen, Thomas; Harthouwer, David. 1659. Des provisen voor de Tafel van den Gouverneur [Re: Order of provisions for the governor’s table]. Letter to Wagenaar, head of the trading station, Nagasaki (*opperhoofd en den Raadt des Nagasakkisen Comptoir*) [Deshima, in Kyushu, southern Japan] and the councillors of this place, Aug. 7. p. 40-41. See p. 41. Handwritten, with signature. [Dut]

• **Summary:** In the postscript of this letter (p. 41) is an “order for provisions for the Governor’s table. Will Your Excellency please send us: 6 kegs of pickled vegetables (6: *balien connemonne [kô-no-mono]*). 3 little kegs (*balitjes*) of the best soy sauce (*soija*). 2 kegs of miso (*missoe*). 1 keg of

umeboshi (*mebos* [salt pickled plums]). 6 kegs of good sardines (*sardeijn*), mostly little ones. 20 pieces of smoked ham. 6 pieces *songuats* fishes. 50 sets of three finest dishes or plates of a certain size (*drielingen*). 30 sets of four finest dishes or plates of a certain size (*quarten [kwarten]*). 100 fine flat dishes (*pieringen*). 50 fine flat dishes (*pieringen*) of the smallest.” At the end of the postscript are the names of the writers.

Bibliographic reference in Dutch: NA, NFJ 290, ontvangen brieven (7-8-1659) 41. On microfilm.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 290 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 290]. Address: Governor of Formosa, Fort Zeelandia (Casteel Zeelandia) on Formosa [in today's Taiwan].

106. Product Name: [Miso].

Foreign Name: Miso.

Manufacturer's Name: Mogi Shichizaemon I.

Manufacturer's Address: Noda, Japan.

Date of Introduction: 1662.

New Product–Documentation: Mark Fruin. 1983.

Kikkoman: Company, Clan, and Community. p. 16. In 1662 Mogi Shichizaemon started with the manufacture of miso, the rice or soybean paste similar to shoyu in fermentation technology. This is the earliest known soyfood product made by a member of the Mogi family, whose descendants now run Kikkoman.

107. Shiomisaka, Baian (Umean). 1668. Ryōri anbai-shū [Collected cooking instructions]. Japan: Publisher unknown. 120 p. Japanese summary by Kawakami 1978, p. 159. [Jap] • **Summary:** The 21 sections include sections on miso (there are many miso soups) and tofu. Perhaps miso soup became popular at about this time.

108. Pavilioen, Anthonio; Caulier, Jaques; Carpentier, Roelant d'; Broeck, Pieter van den; Duijcker, Hendrick; Outhoorn, Hendrick van; Sonhuis, Johan B.; Huijsman, Johannes. 1669. [Re: Order for provisions]. Letter to Governor-General Joan Maetsuyker [Maasuijcker] and the Councillors of the [Dutch East] Indies [Heren Raden van Indië] in Batavia [Dutch East Indies], Feb. 1. p. 424-35. See p. 433r. Handwritten, with signatures. [Dut]

• **Summary:** This order for provisions includes: “30 kegs sake (*sakkij*), 12 kegs of soy [sauce] (*balije soija*), 12 kegs of miso (*missoe*).”

Bibliographic reference in Dutch: NA, VOC 1270, OBP (1-2-1669) 424r-435vo. On microfilm. This letter is part of the correspondence in the series *Overgekomen Brieven en Papieren* (OBP)—letters and papers sent from Batavia and

other factories to the headquarters of the VOC in the Netherlands. This is an important and voluminous part of the VOC archive.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.02; inventaris nummer 1270, 424r t/m 435va. [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.02; record number 1270].

About the sender: In *Pieter van Dam's Beschryvinghe van de Oostindische Compagnie*, by F.W. Stapel is an entry for Anthonio Paviljoen. From 1659 to 1665 he was commander of Jaffanapatnam in Ceylon. From 1665 to 1676 he was governor (head) of the VOC's settlements on the Coromandel Coast, along the east coast of southern India. From 1668 he was extraordinary councillor and from 1676 to 1678 ordinary councillor of the Council of the Indies (*Heren Raden van Indië*). In 1678 he was fired by the Heren XVII.

Nagapatnam (Now {2007} usually spelled Nagapattinam, formerly Negapatnam, Nagappattinam), which was one of these settlements on the Coromandel Coast, in today's southeast Tamil Nadu, 160 miles (275 km) south of Madras. It was occupied by the Dutch from 1660 to 1781.

About the recipient: In 1635 Joan Maetsuyker was appointed pensionary (*pensionaris*) to the Council of Justice of Batavia, in 1646 councillor of the Council of the Indies, from 1646 to 1650 governor of Ceylon and from 1653 to 1678 governor-general.

Note 3. Paliacatta (also spelled Paliacatte; today's Pulicat), long the chief Dutch settlement and headquarters of the VOC factories on the Coromandel Coast, was a Dutch post from 1610. Pulicat was a small walled town on the coast. At its center was the Dutch Fort Geldria, with its permanent garrison of soldiers, and its cannon and armory to protect the various Company trading posts along the Coromandel Coast. Inside the fortress was the governor's two-story residence, magnificent and solidly constructed. Pulicat became British in 1825. It is located in today's Tamil Nadu, at the south end of Pulicat Lake.

This letter has been collated into Casteel Geldria (Fort Geldria) in Palliacatta on 1 Nov. 1670 by Joannes Huijsman, the secretary. Address: Fort Geldria, Palliacatta / Paliacatta [in today's southern India].

109. Pavilioen, Anthonio; Meersche, Jacob van der; Welsingh, Isaac; Exbusier, Jacob; Buijtendijck, Reijnier van; Hervendoncq, Joris. 1670. [Re: Order for goods from Batavia for use by the Honorable Dutch East India Company in Nagapatnam]. Letter to Governor-General Joan Maatsuijcker [Maetsuyker] and the Councillors of the Indies [Heren Raden van Indië] in Batavia [Dutch East Indies],

Feb. 13. p. 550r to 574r. See p. 572r. Handwritten, with signatures. [Dut]

• **Summary:** On p. 572r (the recto {front} of folio {page} 572) we read: “Our order for commodities and other items for the use of the Honorable Company. Gold from Japan and from other places with which Coromandel has commerce each year. A list of merchandise: 8 little pints (*pintjes*) of fine oil of cloves, cinnamon, mace, etc. 12 *leggers* (a legger is a large keg of 400 liters capacity) of Spanish wine. 20 kegs of Mum. 2 kegs of good Dutch butter. 20 *leggers* of wine-vinegar. 9 aums (an aum is a keg of 153.6 liters capacity) of good olive oil. 30 kegs of sake (*Zakkij*) from Japan. 12 kegs of soy [sauce] (*baliën Soija*) from Japan. 6 kegs of miso (*missoe*) from Japan.

Bibliographic reference in Dutch: NA, VOC 1274, BBP (13-7-1670) 550r-574r. On microfilm.

This letter has been collated into Casteel Geldria (Fort Geldria, the headquarters of the VOC factories on the Coromandel Coast) in Palliacatta on 1 Nov. 1670 by Joannes Huijsman, the secretary. The letter is part of a thick bundle of correspondence in the series *Overgekomen Brieven en Papieren* (Letters and papers sent from Batavia and other factories to the headquarters of the VOC in the Netherlands).

This long letter is about management and commerce. The first three folios discuss ships that have arrived. Two folios deal with a political question in the area around Masulipatnam. Folios 552 to 562 discuss merchandise supplied from several districts to Nagapatnam by ship and from the interior, and commerce problems in some districts. Folio 563 is about the weight of the coin used in Pulicat. Folio 565 is about timber. Etc.

Location: Nationaal Archief, Den Haag, De Archieven van de Verenigde Oost-Indische Compagnie (VOC); toegangsnummer 1.04.02: inventaris nummer 1274, folios 550-574 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch East India Company (VOC); inventory number 1.04.02: record number 1274, folios / pages 550-574]. Address: Fortified town of Nagapatnam [in today’s southern India].

110. Hoorn, J. van. 1676. [Re: Order for provisions]. Letter to the Deshima factory [Nagasaki, Kyushu, southern Japan], June 30. Unpaginated Handwritten, with signature. [Dut]

• **Summary:** “General request for merchandise and necessities, which are required from Japan this year for several settlements in Asia as for the fatherland (*vaderlandt* / *patria*).

For Batavia: 100 kegs of several provisions such as: 40 kegs sake (*sackij*), 20 kegs soy [sauce] (*Soija*), 15 kegs pickled vegetables (*connemon* [*konmono*]), 10 kegs salted, pickled plums (*meboos* [*umeboshi*]), 10 kegs miso (*missauw*).

For Ceylon (*Chijlon*): 48 kegs of provisions as follows: 20 kegs of good sake, 12 kegs soy [sauce] (*Soija*), 8 kegs pickled vegetables, 4 kegs salted, pickled plums [*umeboshi*], 4 kegs *ameneranskij*.

For Coromandel (*Choromandel*): As many kegs of Japanese provisions as is specified hereafter for Bengal.

For Bengal: 17 kegs of provisions as: 6 kegs sake, 4 kegs soy [sauce], 3 kegs pickled vegetables, 2 kegs *Ameneranskij*, 2 kegs salted, pickled plums [*umeboshi*].

For Malacca: Provisions: 2 kegs each of Soy (*Soija*), pickled vegetables, miso (*missouw*), salted, pickled plums [*umeboshi*], and *ameneranskij*.

For Surat (*Zuratta*): 9 kegs of provisions such as sake, pickled vegetables, and soy [sauce] (*Soija*).

Bibliographic reference in Dutch: NA, NFJ 307, ontvangen brieven (30-6-1676). On microfilm.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 355 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 355. The pages are not numbered]. This letter is written in a letter-book for the administration on Deshima.

Note 1. It seems that soy [sauce] is always mentioned in lists of provisions for the table of VOC governors or directors, and their guests; this was written in one letter (see Coijet 1659, Aug. 7).

Note 2. This is a special letter. Part of it contains information from a letter written in the Netherlands by the directors in Holland (Heren XVII). The rest of the information comes from settlements in Asia and was collected and written in Batavia, then sent to Japan. Address: Batavia castle (Batavia in’t Kasteel) [today’s Jakarta, Indonesia].

111. Goens, R. van; Speelman, Cornelius; Both, Balthasar; Hurrt, Anth.; Blom, Dirk; Outhoorn, W. van; Camphuijs, Joan. 1680. [Re: Sending sake and soy sauce in casks and pots]. Letter to the Deshima factory [Nagasaki, Kyushu, southern Japan], June 30. Unpaginated. Handwritten, with signature. [Dut]

• **Summary:** Van Goens etc. request that the sake (*sakij*) and soy [sauce] (*soije*) be poured into well-made casks before shipping. They advise for sake and soy [sauce] as well as for pickled vegetables (*konnemon* [*kô-no-mono*]), *umeboshi* (*mebos*, [salt pickled plums]), etc. to send them in pots (*potten*). Every pot must be placed in a keg and the space between the pot and the keg must be filled up with straw, so there is no danger of the pots breaking in the kegs.

Van Goens etc. will send pots made in the Netherlands for the shipping of the sake and soy [sauce]. At Coromandel [on the coast of southeast India] the merchants are annoyed

at the bad quality of the sake in the kegs; this is caused by the native wood of which the kegs are made.

Another summary (by Cynthia Viallé): “Batavia informs Deshima that it is sending Dutch tubs to hold the sake and soy [sauce]. The tubs should be cleaned first and prepared to contain the sake and soy.”

An appendix to this letter: For Batavia: Four aums of Soy [sauce] in aums and half aums [Note: 1 aum is a measure of capacity (a barrel) of about 177 liters]. Twenty pots put in kegs with pickled vegetables (*konnemon*) and miso (*missou*). Twelve pots of umeboshi as before with fruits. If possible we want them as good as the Japanese send to their friends who live in Batavia, because those are better than the fruits they usually send to us.

For Coromandel: 6 quarter kegs of miso (*missouw*). 10 kegs of Soy [sauce] (*Zoija*). 10 kegs of pickled vegetables. 12 double kegs of saké (*Zackij*). 10 kegs of *omenaranski* [meaning unclear], 4 kegs of umeboshi.

For Ceylon [today's Sri Lanka]: 15 single kegs of Soy [sauce]. 6 double kegs of saké (*sackij*). 12 kegs of pickled vegetables. 20 kegs of umeboshi. 12 kegs *omenaranski* [meaning unclear], 6 kegs of miso (*missouw*).

Bibliographic reference in Dutch: NA, NFJ 311, ontvangen brieven (30-6-1680). On microfilm. The first page of this letter is torn off.

About the sender: Rijckloff van Goens lived 1619-1682. In 1631 he began his service (as a boy) in the VOC (Dutch East India Company). In 1655 he returned home to the Netherlands. In 1656 he was appointed to the extraordinary Council of India (the Dutch East Indies). From 1660 he was governor of Ceylon. From 1675-1678 he was director-general in Batavia, and after that until 1681 he was governor-general. He died in Nov. 1682 at home in the Netherlands.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); inventaris nummer 311 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); record number 311]. Address: In the castle (*kasteel*) Batavia [today's Jakarta, Indonesia].

112. Shixian hongmi [Guide to the mysteries of cuisine]. 1680. China. Passage on soy reprinted in H.T. Huang 2000, p. 325-27. [Chi]

• **Summary:** Wade-Giles reference: *Shih Hsien Hung Mi*. H.T. Huang (2000, p. 623) states that this book is attributed to Wang Shizhen (Wade-Giles: Wang Shih-Chên) but more probably was written by Zhu Yizun (W-G: Chu I-Tsun).

Huang states (p. 324) that frozen tofu (*dong doufu*; W.-G. *tung toufu*) is first mentioned in Chinese in this work. The section titled “Frozen tofu” states: In the depths of winter, place a cake of tofu (*doufu*) outdoors in a basin of water overnight. The water will freeze even though the tofu

itself may not. However the beany flavor will be lost in the water, leaving the flavor of the tofu much improved. Another way is to freeze the tofu itself without the water. When thawed, it will look like a little beehive. Wash it well. Heat it in a soup base or fry it in oil. It will be an unusual dish regardless of how it is cooked. Huang adds that this same description of the process is repeated in the *Yang Xiaolu* (1698). Note: Dr. Huang states (March 2004) that the term *dong doufu* almost always refers to tofu that has been frozen, then thawed and dried. However he has never seen an early description of how it was thawed and dried. In addition, he has never heard the term *bing doufu* (“ice tofu”), meaning “frozen tofu.”

Huang (2000) states (p. 325) that pressed tofu (*doufugan*, “tofu + dry”) is first mentioned indirectly in this work in connection with the preparation of smoked tofu (*xun doufu*; W.-G. *hsiün toufu*), which is first mentioned in Chinese in this 1680 book. The section titled “Smoked tofu” states: Press tofu until it is as dry as possible. Soak it in brine, wash well, then dry it in the sun [to give *doufugan*]. Spread sesame oil over the surface, then smoke it. Another method is to soak tofu in brine, wash well, then dry it in the sun. Boil it in soup stock, then smoke it.

When William Shurtleff saw pressed tofu (*doufugan*) prepared in Taiwan and China during the 1970s, it was always pressed using either a hand-turned screw press or a lever-press with huge stones. He never saw it being dried in the sun. Perhaps the efficiency of the screw press in removing moisture from the tofu made the sun-drying unnecessary. Note that sun-drying takes extra time and exposes the warm tofu to unwanted microorganisms.

Huang (2000, p. 326) translates the earliest known account of making fermented tofu*: To make Fujian (W.-G. Fukien) style fermented tofu (*doufuru*, W.-G. *tou fu ju*), press tofu until it contains a little moisture as possible or wrap it in fine cotton paper and desiccate it in fresh ashes. Cut cake into thick square pieces and place them in rows on a bamboo steamer pad. After all steamer tiers are filled, cover steamer. [The best time to make it] is in the 2nd or 3rd month in spring or 9th or 10th month in autumn. Place steamer in an airy place. After 5 or 6 days, surfaces [of tofu] will be covered with a hairy growth, which may gradually turn black or greenish red. Wipe hair off tofu squares with a piece of paper. Save it, making sure not to damage the skin. For [the tofu from] each *dou* of beans, prepare 3 catties of soy sauce and 1 catty of fried salt. (If soy sauce is not available, use 5 catties of salt.) Grind 8 ounces of fresh red ferment spiced with clean peppercorn, fennel and licorice, then mix powder with salt and wine. Place tofu in a jar, add wine sauce mixture, then seal mouth of urn with clay. Allow urn to stand for 6 months; an excellent flavour will result.”

(Footnote: *The original passage is interspersed with notes that describe a variation of the process as it was practiced in Zhejiang (W.-G. Chekiang). These notes make

the text somewhat confusing to read, so they were left out in the translation. However, from these notes we can reconstruct the Zhejiang process follows: After the steamer is filled with tofu squares, steamed them. Place steamer, while still hot, on a bed of rice straw and cover completely with rice husks—in a place with little air movement. Remove tofu squares after 5-6 days. Press down and flatten the hairy growth. [This will help to keep the product fresh.] Then layer the squares in a jar. Sprinkle a pinch of salt on each piece of tofu until all surfaces are evenly salted. For each layer of tofu there should be a layer of salt. When salt is dissolved, each piece is heated in the sun by day and marinated in sauce mixture [as indicated in the Fujian process]. Continue sunning and marinating until all sauce is used up. Soak layered tofu in a jar with wine. Then seal mouth of urn with clay. Allow the urn to stand for 6 months and an excellent flavour will result).

Note: This is the earliest document seen (Feb. 2007) that mentions fermented tofu, which it calls *doufuru*.

Huang (2000, p. 326) continues by noting: Two other passages in the *Shixian Hongmi* are also of interest in this connection. One describes a method for making *zao rufu* (W.-G. *tsao ju fu*), i.e. fermented tofu (*furu*) aged with a fermented mash [rice wine dregs]: Transfer ripened *rufu* or samples that are too salty in layers to a new vessel. Line fermented mash or residue between layers and allow material to age. A product with a unique flavor is obtained. The other deals with the making of *doufu fu* (W.-G. *tou fu fu*), a deep fried ‘stinky’ dewatered tofu: Take good quality [pieces of] tofu and grill in oil. Then cover with a cloth screen to keep out flies and other insects. When a “stinky” odour is developed, fry the pieces again in hot “boiling” oil. The flavor is excellent.

Huang (2000, p. 326-27) comments further: Two interesting points emerge from these passages. First, by the time that the *Shixian Hongmi* (+1680) was published, *furu* and *rufu* had apparently become synonyms for fermented tofu. The word *fu* could now mean a gel or custard made from any edible suspension or emulsion of food material, and *ru* any type of dairy or soy milk derived product. Second, although the word *zha* (W.-G. *cha*) was not used, there is no question that the frying in “boiling oil” shown in the second passage indicates that deep frying was a common method of cookery during the Ming dynasty.

Huang (2000, p. 341) states that this book contains an interesting recipe in which soy nuggets (*shi*) are stewed with pieces of pressed tofu (*doufugan*) and bamboo shoots.

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Seasonings based on *jiang* (fermented soybean paste) are used in 49 recipes: *jiang* itself in only 8, soy sauce made from *jiang* named *qingjiang* in 1 recipe, soy sauce named *jiangyou* in a whopping 37 recipes, soy sauce named *jiangzhi* in 2 recipes, and soy sauce named *jiangshui*

in one recipe. Seasonings based on soy nuggets (*shi*) are used in only 6 recipes: Soy nuggets (*shi*) in 4 recipes, and soy nugget sauce named *shizhi* in 2.

Talk with H.T. Huang. 2001. Feb. 20. This 1680 book contains a recipe titled Soy Sauce Pressed Tofu (*Jiangyou Fugan*) which states: Cut pressed tofu (*doufugan*) into pieces. Mix 1 catty of soy sauce with 2 catties of water. Filter the liquid mixture then boil it. Filter it again to remove any remaining residue. Now add to the liquid: mushrooms and 4 different spices (*dingxiang*, *baiqi*, *dahuixiang*, and *guipi* {cassia bark, *Cinnamomum cassia*}), and tofu. Boil for several minutes. Remove from heat and allow to stand for half a day. The color still will not be very dark. Remove tofu from liquid and dry it. After 1 night, repeat the process of boiling and soaking several times. Note: This yields a highly seasoned tofu with a long shelf life at room temperature.

Note: This is the earliest document seen (Feb. 2004) that recommends adding mushrooms or spices / seasonings to soy sauce to enhance its flavor.

113. [Manifest (cargo-list) of goods imported to Batavia in 1681 by two Chinese junks]. 1681. Colombo. p. 860r-61r. See p. 860r. Feb. 7 and 28. Unpublished manuscript. [Dut] • **Summary:** Two Chinese trading junks had arrived from Japan in 1681. On Feb. 7, the junk of captain Quanjock arrived with: 22 straw Calmus (Sweet flag) roots... 1 wicker basket (*canasser*) of medicine and one of tea, 681 kegs and pots containing pickled vegetables (*connemon [kô-no-mono]*), soy [sauce] (*soij*) and miso (*missoij*).

Note: This is the earliest Dutch-language document seen (March 2009) that uses the word “missoij” to refer to miso.

On Feb. 28 the junk of captain Lunsincqua arrived with: 40 little bureaus. 5 double kegs and 6 single kegs of camphor. 200 kegs and pots containing chestnuts (*carthanjen*), soy [sauce] (*Zoija*), and pickled vegetables (*connemon [kô-no-mono]*).

Bibliographic reference in Dutch: NA, VOC 1354, OBP (7 and 28-2-1681) 860r-861r. On microfilm. This letter is part of the correspondence in the series *Overgekomen Brieven en Papieren* (OBP)—letters and papers sent from Batavia and other factories to the headquarters of the VOC in the Netherlands. This is an important and voluminous part of the VOC archive.

Location: Nationaal Archief, Den Haag, De Archieven van de Verenigde Oost-Indische Compagnie (VOC); inventaris nummer 1354, folio 860 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch East India Company (VOC); record number 1354, folio / page 860]. On microfilm. Address: Colombo [in today’s Sri Lanka].

114. Schinne, Isaac van; Cansius, Hendrik; Jonge, Constantin Ranst de; Buijtenhem, Hendrik van; Sweers, Balthasar; Dijck, Pieter van. 1681. [Re: Sending provisions]. Letter to the Governor-General and the Council in Batavia [today's Jakarta, Indonesia], Oct. 31.

Handwritten, with signature. [Dut]

• **Summary:** The Deshima factory is sending 1,000 pairs of cotton stockings, all the porcelain, also the soy [sauce] (*Soija*), saké (*Sackij*), miso (*Misou*), pickled vegetables (*Konnemon [Kô-no-mono]*), and umeboshi (*Mebos* [salt pickled plums]), all of the best quality we can get, just as you ordered.

Note: This is the earliest Dutch-language document seen (March 2009) that uses the word “Misou” to refer to miso.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 312 [National Archives, Prins Wilhem Alexanderhof 20, The Hague. www.nationaalarchief.nl. The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 312]. Address: Deshima factory, Nagasaki [Japan].

115. Chen Qiyuan. 1682. Maoshi jigubian [Examination of Mao's ancient *Book of Odes*]. China. Passage on soy reprinted in C.N. Li 1958 #177, p. 115-16. [Chi]

• **Summary:** Wade-Giles reference: *Mao Shih Chi Ku Pien*, by Ch'ên Ch'i Yüan. Qing dynasty. The section titled “Ode to the seventh month,” which refers to Ode 154 in the *Shijing* (The Book of Odes); summarizes earlier knowledge of soybeans (*shu, dadou*), azuki beans (*xiaodou*), and other beans. Soybeans come in various colors, including black, white, yellow, dark brown (*he*), green (*qing*), and spotted / speckled (*ban*). They are used to make soy nuggets (*shi*), jiang, tofu (*fu*) and oil (*you*). Black soybeans are used as medicine. (Translated by H.T. Huang, PhD, Dec. 2002). Dr. Huang adds: The *Shijing* (Book of Odes) is a compilation which is considered to be the oldest of the five Confucian classics. In ancient times, there were several versions of this compilation. The version compiled by Mao Hêng in the early Han dynasty (2nd century BC) is the one that has been handed down to us and is considered the most trustworthy. When people cite or refer to the *Shijing*, they actually mean Mao's compilation.

116. Kurokawa Michisuke. 1684. *Yôshû fushi* [Topography of Yamashiro near Kyoto, based on *Yoshu* in ancient China]. 10 volumes. Japanese summary by Kawakami 1978, p. 266. [Jap]

• **Summary:** Describes shoyu making. Fukushima (1989, p. 9) states that the *Yoshu-Fushi* (Kurokawa, 1682) describes miso and shoyu.

Iino (2003, p. 8) quotes from this 1684 book: “... though *Sakai-joyu* (Sakai soy sauce) was once available only from liquor shops in Izumi (modern-day Osaka) and remains very

popular, soy sauce is now made by liquor shops in Kyoto, as well as made by hand at home making the purchase of *Sakai-joyu* unnecessary.” “In the first half of the Edo Period (17th century), soy sauce was made in all regions of Japan and could be purchased anywhere. In addition, soy sauce was made by hand in the large majority of houses”—This is made clear by this references in this book. “The method for making soy sauce is first recorded in the *Yôshu Fushi*. The method described calls for a malt to be made from boiled soybeans and roasted barley. Salt and water are added to the malt and the entire mixture placed in a large barrel. The mixture is to be stirred two or three times a day with a pole resembling an oar. After a minimum of 70 days, the *moromi* (dregs [mash]) is to be placed in a sack cloth. A stone is to be placed on top of the sack and the liquid squeezed out. This liquid can then be boiled with other ingredients to create a variety of dishes.” Iino then comments: “This explanation shows us that the method for producing soy sauce varied little from the way it is made today, though rather than wheat, barley was used and heat was not applied to the extracted liquid.”

117. Rakka Yajin Danshoken. 1686. *Shogei shokan: Ryôri no bu* [A small sample of various skills: Cookery section]. Japan: Nakamura Magobei in Kyoto, Honya Kiyobei in Edo (Tokyo), and Okada Saburo in Osaka. 66 p. Japanese summary by Kawakami 1978. [Jap]

• **Summary:** Pronunciation of the author's name is not clear. This book contains many interesting recipes but almost all were copied from the *Ryori Monogatari* (1643) and the *Edo Ryori-shu*. It describes methods for making Maruyama Hishio and tamari, plus a rich miso soup recipe. It is not clear whether or not he copied these recipes.

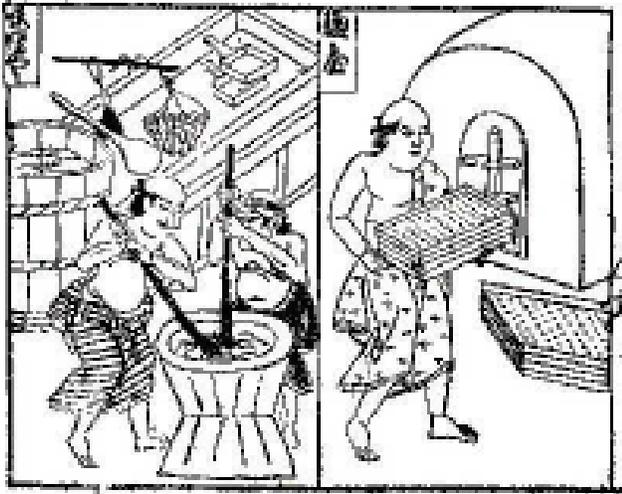
118. Jinrin kinmô zui [Illustrated encyclopedia of life in the Edo period]. 1690. Kyoto, Japan. Reprinted in 1990 by Heibonsha (Tokyo); edited by Asakura, Haruhiko. [Jap]

• **Summary:** The following page numbers refer to the 1990 reprint edition published in Tokyo by Heibonsha. The compiler of this remarkable work is unknown. At the bottom of almost every page (up to p. 293) are one or two half-page illustrations. Pages 317-31 are footnotes, followed by a syllabary index (a e u e o, ka ki ku ke ko).

The original edition was divided into seven volumes, including: 2. Noh drama. 3. Producers (farmers, woodcutters, fishermen, etc.). 4. Merchants (sellers). 5. Craftspeople. 6. Various and other jobs. 7. Entertainers. At the end is a long section of footnotes and annotations.

Page 121. The illustration is titled *Kuzune-hori* (Digging kuzu root). Yoshino kuzu is the best known in Japan.

Page 142. Shoyu is a famous product of Sakai. Produced in Osaka and Sakai, it is shipped to various places (no illustration).



Page 144. The right illustration is titled *Koji-shi* (Koji maker). Miso makers, manju (steamed bun) makers, and many others use koji. The illustration shows a man carrying four koji trays (*koji-bune*) filled with koji; he is about to put them into the incubation room (*muro*, which has a rounded top) where the koji will ferment. The text mentions a “thin board” (*usuita*), which may be a second type of koji trays, shown on the ground at right, lacking either one or both ends. The volume of koji is measured by the standardized size of the koji tray.

Page 144. The left illustration is titled *Miso-ya* (Miso shop). It shows two men mixing or pounding something (either koji, cooked soybeans and water before fermentation, or miso after fermentation) in a wooden mortar (*usu*, *suribachi*) using long wooden spatulas or pestles. They use a wooden spatula (*sekkai*) as their store sign. Behind the men to the left is a vat of fermenting miso with stones on top for pressure. Two wooden scoops in a rectangular wooden “boat” are used for scooping and measuring koji, cooked soybeans, and/or salt. The text says: “Miso makes a good seasoning and helps keep people healthy. A day cannot go by without it.”

Page 152. The illustration, titled *Kome-ya* (Rice shop), shows a man unloading a bale of rice (wrapped in rice straw) from the back of his horse. Nearby is a rice merchant, standing on a low platform near two other bales of rice. The text notes that the shop sells the “five grains” (*go-koku*), which include soybeans (*daizu*).

Page 160. The left illustration, titled *Yakidofu-shi* (Grilled tofu man), shows a man making grilled tofu over a rectangular brazier. In his right hand is a fan, with which he fans the coals beneath several cakes of tofu. In his left hand is a skewer with two prongs that pierce a cake of tofu. In front of his brazier is a wooden pail, which may be used to store cakes of tofu in water. At the front left is a sloping tray on which slices of tofu are drained. The maker of grilled

tofu can found in market places, temple gatherings, festivals, and wherever people gather around.

Page 162. The illustration, titled *Ko-ya* (Flour shop), shows three people turning a large hand-turned stone mill in which various types of flour (including soy flour) are ground. Ropes from the ceiling hold up the t-shaped end of a push-pull device used to help turn the heavy upper stone.



Page 166. The right half of the illustration is titled *Tataki natto*. To make this natto, dice stringy (*itohiki*) natto finely, then shape into a thin, flat square. Mix in finely chopped greens and tofu. It is an inexpensive, fast food. It is sold by walking street vendors from the end of September until February, especially at Tomikoji-dori, Shijo-agaru machi (probably in Kyoto). The illustration shows two men in front of a shop. Each is carrying a shoulder pole on one shoulder; from each end are suspended containers used to hold food. Each is also wearing straw sandals (*waraji*). The man on the right carries containers that are shaped like boxes with the long edges oriented vertically. A sliding panel may be used to open each box. Inside are either utensils and the ingredients for making tataki-natto, or bowls of tataki-natto ready to eat.

Page 166. The left half of the illustration is titled *Horo miso*, which is a kind of miso. The character for *Ho* means “law” or “dharma.” The man on the left has cylindrical wooden containers (*magemono*, shaped like traditional Japanese steamers) suspended from each end of his shoulder pole. Atop each is a bamboo mat (*sudaré*). The text states: This miso is made with black soybeans (*kuro mame*). The men who sell it all wear orange robes dyed with persimmons. They never put down the merchandise. Its container was covered and they carried it using a shoulder pole to keep it clean. When they had to put it down, they placed it with one side leaning against something. If anyone stepped over it, the seller demanded that that person buy it.

To make *horo miso*, cook black soybeans, then drain off and squeeze out the liquid. The result is a very firm miso with a low water content. Originally it was used in temples, but later it came to be used by the common people.

Note: Naomichi Ishige, a scholar of and expert on Japanese food history, writes (personal communication, March 2008): “To make *horo miso*, mix miso, minced walnut, sesame, and Japanese *sansho* pepper, then saute the mixture with vegetable oil in a pan. People eat *horo miso* with rice, or have it as a relish when they drink sake.

“In the *Jinrin kinmo zui*, the reason tatakhi natto is thin and formed is because people thought that type of natto could be easily dissolved in miso soup. However, its rectangular shape does not relate to the way of cooking.

“I am not sure how the peddler in the picture put his goods in a box that he carried. I only imagine that he wrapped a rectangular tatakhi-natto in a bamboo sheath and stored it in the box.

“When peddlers began to sell granulated itohiki natto, they put the itohiki-natto into a bamboo basket. They ladled up the quantity needed by a rice scoop (*shamoji*) and sold it. Or, they wrapped the itohiki-natto in a straw parcel and sold the parcel.” See also letter about natto history from Ishige sensei to Shurtleff, dated 16 March 2008.

Page 225. The right illustration is titled *Tofu-shi* (Tofu maker). The text states: Among the craftsmen, tofu makers rise the earliest each morning. Some sell deep fried tofu pouches (*aburaagé*). The book *Kuni Hana Manyoki* mentions the places named Maruyama and Reizan where the craftsmen lived. There may have been a lot of tofu makers who lived in this area. The illustration shows a tofu maker in his shop, sitting at the end of a firm pole used as a lever press to press the soymilk out of the okara in the pressing sack (which is placed on a rack) into the wooden vat below. It will then be curdled to make tofu. Also visible in the tofu shop are a wooden tofu forming box with 3 holes in each side, and four hanging *noren* curtains.

Page 291. The illustration is titled *Yaku-harai* (Driving out bad luck). The text mentions *setsubun* (the evening of the last day of winter, just before the first day of spring, also celebrated by some as New Year’s Eve—according to the old lunar calendar) and roasted soybeans (*iri-mamé*). On the evening of *setsubun*, Japanese wished to be cleaned of all bad spirits and bad luck. So they scattered roasted soybeans (with coins?) and cried out a slogan wishing for long life. This kept them very busy. Note: New Year’s Eve and Day are not traditional Japanese concepts; they were imported from China and the West during the 20th century. Address: Japan.

119. Yaoya-shû [Collection of various things]. 1693. Japan: Publisher unknown. Volumes 1-3 have 54, 48, and 46 pages respectively. Japanese summary by Kawakami 1978, p. 152. [Jap]

• **Summary:** The three parts of the book discuss (1) processing foods, (2) cooking, and (3) mochi and confectionery (*kashi*). This is mostly a copy of Gorui Nichiyo Ryori Shinan-sho, but the sequence of the material and the wording has been changed. Some new things have been added. Includes discussions of Nara Horin Miso, quick production of shoyu, and quick preparation of amazake, and Ukeire Tofu. It is not known what the latter is.

120. Hitomi, Hitsudai? 1695. [Honcho shokkan. See Pen chao shih chien]. [Chi]*

• **Summary:** “Our country’s food model?” Yokotsuka (1986, p. 198) cites this as Honcho Shokukan (1962) but apparently does not cite it in his bibliography.

121. Hitomi, Hitsudai. 1695. Pen chao shih chien [A mirror of food in this dynasty. 12 vols.]. Osaka?: Hiranoya Katsuzemon. 22 cm. Widely referred to as *Honchô Shokkan* in Japanese. Modern rendering by Morohashi 1955, trans. p. 13. Complete modern translation into Japanese by Isao Shimada (1976; Tokyo: Heibonsha). [Chi]*

• **Summary:** This book, written by a Japanese man in Japan, yet entirely in Chinese, contains early references to yuba, frozen tofu, natto, shoyu, and miso. When the Japanese read the Chinese characters for yuba, *doufu-lao*, they pronounced them *tôfu no uba*. *Lao* or *uba* means “old woman” or “wet nurse.”

The book states that the word “natto” is derived from *nassho*, meaning “temple kitchen” or literally “place of offering, perhaps because the food was offered to Buddha before being offered to the monks.” It also contains the earliest known written mention of natto’s medicinal or healing effects, together with recipes for preparing natto miso soup (*natto-jiru*).

Saito (1985, p. 15-16) notes: “In 1695 Dr. Hitomi Hitsudai, a Japanese physician, age 74, writes the *Honcho Shokkan* and talks about the good and bad points of daily foods from his medical viewpoint. The 12 volume book is written entirely in Chinese. He writes: ‘Soybean: Makes one feel calm, relaxes the stomach, and is good for the intestines. Miso: One should not be without it. Natto: Makes one feel calm, conditions the stomach, enhances a good appetite, and detoxifies poisons. Tofu: Nowadays tofu in Edo is pretty good. Among the various types, Nishiki-dofu and Kezo-in-dofu are famous... But it cannot compete with the tofu make in Kyoto. Shoyu: Inactivates any poisoning from eating food, drinking alcohol, or taking medicine.’ The above is taken from the translation into Japanese by Shimada Isao.”

Needham (1986, p. 581) cites this as *Pên Ts’ao Shih Chien* (Materia Medica in Tasteful Verse, by Chu Lun). Ch’ing dynasty. 1739. Partly translated by Swingle. But Needham does not discuss its content.

Fukushima (1989, p. 9) states that the *Honcho-Shokkan* (Hitomi, 1695) describes miso and shoyu.

Iino (2003, p. 8) states: “In the first half of the Edo Period (17th century), soy sauce was made in all regions of Japan and could be purchased anywhere. In addition, soy sauce was made by hand in the large majority of houses” – This is made clear by this references in this 1695 book, which also mentions the shoyu production process, noting that barley was used in place of wheat. On p. 9 Iino adds that detailed instructions for making *niban shoyu* (soy sauce from a second pressing of the moromi with salt water) are also described in this book. Iino then comments: “It is clear that with the beginning of soy sauce production, use was also made of the dregs [shoyu presscake] to make *niban shoyu*.”

122. Liu Xianting. 1695. *Guangyang zaji* [Miscellaneous notes about Guangyang]. China. Passage on soy reprinted in C.N. Li 1958 #185, p. 119-20. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Kuang Yang Tsa Chi*, by Liu Hsien-T'ing. Qing dynasty. According to the *Liji* (Book of Rites, +100) there are different kinds of *haijiang* (Note: *hai* is jiang made from animal products), including *ruanjiang* (made of eggs), *jiejiang* (made of mustard), and *doujiang* (made of soybeans). Each is to be used with its appropriate dish. So the sages require the right kind of jiang to go with the right dish. So today in *Jiangnan* (the area south of the Yangtze River), soybean jiang (*doujiang*) is the most popular. But in the north, *mianjiang* (which contains both wheat flour and soybeans) is also used. (Translated by H.T. Huang, PhD, Dec. 2002).

Huang (2000, p. 618) translates the title as “Miscellanies about Kuang-Yang” and gives the date as +1695.

123. Gu Zhong. 1698. *Yang xiaolu* [Guide to nurturing life]. China. [Chi]

• **Summary:** Wade-Giles reference: *Yang Hsiao Lu*, by Ku Chung. H.T. Huang (2000, p. 627) gives the date of this document as +1698. In the section titled “Products associated with tou fu,” Huang states: (1) (p. 324) A recipe for making frozen tofu, first mentioned in the *Shixian Hongmi* (Guide to the Mysteries of Cuisine) (+1680), is repeated in this book. (2) (p. 325) that both pressed tofu (*doufugan*) and smoked tofu (*xun doufu*) are mentioned in this book.

In the section titled “Fermented soybeans (*shi*),” Huang states that wheat flour is used as an ingredient in a recipe for making soy nuggets (*shi*).

In the section titled “Fermented soy sauce, *chiang yu*,” Huang states (p. 363): About 100 years after the *Bencao Gangmu* (The great pharmacopoeia) (+1596), the next description of the process for making soy sauce (*jiangyou*) appears in this book, in the form of three sketchy recipes, one of which states: Cook yellow soybeans (*huangdou*) or

black soybeans (*heidou*) until soft. Mix the soybeans and their cooking water with white [wheat] flour and knead to form a dough. Shape into flat or convex cakes. Cover with artemisia leaves until a good growth of yellow mold appears; then grind these cakes. Incubate the meal in a jar with brine. Warm in the sun to give [a thin] soybean jiang (*doujiang*). Filter through a tightly-woven bamboo sieve placed over a wide-mouthed vat. The jiang (soy paste) stays in the sieve while the soy sauce (*jiangyou*) is collected below.

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Seasonings based on jiang (fermented soybean paste) are used in 25 recipes: jiang itself in 14, and soy sauce made from jiang named *jiangyou* in 11 recipes. Seasonings based on soy nuggets (*shi*) are used in only 1 recipe, which uses soy nuggets itself.

Huang adds (p. 373): During the Ming dynasty, soy sauce (*jiangyou*) started to rival soy sauce in importance; by the early years of the Qing dynasty, soy sauce had surpassed jiang in culinary usage.

Huang notes (personal communication, 5 June 1993) that page 21 contains recipes for deep-fried gluten and smoked gluten.

Bo (1982): Describes the method for making *chiang-yu* (soy sauce).

124. Saito, Akio. 1699. [Chronology of soybeans in Japan, 1600 to 1699, the early Tokugawa/Edo period] (Document part). In: Akio Saito. 1985. *Daizu Geppo* (Soybean Monthly News). Jan. p. 14-16. [Jap; eng+]

• **Summary:** 1600–Komakabe?, the name of a type of tofu, appears in the *Diary of Oyudono no Kami* (*Oyudono Kami no Nikki*). The very firm tofu called *kata-dofu* that is presently sold in Kochi prefecture (on the southern part of the island of Shikoku) originated from Komakabe.

1601–Daté Masamune (DAH-tay Mah-sah-MU-nay; lived 1567-1636) of Sendai establishes the Goenso-gura and starts making miso. This is the first time that an organized method has ever been used to make miso in Japan. The purpose of this is to make miso for the army and to store salt. According to some theories, the date was 1645 rather than 1601.

1603–In *Nippo Jisho*, a Japanese-Portuguese dictionary, tofu (called “taufu”) is mentioned. It says that tofu is a food that is made from powdered / ground beans and that looks like freshly made cheese.

1605–Tokugawa Ieyasu commands the monks at Daifukuji temple to make Hamana Natto.

1616–Tanaka Genba of Kamiusa no Kuni is advised to make tamari shoyu as a side business by Sanagi Kyurouemon of Settsu. The latter runs a sake factory and has a wholesale seafood products shop in Edo. This is the beginning Choshi Shoyu and Higeta Shoyu.

1619—At about this time shoyu in quantity is brought from the Kyoto-Osaka area (*Kansai*) to Edo by Taru Kaisen and Hishigaki Kaisen. Note: A “Kaisen” is a ship that has a carrying capacity of at least 200 koku (= 9,520 gallons or 36,000 liters). That shoyu is regarded as the best quality and it soon takes over the entire Edo shoyu market.

1624-1644—Konpura Nakama (The union of merchants who go to Dejima / Deshima, an island in Nagasaki Bay) starts to export shoyu through the Dutch East India Company (*Higashi Indo Gaisha*) to Europe and Southeast Asia. It is said that in Europe this shoyu even reached the dining table of Louis XIV. Note: This document contains the earliest date seen for soybean products (shoyu) in Europe and Southeast Asia (probably India, 1644); soybeans as such had not yet been reported by that date. [Question: What is the source of these two dates?]

1626—Sendai Han (*daimyo* domain) starts to monopolize the selling of salt for the first time in the history of Japan. Because of this, all other Hans start to do likewise. Makabeya Ichibei of Kokubunji-cho in Sendai starts to sell Sendai Miso. He continues to sell his miso to the Han government for several generations.

1642—Because of famines in various provinces (*kuni*), the people were advised to eat coarse grains (*zakkoku*) and banned from eating rice. The sale of tofu, udon (wheat noodles), soba (buckwheat noodles), and *manju* (steamed glutinous rice cakes with a sweet azuki-jam filling) were also prohibited.

1645—The Ako Han starts a salt farm. Hatcho miso starts to be made in Mikawa, Okazaki. Hamaguchi Gihei of Hiromura in Kishu goes to Choshi and starts making shoyu. This is the beginning of Yamasa Shoyu.

1649 Feb.—The Tokugawa government (*bakufu*) passes a law to control the lives of farmers. Called Kanno Jorei (*Keian no Ofuregaki*), it states that farmers must plant soybeans and azuki beans between their rice fields and farms. Azé-mame (soybeans grown on the raised footpaths between rice fields) may have started from this forceful edict.

1652 May—Various farmers in Waksa, Kohama-han, Enshiki-gun? protest the heavy soybean tax increase. The farmland tax is often paid with soybeans. The leaders of the protest are killed.

1657 Jan. 18-19—A large fire (called *Sodefuri Kaji*) burned Edo (today’s Tokyo). Laborers came from throughout Japan to reconstruct the city. To feed them, many sellers of pre-cooked, ready-to-eat food sprung up in Edo.

1666—Maruo Magouemon? Chotoku? of Hanshu Tatsuno makes Usukuchi Shoyu (light-colored soy sauce). After this, Tatsuno Shoyu’s main product becomes Usukuchi Shoyu.

1681—The government bans the withholding or monopolizing of crops (such as rice, barley, or soybeans)

following a year with a bad harvest.

1695—Dr. Hitomi Hitsudai, a Japanese physician, age 74, writes the *Honcho Skokkan* and talks about the good and bad points of daily foods from his medical viewpoint. The 12 volume book is written entirely in Chinese. He praises the therapeutic virtues of soybeans, miso, natto, tofu, and shoyu. A translation into Japanese was later made by Shimada Isao.

1695—At about this time, tofu is sold by vendors sitting by the road. We do not know for sure when tofu was first sold by walking street vendors, but it is guessed that this may have taken place in about 1837-1853 when the book *Morisada Manko* was written by Kitagawa Morisada.

1696—There is famine throughout Japan. In eastern Japan, especially in Tsugaru Han, half of the population dies of starvation.

1696—One of the greatest scholars of agriculture during the Edo period, Miyazaki Yasusada (1623-1697), write *Nôgyo Zensho* (Encyclopedia of Agriculture). In it he described the many different colors, sizes, and shapes of soybeans cultivated at that time.

1697—Koikuchi shoyu, similar to the type made today, starts to be made from tamari shoyu in Choshi.

1698—After a big fire in Edo, sellers of Dengaku (skewered grilled tofu with a sweet miso topping) start to appear. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

125. Carletti, Francesco. 1701. *Ragionamenti di Francesco Carletti Fiorentino sopra le cose da lui vedute ne’suoi viaggi si dell’Indie Occidentali, e Orientali come d’altri paesi...*, 1594-1606 [Chronicles of his voyage around the world]. Florence, Italy: Stamperia di Giuseppe Manni, per il Carlieri. 395 p. See Part II, p. 26. 18 cm. [Ita]

• **Summary:** Carletti lived 1573?-1636. This is a much-polished and heavily edited version of his original *Chronicles*. This book is divided into two main parts. Part I is titled “First account: The West Indies” (p. 1-166). In Part II, titled “Second account: The East Indies,” the pagination starts over again at page 1, and miso is mentioned on page 26. More specifically: In the chapter titled “First chronicle of the East Indies,” Carletti states that he arrived in Japan in June 1597 at Nagasaki. On page 26 he discusses rice miso, which he calls “*misol*.”

In Italian, the sentence reads: “*Di questo Pesce ne fanno ancora molt’ altre sorte di vivande, le quali assaporano con una certa lor salsa, che chiamano Misol, fatta d’ una sorta di Fagioli, de quali abbondano;*” For details see the 1606 entry for Francesco Carletti.

Note: This is the earliest Italian-language document seen (March 2009) that uses the word “*misol*” to refer to miso. Address: Florence, Italy.

126. Terashima Ryoan. comp. 1711. *Wakan sansai zue* [Collection of Japanese and Chinese diagrams and drawings of all things]. Japan. 40 books, 106 sections. Japanese summary by Kawakami 1978, p. 269. Translation into modern Japanese titled *Wakan Sansai Zukai* published by Heibonsha in Toyo Pocket Library series. [Jap; eng+]

• **Summary:** This is Japan's oldest encyclopedia, written in *kanbun*, the Japanese transcription of Chinese writing. It is a Japanese compilation, which originated in Japan and is not a Japanese translation of a Chinese work. When cited in Chinese, the title in pinyin is: *Hehan sanchai tuihui* (W.-G. *Ho Han San Ch'ai T'u Hui*). The author's nickname (*aza*) is Shojun; his artist's name (*go*) is Kyorindo. The work contains many illustrations, although they were generally primitive and not very accurate.

In volume 105 (*Jozorui*), which is about brewing and fermented foods, a clear distinction is made between miso, shoyu, and tamari.

The section on yuba states: "Tofu film is made on the surface while making tofu. It looks like yellow paper. If you stir too much, the film will not form properly. If you wish to obtain the film, add coagulant and boil the milk. The wrinkled look of the film resembles (the skin of) an old woman. If you remove too much film, the yield of tofu decreases and the tofu becomes hard to eat." Yuba is referred to as *doufu-p'i*, the present Chinese term. When the text notes that yuba "resembles (the skin of) an old woman," it seems to imply that the earlier term *lao* or *uba* was used because of the similarity of yuba and an old woman's face.

Fukushima (1989, p. 9) states that the *Wakan Sansai Zue* (Narushima, 1712) describes miso and shoyu.

Ebine (1989, p. 91-93) gives the date of this work as 1712, and states that volume 105 describes the preparation of "tama-misho" using broad beans (*Vicia faba*; Japanese: *soramame*), and a "whitish misho" using soybeans. For each of these Ebine gives a flowchart. Rice or barley are soaked in water, steamed, and fermented to make rice koji, which is mixed with salt, and then the salted koji is mixed with broad beans that have been cooked and dehulled. The mixture is formed into balls, which are wrapped with rice straw, hung under the rafters over a fireside for several weeks, crushed in a mortar, then mixed with water to make tama-misho. To make whitish misho from soybeans and rice: 10 parts of soybeans are soaked in water, dehulled by brushing, and cooked. The hulls are first removed from the cooker, then the cooked beans are removed, formed into balls, and the balls are sliced. Meanwhile, about 14 parts of rice are polished, soaked in water, steamed, cooled, and allowed to mold spontaneously to yield 16 parts of rice koji. The rice koji, sliced soybean balls, and 1.3 parts of salt are mixed, pounded, packed into vats, and fermented for 10 days to yield the whitish misho.

C.N. Li (1958): *Making Fermented Products, Soy nugget sauce (shizhi; W.-G. shih chih)*. Note: Shih is often used at meals to harmonize the five flavors. People used to use it during this dynasty. Nowadays, if people do not use chiang, they do not use shih; they use soy sauce (*chiang-yu*), not soy nugget sauce (*shizhi*).

Modern rendering by Morohashi (1955). He translated p. 5 (roasted flour), p. 17 (soy nugget sauce). Confection of soy flour and *ame* = *Ame chimaki*. In "Making Fermented Foods." Morohashi (1955) translated p. 5. *tou i (mame ame)*. In: vol. 10, p. 63.

Iino (2003, p. 8) notes that this 1712 book "states that soy sauce made from wheat is suitable for the public and soy sauce made from barley is of low quality." Iino comments (p. 8-9): "Put simply, the soy sauce sold in shops was made from wheat because that made from barley was inferior."

On the same page, Iino shows a full page reproduction of the page titled "shoyu" in this book. It gives: "An explanation of soy sauce production with an illustration of the proper sort of barrel to be used." Iino notes (p. 9): "Another method for producing soy sauce requires a heating process. The *Wakan Sansai Zue* states: '... Squeeze the *moromi* to extract the oil [sic, liquid]. If the color is light, the flavor will not be good. Boil the oil [liquid], place it in a pail and leave it over night to darken the color and improve the flavor. Mix the dregs [presscake] again with salt water and extract the oil [liquid]. This [second pressing] is called *niban shoyu* (second soy sauce), and the flavor is very much inferior.'"

127. Kaempfer, Engelbert. 1712. *Amoenitatum exoticarum politico-physico-mediarum, fasculi v.* [Exotic novelties, political, physical, medical. Vol. 5]. Lemgoviae, Germany: W.W. Meyerei. See p. 834-35, 837-40. Illust. p. 838. Reprint of original edition published in 1983 by Steiner (Wiesbaden). [Lat]



• **Summary:** This is Kaempfer's first major work, his most famous, and his first to mention the soybean. Kaempfer was born on 16 September 1651 at Lemgo, Germany. [Lemgo is presently a city in North Rhine-Westphalia, 44 miles southwest of Hannover.] He traveled in Japan from 23 September 1690 to November 1692 and made many interesting observations. This book, written in Latin, was published in Lemgo in 1712, some 16 years after his homecoming.

The fifth fascicle of the 900 page book, which contains a description of the plants of Japan, includes a full-page illustration (drawing; p. 838), by Kaempfer, of a soybean plant with details of the flower parts and their names. This is the earliest illustration of a soybean plant published in the Western world. Also contains a description of the plant, and descriptions of how to make miso and shoyu. He called the soybean "Daidsu" and wrote the Chinese characters before the romanized name in the sequence "zu" "dai" from left to right. The actual Japanese spelling is "daizu." Note 1. This is the earliest document seen (June 2001) written by a European or Westerner in which Chinese characters are used to write the name of the soybean or related products.

Kaempfer's description of the soybean in Latin (p. 837-40) begins: "Daidsu, vulgo & literatis; & ob excellentiam *Mame*, i.e. legumen, dictus. Phaseolus erectus, siliquis Lupini, fructu pisi majoris candido..."

Translated into English, this reads: "Daidsu—as people and scientists call it, is also called 'mame' for its excellence. An upright bean, a leguminous plant like the lupin, with whitish fruit somewhat larger than peas. A bean, similar to the afore-mentioned, but four feet high and with more branches and leaves, with upright stem, irregular branches and with hairs. It stretches forth leaves like the garden bean, but with more pubescence on the under side of the leaf. In the month of August it bears on pedicels in the axil of the leaves several bluish white flowers with a large standard, which resemble those of lentils. These tiny blossoms are followed by pods measuring 1½ inches long, which are covered with heavy hairs (pubescence) resembling those of the yellow lupin. The pods contain two, and more rarely three seeds, similar to garden peas in size, shape and taste, but laterally somewhat compressed, and with a chestnut brown eye (hilum).

"This legume supplies to the Japanese kitchen vital elements, for they make from it the following: 1—A kind of pap that they call miso, which is added to dishes instead of butter. Butter is unknown under this strip of heaven. 2—And then the famous so-called shoyu (*Sooju*), a sauce which is poured over if not all dishes, at least over all cooked and fried meals. I add the processing methods for both.

"To produce miso, one takes one measure of mame or phaseolus Daidsu (phaseolorum *Daids*) which is cooked with water for a long time and then brayed or ground and mixed into a soft pap. Under continued braying, common

salt is added, in summer four parts, in winter three. If less salt is added, one gets the product quicker, but shelf life is shorter. After reducing has been repeated, one mixes the pap with *koos* [he probably meant koji] or dehulled rice (*Oryza*), and mixes the total by repeated braying. This rice in preparation has been boiled a little in the steam of unsalted water. One lets the mixture cool down and remain in a warm cellar one or two days and nights to ripen. This mixture, which has the texture of a pap or spread, is put into a bowl that recently contained the popular *sacki*, a rice wine. Before using, one lets the bowl stand one or two months untouched. *Koos* lends to the product an agreeable taste, and its production requires, like that of the Germans' 'polenta,' the experienced hand of the master. Those therefore who make it are held in high esteem, and they sell it ready made. Note 2. This is the earliest Latin-language document seen (March 2009) (and the earliest document published in Europe) that mentions miso, which it calls *Miso*. It is also the earliest document seen (March 2009) that compares miso to butter.

"To make shoyu (*Sooju*) one uses the same beans just as thoroughly cooked. And *muggi*, which is barley or wheat fermented (with wheat the product becomes darker) which has been coarsely ground. One mixes equal units with ordinary salt, or only one unit with half of it. The beans are blended with the prepared grain, and one lets the mixture stand in a warm place under cover a day and a night for fermentation. Then the salt is added, one stirs the mass and mixes with water, normally two units to half. When this has been done, the well covered mass is stirred once (better two or three times) the next day and each subsequent day by means of an oven rake. This work is continued for two or three months, then the mass compressed and filtered and the liquid preserved in wooden containers. The older it becomes, the clearer and better it will be. The squeezed mass is again filled up with water and newly stirred and some days after treatment pressed again.

Note 3. This is the earliest document seen (Feb. 2008) that uses the word *koos* to refer to koji, or that uses the word *Sooju* to refer to shoyu (soy sauce).

Paragraph 3 reads as follows in the original Latin: "Hoc legumen in coquina Japonicâ utramque replet paginam; Ex eo namque conficitur: tum puls *Miso* dicta, quæ ferculis pro consistentiâ & butyri loco additur, butyrum enim hęc coelę res ignota est; tum *Sooju* dictumcelebre embamma, quod nisi ferculis, certę frictis & assatis omnibus affunditur. Utriusque conficiendi modum appono:"

On page 834 Kaempfer lists the Gokoku (five chief cereal grains): *come* [*kome*], *Oryza* in genere: quinque grana Japoniis *go kokf* secundum excellentiam dicuntur: *come*, *Oryza*; *o muggi*, *Hordeum*; *ko muggi*, *Triticum*; *daidsu*, *Phaseoli facie Lupini* [*Soja hispida*]; *sjodsu* seu *adsuki*, *Phaseoli vulgaribus similes* [*Adzuki*, *azuki*, or *Phaseolus radiatus*, L.].

On page 836 are botanical descriptions, each with 1-2 Chinese characters (read from right to left), of: Broad beans (*Sora mame*), sword beans (*Natta mame [nata mame]*), peanuts (*Nankin mame or Nankino*), and cowpeas (*Sasagi [sasage], Shiro Sasangi*).

On p. 837 is a detailed botanical description (in Latin) of the azuki bean, starting with a Chinese character: “Too, vulgo Atsuki [Adzuki], *Phaseolus hirsutus...*” Note 4. This is the earliest Latin-language document seen (Jan. 2005) that mentions azuki beans, which it calls *sjodsu*, *adsuki*, or *atsuki*.

On page 840 are shorter descriptions (in Latin) of “Siuku, vulgo Kuro mame [Black soybean], i.e. *Phaseoli nigri*. *Phaseoli Daidso* species sive varietas, fructo nigro,” and “Katz, vulgo Kudsu [Kudzu], *Kudsu Kádsura*.”

Note 5. This is the earliest document seen concerning soya in connection with (but not yet in) Germany. Other early authors to cite it were Linnaeus (1747, p. 222, and 1753, p. 727), Osbeck (1771, p. 253), Linnaeus (1772, p. 171), de Candolle (1885, p. 331), Yule & Burnell (1886, p. 651), and Blasdale (1899).

Note 6. This is the earliest document seen (June 2001) by or concerning Englebert Kaempfer in connection with soybeans.

Note 7. This is the earliest document seen (Sept. 2003) that mentions lupins.

Note 8. This is the earliest document seen (May 2003) that mentions both lentils and soybeans. Address: Lemgo, Germany.

128. Chen Menglei. ed. 1726. *Tushu jicheng* [Imperial encyclopedia]. China. 10 vols. Passage on soy reprinted in C.N. Li 1958 #327, p. 233. [Chi]

• **Summary:** Wade-Giles reference: *T'u Shu Chi Ch'eng*, edited by Ch'ên Mêng-Lei. Title also cited as: *Gujin tushu jizheng* (W.-G. *Ku Chin T'u Shu Chi Chêng*). Or as: *Qinding gujin tushu jizheng* (W.-G. *Ch'in Ting Ku Chin T'u Shu Chi Chêng*). Qing dynasty.

Soybeans are discussed in detail in the lengthy section titled “Beans.” The section titled “Explanation of the name soybeans” (*dadou*) states: The word *dadou* is found in the *Shennong Bencao Jing (Benjing)* (Classical pharmacopoeia of Shennong, the Heavenly Husbandman) (+100). The simplified character *shu* [the ancient name for soybeans] is found in the *Bencao Gangmu* (The great pharmacopoeia), by Li Shizhen (+1596). The pods are called *jia*. The leaves are called *huo*. The stems are called *qi*. (Translated by H.T. Huang, PhD, March 2003). Dr. Huang adds: In this section on soybeans, there is much more information, but none of it is new; it is all from sources we have translated previously.

Huang (2000, p. 625-26) and Bray (1984, p. 631) give the date as 1726 and translate the title as “Imperial Encyclopedia. [or: Imperially Commissioned Compendium

of Literature and Illustrations, Ancient and Modern].” Index by L. Giles (1911).

Wilkinson (2000, p. 605-07, 967) has an entire section on this book, including a table of contents, which is divided into 6 main categories, 32 sections, and 10,000 subsections. He cites it as *The Imperial Encyclopedia* or “Imperially approved synthesis of books and illustrations past and present,” Chen Menglei et al., comps. 1726-1728. 10,000 *juan*. It is by far the largest [and last] of the general encyclopedias (*leishu*) to have been printed. “Modern editions are available, including on CD-ROM. The most detailed is that prepared for the 1985 Zhonghua and Ba-Shu edition.

Needham (1986) has an interesting chart (p. 184) that shows the ancestry and descent of this and other major Chinese encyclopedias and dictionaries. He tells the remarkable history of this encyclopedia and its compiler (p. 206-08).

Bray (1984, p. 76, 631): This popular encyclopedia contains sections devoted to crop plants. They “consist of quotations from the classics and from agricultural treatises, and are of little intrinsic interest here except for the illustrations, which sometimes differ slightly from those of the agricultural monographs.”

Hummel (1944, p. 93-95): Ch'en Meng-lei, born in 1651, was a scholar, native of Huo-kuan (Foochow). Caught in a rebellion, he was exiled, then in 1698 pardoned and brought back to Peking, where he served as teacher and secretary for the Emperor's son, Yin-chih. There he began to compile a classified encyclopedia consisting of extracts copied from various works. In 1701 he persuaded Yin-chih to finance the project further. Then the emperor Sheng-tsu probably became interested in the project, for he gave it the title “Synthesis of Books and Illustrations of Ancient and Modern Times.” The work seems to have become a state enterprise, for officials were appointed to help Ch'en in the compilation. It was completed in about 1722, before the death of emperor Sheng-tsu. The emperor's son, who succeeded to the throne after a bitter power struggle, disliked Ch'en and so had the work “revised” to obliterate all signs of Ch'en's connection to it. The “revision” was completed in 1726. The first edition, comprising 10,000 *chüan*, plus a table of contents in 40 *chüan* was printed in 1728. Sixty-four sets were printed. A second edition of 1,500 sets was printed in Shanghai in 1884-88, but was marred by errors. A third accurate edition/set was printed in 1895-98 in Shanghai. One set was presented to the Library of Congress in 1908. An English index to the encyclopedia, with a valuable introduction, was compiled by Lionel Giles and titled “An Alphabetical Index to the Chinese Encyclopedia Ch'in-ting Ku-chin t'u shu chi-ch'eng.” It was published in London in 1911.

W.T. Swingle (1942, p. 13): The largest single Chinese account of many plants “is contained in the *Great Chinese*

Imperial Encyclopedia, the largest encyclopedia ever printed in any country. It was compiled by order of the Manchu Emperor K'ang Hsi by Ch'êng Mêng-lei, but the work was not completed when K'ang Hsi died in 1723. His son and successor as emperor, Yung Chêng, promptly dismissed Ch'êng Mêng-lei and appointed Chiang T'ing-hsi, a scholar and statesman of some distinction, under whose care the manuscript was printed in 1726. This giant work fills 5,020 volumes, each containing two books or chapters."

W.J. Hagerty (1917) did an excellent translation (which see) of the section titled "Beans." Published by the USDA, Washington, DC. With plates. This section on beans (including soy beans) appears in the encyclopedia in Category IV—Science (*Po Wu Hui Pien*), Section 20—Vegetable Kingdom (*Ts'ao Mu Tien*), Subheading—Beans (*Tou Pu*), Book 35.

129. Kaempfer, Engelbert. 1727. *The history of Japan, ... Its metals, minerals, trees, plants, animals, birds and fishes; ... Together with a description of the Kingdom of Siam 1690-1692.* (translated by J.G. Scheuchzer from the original edition of April 1727. 2 vols.). London: Printed for the translator. See vol. I, book I, chapter IX, p. 121-22. [1 ref. Eng]

• **Summary:** In Chapter IX, "Of the fertility of the country as to plants," the section titled *Gokokf* ("five grains," p. 121-22) states: "The chief produce of the Fields, which contributes most to the sustenance of Life, is by the Japanese comprehended under the name of *Gokokf*, that is, the *five Fruits of the Fields*. 'Tis by their good or bad growth they estimate the value of the Ground, the fruitfulness of the Year, and the wealth of the Possessor. They make up the chief dishes at their meals, and make good the want there is of Flesh-meat, which Custom and Religion forbid them to eat." Note 1. This is the earliest English-language document seen (Dec. 2003) that uses the term "Flesh-meat" to refer to meat.

The five grains (*Gokokf*) are: (1) *Kome* or Rice (from which "they brew a sort of strong fat Beer, call'd *Sacki*..."). (2) *Oomugi* or Barley. "They feed their Cattle and Horses with it: Some dress their Victuals with the Flower [Flour], and make Cakes of it." (3) *Koomuggi* or Wheat. (4) *Daidso* or Daidbeans. (5) "*Adsuki* [azuki] or *Sodsu* [shôzu, shôdzu = small + bean] that is Sobean" [azuki].

Concerning soybeans: "4. *Daidso*, that is, *Daidbeans*, is a certain sort of Beans, about the bigness of Turkish Pease, growing after the manner of Lupins. They are next to the Rice in use and esteem. Of the Meal of these Beans is made what they call *Midsu*, a mealy Pap, which they dress their Victuals withal, as we do with Butter. What they call *Soeju*, is also made of it, which is a sort of an *Emamma*, as they call it, which they eat at meals to get a good stomach. This *Soeju* is exported by the Dutch, and brought even into

Holland. I have describ'd their way of making it in my *Amoenitates Exoticae*. p. 839. where the Plant it self bearing these beans is figur'd and describ'd."

Note 2. *Midsu* clearly refers to miso, and *Soeju* to shoyu. This is the earliest English-language document seen (March 2009) that mentions miso, or miso in connection with Japan. It is also the earliest English-language document seen (March 2009) that compares miso with butter. *Midsu* has almost the same pronunciation (phonetics), and the same etymology and meaning as the today's word "miso." Since spelling did not become fixed until the 18th century, this could be considered the earliest occurrence of "miso" in an English-language document.

Note 3. This is the earliest English-language document seen (Jan. 2006) that uses the word *Soeju* to refer to soy sauce. It is clearly Kaempfer's spelling of the Japanese word *shoyu*.

The author continues (p. 121-22): "5. *Adsuki* or *Sodsu*, that is Sobean. They grow likewise after the manner of Lupins, and are black, not unlike *Lentils*, or the Indian *Cajan*. The flower [flour] is bak'd with sugar into *Mansje* [*Manju*] and other Cakes."

Note 4. This is the earliest English-language document seen (March 2006) that clearly mentions azuki beans. It is also the earliest English-language document seen (March 2006) that uses the word "Adsuki" or the word "Sodsu" to refer to azuki beans. Cooked and mashed or ground dry into flour are mixed with sugar to make *an* or "sweetened azuki bean paste." This is used as a filling for the popular steamed Japanese sweet bun named *manju*.

Besides the several sorts of *Gokokf* just mentioned, the following Plants are comprehended under the same name: *Awa*, Indian Corn, (*Panicum Indicum Tabern*), *Kibi*, or *Milium vulgare nostras*, *Millet*: *Fije*, or *Panicum vulgare juba minore semine nigricante*: And in general all sorts of Corn and *Mami* [Mamé = beans], that is pease and pulse. Azuki beans, though usually red, also occasionally have black or white seedcoats.

In the Introduction to this book, the translator explains that it was first published in English, after Dr. Kæmpfer's death in 1716, thanks to Sir Hans Sloane, who purchased all of Kæmpfer's plates, drawings, and manuscript memoirs as they were about "to be disposed of." Sloane added them to his library, which the translator believes is "the completest of its kind in Europe," with an extensive collection of Books of Physik, Natural History and Travels." "This History of Japan was by the Author divided into five Books."

Note 5. Kaempfer lived 1651-1716. John Gaspar Scheuchzer lived 1702-1729. His first translation was this one, in 1727. The title page states that the original was "Written in High-Dutch by Engelberus Kaempfer, M.D., Physician to the Dutch Embassy to the Emperor's Court; and translated from his Original Manuscript, never before

printed, by J.G. Scheuchzer, F.R.S. and a member of the College of Physicians, *London*. With the Life of the Author, and an Introduction. Illustrated with many copper plates.”

Note 6. In 1986 a 3 volume edition was published in Glasgow, Scotland by James Maclehose and Sons. This book contains no mention of soybeans in Siam (Thailand).

Note 7. This is the earliest English-language document seen (Nov. 2007) that mentions Lupins (or “lupin” or “lupine” or “lupines”).

Note 8. This is the earliest English-language document seen (Dec. 2000) that mentions the *Goku-fu* or “five grains” and includes the soybean among them.

Note 9. This is the earliest English-language document seen (June 2008) that mentions lentils; it compares them with adzuki [azuki] beans. Address: M.D., Physician to the Dutch Embassy to the Emperor’s Court [in Japan].

130. Tournefort, Joseph Pitton de. 1730. The compleat herbal: or the botanical institutions of Monsr. Tournefort, Chief Botanist to the late French King... translated [by J. Martyn] from the original Latin. With large additions, from Ray, Gerard, Parkinson, and others. Vol. II. London: Printed for J. Walthoe... See p. 481. No. 81. Reproduced from John Ray 1704. [2 ref. Lat; Eng]

• **Summary:** “80. *Phaseolus Japonicus niger*. Butyri vices supplens Deysumisi boondi, *D. Sherard. Raii Supp.* 438. *Black Japanese Kidney-bean supplying the place of Butter.*”

Note 1. This citation and the one that follows were reproduced from William Sherard’s 1704 unpublished manuscript titled *Autograph observations on the first two volumes of John Ray’s Historia Plantarum* (2 volumes in 1), p. 438. But Tournefort made a small error in transcribing Ray’s text. Ray actually wrote *Deysu-Misi-boondi D. Sherard*. This text almost certainly refers to “Daizu-Miso-beans,” thus stating that black soybeans are used to make miso. Early Europeans occasionally considered miso to be a type of butter.

“81. *Phaseolus Japonicus fructo albo, ex quo Soia conficiunt Japoneses, D. Sherard. Raii Supp.* 438.” *Japanese kidney bean with a white fruit, out of which the Japanese make their Soia.*

Note 2. This is the 2nd earliest English-language document seen (Feb. 2006) that uses the term “kidney-bean” (or kidney bean) or the term “Japanese Kidney-bean” to refer to the soybean. Address: France.

131. Miyake, Yurai. 1732. *Mankin sugiwai-bukuro* [How to produce daily household necessities]. 6 volumes (satsu). Japanese summary by Kawakami 1978, p. 258. [Jap]

• **Summary:** Volume 6, which is about food and drink, emphasizes methods of production, and describes how to make shoyu, sake, vinegar, konnyaku, and many other foods. The book was also known under the title *Machikata*

Bantaku Shobai Shiho Taisei (“All houses in the town area business method collection”).

Fukushima (1989, p. 9) states that the *Mankin-Sangyotai* (Miyake, 1732) describes how to make miso and shoyu.

Iino (2003, p. 9) states that the *Mankin Sugiwai-bukuro* (1732) discusses only the soy sauce production method using wheat (not barley) and soybeans. Iino comments: “With the beginning of the 19th century, the large bulk of soy sauce seems to have been produced using wheat.” In column 2 of page 9 he adds that this books also gives a description of the method for making *kijoyu* (raw / unheated soy sauce). Iino then comments that from this description we learn that, “while *kijoyu* was very flavorful and could be kept for a long time, the high cost of production made selling *kijoyu* difficult. Therefore a blend of approximately 7-8 liters of *modoshi* [modoki = imitation?, a dilutor?] for every 18 liters of moromi was being sold.” Address: Kyoto, Japan.

132. Charlevoix, Pierre Francois Xavier de. 1736. *Histoire et description generale du Japon: Ou l’on trouvera ce qu’on a pu apprendre de la nature & des productions du pays... & l’examen de tous les auters, qui ont ecrit sur le meme sujet...* 9 v. [History and general description of Japan... Including the examination of all the authors who have written on the same subject. 9 vols.]. Paris: Chez Julien-Michel Gandouin [and 4 others]. Illust. Index. 17 cm. [Fre]*

• **Summary:** Peanut = Arachide, cacahuete. Other writers on soy: 1696–pois jaunes, pois jaunes, soui or soi / 1790–Dolic du Japon, bouillie, miso, soja, soju / 1796–Dolichos Soy, dolic bean, daidsou, feves de dolic, miso. Pierre Charlevoix lived 1682-1761. Address: Jesuit father.

133. Li Hua-Nan; Li Diao-Yuan. 1750? *Xingyuan lu* [Memoir from the garden of awareness]. China. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Hsing Yüan Lu*, by Li Hua-Nan, compiled by his son Li Tiao-Yüan. Qing dynasty.

H.T. Huang (2000, p. 324), in the section on frozen tofu, states that dried frozen tofu is first mentioned in this work, which suggests: Allow a whole batch of thinly sliced frozen tofu squares to thaw slowly, then store them in a cool place so they can be used in the summer.

Huang (2000, p. 327), in the section on “Making of fermented tofu” states: “Technically the most interesting accounts of the making of *furu* are found in the *Xingyuan lu* (1750). Five recipes are presented, representing two types of methodology. One uses ground wheat *ferment* as shown in the translation given below: ‘First prepare yellow wheat *ferment* as previously described and comminute it to a fine powder. Take ten catties of fresh tofu and two catties of salt. Cut the tofu into thin rectangular pieces. Sprinkle a layer of salt over a layer of tofu. Allow the tofu to soak in the brine [that is generated]. After five or six days remove the tofu

but keep the juice for later use. Arrange the tofu pieces neatly in a steamer and steam until they are well cooked. Hang the steamer with its contents in an empty room for half a month when the tofu becomes covered with luxuriant fungal growth. After scraping off the hairy surface the pieces are air dried. Now treat the tofu with dry yellow *ferment* as follows. Decant the salty juice from the soaking step and mix in dried *ferment* to form a paste. Spread a layer of tofu over a layer of *ferment* paste and cover with a layer of fragrant (i.e., sesame) oil. Add a few whole pieces of fagara. Place the stacks in a crock and seal the mouth securely with mud. Warm the crock in the sun during the day. After a month the product will be ready for the table.”

Huang adds (p. 327): “The other methodology uses the mash left from the fermentation of wine from grains.”

Huang (2000, p. 341-42) also notes that the process for making soy nuggets (*shi*) described in the *Bencao Gangmu* (The great pharmacopoeia) (1596) is repeated in four recipes in this book. Although the first stage, the production of soybean koji (molded soybeans) remains unchanged, “a variety of additional materials such as fagara, sugar, wine, melon juice, melon meat, melon seeds, liquorice [licorice], mint, magnolia bark, fritillary corm [fritillaria; bulbous herbs of the lily family] etc. have been included in one or more recipes for the second stage incubation.” These herbs and spices gave each product its own unique fragrance and flavor. One of the four recipes calls for the use of wheat flour. Huang observes that when the amount of wheat flour is large, the process becomes very similar to that for making soybean jiang.

In addition (Huang 2000, p. 363-64) translates the detailed method for making soy sauce, which is presented as a method for making *qingjiang* (“clear jiang”): Clean and wash one *dou* of yellow soybeans. Boil beans until soft and the color has turned red. Blend beans and cooking water uniformly with 24 catties white wheat flour. Form into cakes, arrange on bamboo or willow [leaf] trays, then cover with rice straw. Place trays in a wind-free room, and incubate for 7 days or until a good growth of mycelium appears. Remove the straw. Place trays in the sun during the day; bring them indoors at night. Repeat the procedure for 14 days. If it rains during the day, trays should be placed in the sun for additional days until the total of 14 days is attained. This is how to make the yellow koji for jiang (*jianghuang*).

For each *dou* of yellow koji for jiang, measure 5 *dou* of well water into an earthenware crock. Measure exactly 15 catties of raw salt into a bamboo basket, and hang the basket in the well water [inside the crock] until all the salt dissolves in the water. Discard any residue in the basket. Mix the yellow koji into the water; let it warm in the sun for 3 days. On the morning of the 4th day, remove earthenware crock from sun and stir contents well with a wooden paddle. Two days later, remove from sun and stir again. Repeat this

procedure 3-4 times. After about 20 days, the “clear jiang” (*qingjiang*, or soy sauce) should be ready for use.

To separate the soy sauce (*qingjiang*), use a finely woven cylindrical bamboo tube that is open at both ends. People in southern China call this a “circular sieve for jiang” (*jiangchou*). It is widely available in local markets of the capital [Beijing]. The same markets also sells various sizes of covers for the crocks. When the jiang / mash is ready [it has a consistency resembling that of applesauce], push the woven bamboo tube down into its center until the bottom of the tube rests securely on the bottom of the crock. Remove the jiang inside the tube so that the bottom of the crock is clearly visible. Place a brick atop the tube to prevent it from floating upwards. Liquid soy sauce will flow from the jiang mash into the tube. The next morning the tube should be filled with liquid. Use a bowl to transfer this clear soy sauce into a clean crock. Cover the crock with a piece of cloth to prevent flies from falling in. Warm the crock in the sun for half a month. To make more soy sauce, increase the amount of raw materials. After the sauce is ready, you can also use a sieve to collect the soybeans that float to the top of the mash. When half-dried, these beans make delicious soy nuggets (*doushi*).

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing dynasties.” Seasonings based on jiang (fermented soybean paste) are used in 10 recipes: jiang itself in 4, soy sauce made from jiang named *qingjiang* in 5 recipes, and soy sauce made from jiang named *jiangyou* in 1 recipes. A seasoning named *douyou* is used in 8 recipes. Note: This is the earliest document seen (Aug. 2005) in which a soy-based seasoning named *douyou* (W.-G. *tou yu*) is mentioned. Huang states (p. 371) that *douyou* is written with the Chinese characters for bean + oil.

Wilkinson (2000, p. 646) states that this book (late 18th century) is the first Chinese collection of recipes from a regional cuisine—that of Sichuan.

Fukushima (1989, p. 6): “The general manufacturing methods of soy sauce in the Ch’ing (Shin in Japanese) dynasty are recorded in *Ch’ing-yuan Lu* (sic, *Hsing-yuan Lu*; *Seienroku* in Japanese), written by Li Hua-nan (Ri Kanan in Japanese). Cooked soybeans and uncooked wheat were the raw materials used in koji making. The resultant koji was mixed with brine. After aging, the soy sauce was collected by pressing a deep bamboo colander into the aged mash and ladling out the liquid which had accumulated.”

Bo (1982): Describes the method for making *chiang-yu* (soy sauce).

134. Zhai Hao. 1751. *Tongsu bian* [Origin of common expressions]. China. [Chi]

• **Summary:** Wade-Giles reference: *T’ung Su Pien*, by Chai Hao. Qing dynasty. (Huang 2000, p. 354n, 626). Chapter 26 of this book states that the original list of necessities of life

in the *Mengliang Lu* (Dreams of the former capital) (+1275) contained eight items: “firewood, rice, oil, salt, wine (*jiu*), jiang, vinegar, and tea.” When this list was popularized in Yuan (Mongol) dynasty (1279-1368) musical plays, whose lyrics usually allowed only seven syllables per line, the playwrights had to follow convention. They decided to eliminate wine, leaving us with only seven necessities.

Wilkinson (2000, p. 955), in the section on Qing philology, states: Cui Hao. 1751. *Tongsu bian* (Compilation of common usage). Contains more than 5,000 words, phrases, proverbs, etc. arranged in 38 subject categories.

135. Histoire générale des voyages, ou, Nouvelle collection de toutes les relations de voyages par mer et par terre [A general history of voyages: or, New collection of all the accounts of voyages by land and by sea. Vol. 11]. 1753. Paris: Didot, Libraire. 722 p. See pages 707-08. [Fre]

• **Summary:** This seems to be a French-language summary and translation of parts of *Amoenitatum exoticarum*,... by S. Kaempfer 1712 (p. 707-08). “On distingue plusieurs autres sortes de Haricots; une, entr’autres, dont les Japonnois font une espece de bouillie, qui leur tient lieu de Beurre, & dont ils font une sauce fameuse, qui se sert avec les viandes rôties. Ils nomment la bouillie *Miso*, & la sauce *Sooju*.”

Translation: They distinguish several other sorts of beans. From one of these they make a sort of pap, which takes the place of butter for them, and from which they make a famous sauce, which they serve with roasted meats. They call the pap “Miso,” & the sauce “Sooju.”

Note: This is the earliest French-language document seen (March 2009) that mentions miso, which it calls *Miso*.

136. Ryôri oboe-gaki [Writings on cookery remembrances]. 1756. Japan: Publisher unknown. 44 p. Japanese summary by Kawakami 1978, p. 161. [Jap]

• **Summary:** Mostly about snacks and confections (*kashi*). But there is an interesting description of miso-making using rice bran (*nuka*) and koji with salt. It is called *nuka miso*. This was a type of miso, and it was used in *nuka miso soup* (*nuka-miso shiru*). Today, *nuka-miso* refers to salted rice bran used as a pickling bed. It does not contain any actual miso, though it has a similar consistency.

137. Zhang Zongfa. 1760. *Sannongji* [Records of the three departments of agriculture]. China. Passage on soy reprinted in C.N. Li 1958 #299, p. 221, and #331, p. 234-35. [Chi]

• **Summary:** Wade-Giles reference: *San Nung Chi*, by Chang Tsung-Fa. Qing dynasty. Contains a passage on soybean seedlings (*doumiao*) from the *Zhenglei bencao* (Reorganized pharmacopoeia) (+1082; which see). The section titled “The spring” states: Plant black soybeans (*heidou*). Note: The last month of spring in the Chinese lunar calendar is the 3rd month, would be quite early to

plant soybeans in northern China but not so early in southern China.

The section titled “Beans” (*dou*) begins with a long quotation from the *Bencao Tujin* (Illustrated pharmacopoeia) (1061, which see).

The next section begins with a brief quotation from the *Shiming* (Expositor of names) (+150): *Shu* (the simplified character) means soybeans (*shu*, the early, more complex character). Then Zhang Zongfa (author of this book, *Sannongji*) comments: *Shu* (the complex character) is the general name for legumes (*jiagu*, “pod grain”). Note: Dr. Huang has never seen these two characters used to refer to legumes. Moreover, throughout early Chinese history, the complex character *shu* almost always referred specifically to soybeans, not to legumes in general. So this is Zhang’s new interpretation of the meaning of *shu*.

Zhang Zongfa continues: In the ancient “seal characters” (*zhuanwen*), the three strokes at the bottom in *shu* (the simplified character) looks like pods dangling from the stem. The character for *dou* (bean) looks like seeds (i.e., beans) in the pod. Note: Hu Daojing (1963) proposed that the three dots represent the nodules on the roots of the soybean plant.

According to the *Guangya* (Ancient dictionary: Enlargement of the *Erya*) (+230): Soybeans (*dadou*) were also called *shu*; azuki beans (*xiaodou*) were also called *da*.

According to the *Mingyi Bielu* (Informal records of famous physicians) (+510): The leaves can be used to feed livestock. The pods can be used to feed cattle and horses. The stems can be used as fuel to cook food.

The next paragraphs, which repeat material about soybeans from earlier documents, discuss: (2) Storage. (3) Planting. (4) Cultivation and weeding. (5) Harvesting. (6) Storage of the harvested soybeans.

The next-to-last paragraph states: Character (*benxin*) of the soybean. The flavor is sweet and the nature (*qi*) is warm. Benefits the *qi* and blends to the middle evens the temperament. Prolonged ingestion makes the body heavy. You can cook it by parching, or you can boil it. Its nature is cooling. If you make soy nuggets (*shi*), then it becomes cold. If you make jiang or raw sprouts, then its nature is neutral. When the cattle eat it, it is warming. But when the horses eat it, it is cooling. So, although it is one substance, its nature changes. If you parch the beans and eat them with pork, you may die of suffocation. Small children should avoid it, but after they are 10 years old they may eat it. If you eat hempseeds (*mazi*) or acorns? (*hobu*) you should not eat parched soybeans; if you do, you will have scars.

The section titled “sweet melon” notes: Plant sweet melon together with soybeans. After the soybean seedlings emerge to a height of 4-5 inches (*cun*), pinch them off. After several leaves appear on the melon plants, then you pinch off the soybean seedlings (*doumiao*).

The section titled “Season of spring. Agricultural time. Plant seasonal beans” (*dou*) states that the common bean (later called *caidou*; *Phaseolus vulgaris*) was called “four seasons bean” (*shijidou*). The passage describes what it looks like, explains that it is a legume (*shu*), and tells when to plant and when to harvest. Its nature (*qi*) is warm and its flavor is sweet. See Li 1958 #580. Note: The term *caidou* is not mentioned. These are the most widely used beans throughout Latin America and the American Southwest—where they are known as frijoles. However, they are not widely cultivated nor used as food in China. (Translated by H.T. Huang, PhD, Jan. 2003, May 2003).

Bray (1984, p. 451, 629): “Records of the three departments of agriculture.” Qing dynasty. Preface 1760. Citing this work from Szechuan, Bray notes that it gives the first detailed Chinese account of sorghum cultivation techniques, which are very similar to those for millets.

138. Tiaodingji [The harmonious caldron]. 1765-1860? China. Undated. [Chi]

• **Summary:** Wade-Giles reference: *T'iao Ting Chi*. Qing dynasty. This is a collection of recipes starting in about the year 1750. Huang (2000) says that this undated work was compiled during the Qing dynasty, between 1760 and 1860. Compiler unknown. The original hand-written manuscript is in the Beijing Library. First printed in a 1986 edition by Hsing Po-T'ao, published by Commerce Publishers in Beijing (p. 625). This is the most comprehensive of the pre-modern food canons. A massive tome covering 871 pages and containing 2,700 recipes, it includes about 250 entries on fermentations and food processing. Parts of it were said to be in circulation before 1765, but other parts perhaps no earlier than 1860. There is great interest in the origin of this book among Chinese food historians, since many of the recipes in it are identical to those in the *Suiyuan Shidan* [Recipes from the Sui Garden], By Yuan Mei (W.-G. *Sui Yuan Shih Tan*, by Yüan Mei). The questions arise: Which book is earlier? Who copied whom? Regardless, this is a book we cannot ignore (p. 132). This massive Qing recipe book does not mention soy sprouts (p. 297).

In Chapter 3, “Meats,” it uses jiang (fermented soybean paste) in 58 recipes, regular soy sauce called *qingjiang* (W.-G. *ch'ing chiang*) in 4 recipes, called *jiangyou* (W.-G. *chiang yu*) in 138 recipes, and called *jiangshui* (W.-G. *chiang shui*) in 2 recipes, and soy nuggets (*shi*) in 2 recipes.

In Chapter 7, “Vegetables,” it uses jiang in 33 recipes, regular soy sauce called *jiangyou* (W.-G. *chiang yu*) in 66 recipes, called *jiangzhi* (W.-G. *chiang chih*) in 1 recipe, and called *jiangshui* (W.-G. *chiang shui*) in recipe, and soy nuggets (*shi*) in 1 recipe. In this recipe book, which may be considered the summation of culinary arts in China in the 19th century, there are 212 entries for soy sauce (under various names) versus only 91 for jiang. Soy sauce had come to be the more widely used seasoning, but jiang was

still important—as it is today (p. 372-73). Fish jiang and shrimp jiang are mentioned (p. 387n). Page 86 describes various ways of preparing *mianjin* (W.-G. *mien-chin*) (wheat gluten) (Huang 2000, p. 502).

139. Encyclopaedia Britannica; or, A dictionary of arts, sciences, &c. On a plan entirely new: by which, the different sciences and arts are digested in the form of distinct treatises or systems, comprehending the history, theory, and practice of each, according to the latest discoveries and improvements... 2nd ed.: Dolichos. 1779. Edinburgh: Printed for J. Balfour and Co. 10 volumes publ. 1778-1783. See vol. 4, p. 2511-12.

• **Summary:** “Dolichos... 2. The soja is a native of Japan, where it is termed *daidsu*; and, from its excellence, *mame*; that is, ‘the legumen or pod,’ by way of eminence. It grows with an erect, slender, and hairy stalk, to our height of about four feet. The leaves are like those of the garden kidney-bean (*See *Phaseolus*). The flowers are of a bluish white, and produced from the bosom of the leaves, and succeeded by bristly hanging pods resembling those of the yellow lupine, which commonly contains two, sometimes three, large white seeds. There is a variety of this kind with a small black fruit, which is used in medicine. Kempfer [Kaempfer] affirms that the seeds of this when pounded and taken inwardly, give relief in the asthma. This legumen is doubly useful in the Japanese kitchens. It serves for the preparation of a substance named *miso*, that is used as butter; and likewise a pickle celebrated among them under the name of *sooju* or *soy*. To make the first, take a measure of mame, or the beans produced by the plant: after boiling them for a considerable time in water, and to a proper degree of softness, they beat or bray them into a softish pulse; incorporating with it, by means of repeated braying, a large quantity of common salt, four measures in summer, in winter three. The less salt that is added, the substance is more palatable; but what it gains in point of taste, is loses in durability. They then add to this mixture a certain preparation of rice, to which they give the name of *koos*; and, having formed the whole into a compost, remove it into a wooden vessel which had lately contained their common ale or beverage named *sacki*. In about two months it is fit for use. The koos give it a grateful taste; and the preparing of it, like the polenta of the Germans, requires the skilful hand of an experienced master. For this reason there are certain people who make it their sole business to prepare the koos, and who sell it ready made for the purpose of making miso: a substance which cannot fail to be greatly valued in those countries, where butter from the milk of animals is unknown. To make *sooju*, or *soy*, they take equal quantities of the same beans boiled to a certain degree of softness; of muggi, that is corn, whether barley or wheat, roughly ground; and of common salt. Having properly mixed the beans with the pounded corn, they cover up the mixture,

and keep it for a day and a night in a warm place, in order to ferment; then, putting the mass into a pot, they cover it with the salt, pouring over the whole two measures and a half of water. This compound substance they carefully stir at least once a-day, if twice or thrice the better, for two or three months: at the end of which time, they filtrate and express the mass, preserving the liquor in wooden vessels. The older it is, the better and the clearer; and if made of wheat instead of barley, greatly blacker. The first liquor being removed, they again pour water upon the remaining mass; which, after stirring for some days, as before, they express a second time, and thus obtain an inferior sort of soy.”

Note 1. The descriptions of how to make miso and soy sauce are based on those of Englebert Kaempfer, published in 1712 in Latin in his book *Amoenitatum exoticarum...* and first written in Japan in 1690-92.

Note 2. This is the earliest English-language document seen (March 2009) that contains the word *miso*. While some miso (though usually described as a paste) has a consistency like butter, and a few types have a yellow color resembling that of butter, the Japanese have never used miso like butter. Rather they use it as a base for soups, sauces, and stews. The misunderstanding that miso “is used as butter” probably comes from the following statement by Englebert Kaempfer in his book *The history of Japan...* (1727). “Of the Meal of these Beans is made what they call *Midsu*, a mealy Pap, which they dress their Victuals withal, as we do with Butter.” Concerning its etymology, the word “miso” seems to have come into English from the German *Midsu*, and into German from the Japanese *miso*.

Note 3. This is the earliest English-language document seen (April 2001) that uses the word “sooju” to refer to shoyu or soy sauce. Kaempfer used the same term (written *Sooju*) in 1712 in his book *Amoenitatum exoticarum...* which was written in Latin.

Note 4. This is also the earliest English-language document seen (Oct. 2006) that uses the term “the soja” as a singular noun to refer to the soybean.

Note 5 This is the earliest document seen (Dec. 2002) which states that soybeans can be used to give relief from asthma or other allergic conditions. Address: Edinburgh, Scotland.

140. Bryant, Charles. 1783. *Flora diætica: Or history of esculent plants, both domestic and foreign. In which they are accurately described, and reduced to their Linnæan generic and specific names. With their English names annexed, and ranged under eleven general heads.* London: B. White. 379 p. See p. 297, 300-01. [2 ref]

• **Summary:** In Chapter VII. Leguminous plants. Section I. Pods and seeds of herbaceous plants (p. 297), there is a listing for “3. *Dolichos soja*. East India Kidney Bean.” Pages 300-01 contain full details: “*Dolichos soja*. Indian Kidney Bean. Lin. Sp. pl. 1023. This is a perennial and a

native of India. It sends up an erect, slender, hairy stalk, to the height of about four feet, furnished with leaves much like those of the Common Kidney Bean, but more hairy underneath. The flowers are produced in erect racemi, at the bosoms of the leaves; they are of the pea-kind, of a bluish white color, and are succeeded by pendulous, hairy pods, resembling those of the Yellow Lupine, each containing three or four oval, white seeds, a little larger than peas.

“This plant is much cultivated in Japan, where it is called *Daidso*, and where the pods supply their kitchens for various purposes; but the two principal are with a sort of butter, termed *Miso*, and a pickle, called *Sooju* or *Soy*.”

“The Miso is made by boiling a certain quantity of the beans for a considerable time in water, till they become very soft, when they are repeatedly brayed with a large quantity of salt, till all is incorporated. To this mass they add a certain preparation of rice, named *Koos* [probably *koji*; Kaempfer introduced this term in 1712], and having well blended the whole together, it is put into a wooden vessel, where in about 2 months it becomes fit for use, and serves the purposes of butter. The manner of preparing the *Koos* is a kind of secret business, and is in the hands of some certain people only, who sell the *Koos* about the streets, to those who make Miso.

“In order to prepare *Sooju* they take equal quantities of beans, wheat, or barley-meal, and boil them to a pulp, with common salt. As soon as this mixture is properly incorporated, it is kept in a warm place for twenty-four hours to ferment; after which the mass is put into a pot, covered with salt, and a quantity of water poured over the whole. This is suffered to stand for two or three months, they never failing to stir it well at least once a day, if twice or thrice it will be the better; then the liquor is filtered from the mass, and preserved in wooden vessels, to be used as occasions require. This liquor is excellent for pickling anything in, and the older it is the better.”

Note 1. Bryant’s account is largely based on that of Engelbert Kaempfer in his book *Amoenitatum Exoticarum*, written in Japan in 1690-92, and published in 1712. Bryant’s book has an excellent, extensive index. It is the earliest English-language document seen (May 2006) that contains a detailed botanical description of the soybean.

Note 2. This is the earliest document seen (July 2006) concerning soybeans (but only wild perennial relatives of soybeans) in India; cultivated soybeans have not yet been reported.

Note 3. This is the earliest English-language document seen (March 2009) that uses the term “a sort of butter” to refer to miso.

Also discusses: Several species of edible seaweeds [sea vegetables]: “13. *Fucus saccharinus*—Sweet *Fucus* or *Sea Belts*. Lin. Sp. pl. [*Species plantarum*] 1630. *Fucus alatus sive phafnagoides*. Bauh. Pin. 364 [*Caspar Bauhin*. 1623. *Pinax Theatri Botanici*].

“14. *Fucus palmatus*—Handed *Fucus*. Lin. Sp. pl. 1630.

“15. *Fucus digitatus*—Fingered *Fucus*. Hud. Flo. Ang. 579 [William Hudson. 1762, 1798. *Flora Anglica*]. *Fucus arboreus polyschides edulis*. Bauh. Pin.

“16. *Fucus esculentus*—Edible *Fucus* Hud. Flo. Ang. 578 (p. 90-91, 100-01).

“39. *Ulva lactuca* or Green laver. Lin. Sp. pl. 1632. *Muscus marinus lactucæ similis*. Bauh. Pin. 364 (p. 117-18).

Amaranthus oleraceus or Esculent Amaranth from India (p. 119). *Arachis hypogæa* or American Ground Nut [Peanut] (p. 298-99). *Cicer arietinum* or Chick Pea [Chick Pea] (p. 299; it “grows naturally among the corn in Spain and Italy, and it is much cultivated in these places for the table... It is much cultivated in Barbary [the Mediterranean coast of north Africa], by the name of *Gravances*, and is counted one of their best sorts of pulse”). *Ervum lens* or Lentil (p. 301-02; it “is a common weed in the cornfields of France... *Lentils* are a strong, flatulent food, very hard of digestion, and therefore seldom used now but to boil in soups, in order to thicken them”). *Lotus tetragonolobus* or Square-podded Pea [Winged Bean]. *Lotus ruber*, siliqua angulosa Bauh. Pin. 332 (p. 302-03). *Lupinus albus* or White Lupine (p. 303-04). *Ceratonia siliqua* or Carob tree (St. John’s bread, p. 309-10). *Coffea Arabica* or Arabian coffee (p. 311). *Coffea occidentalis* or American coffee (p. 311-12). *Coix lacryma Jobi* or Job’s tears (p. 332). *Polygonum fagopyrum* or Buck Wheat (p. 343). Ginkgo or Maiden-hair tree (p. 377-78). Bread fruit tree (378-79). Some of these are described in detail in separate records.

Note 4. This is the earliest Western document seen (Jan. 2005) that discusses sea vegetables (p. 117-18).

Note 5. This is the earliest document seen (June 2006) that mentions *Coix lacryma Jobi* or Job’s tears.

Note 6. This is the earliest English-language document seen (June 2008) that gives a scientific name for lentils (*Ervum lens*).

Note 7. This is the earliest English-language document seen (June 2008) that mentions the chick pea (which it calls “Chick Pea”) or gives its scientific name (*Cicer arietinum*).

Near the front of the book, a section titled “Terms explained” (xiii-xvi) is a glossary that gives concise definitions of the following botanical terms: Annual, biennial, perennial, sessile, serrated, crenated, pinnated or winged, peduncle, spike, spicula, panicle, spadix, racemus, umbel, calyx, catkin, petal, glume, arista or awn, floret, germen or seed bud, pericarpum, capsule, stamina, styles, stigma, summit. Address: Norwich, England.

141. Bryant, Charles. 1785. Carl Bryant’s Verzeichniss der zur Nahrung dienenden so wohl einheimischen als ausländischen Pflanzen. 2 v. [Flora diaetetica: Or history of esculent plants, both domestic and foreign. 2 vols.]. Leipzig:

Bey Weidemanns Erben und Reich. See Vol. I, Part I (Erster Theil), p. 478-80. 21 cm. [Ger]

• **Summary:** This is a German translation of the original 1783 English edition (which see). The section titled “*Dolichos Soja*. *Indian Kidney Bean*. Linn. Spec. plant. 1023.—*Sojabohne*” (p. 478-80) discusses the soybean (also called “*Daidso*”) and various soy products, including miso, koji (*Koos*), and soy sauce (*Der Sooja*).

Note 1. This is the earliest German-language document seen (March 2009) that mentions miso, which it calls *Miso*. The actual text reads: “... *aber macht man Suppen und eine Art Butter daraus, welche Miso heisst...*”

The chapter on legumes (p. 474-75) also discusses: (1) *Arrachis Hypogaea*. American ground nut. (2) *Cicer arietinum*. The chick pea, or Garavances. French: Pois Chiche. (3) *Dolichos Soja*. East Indian kidney beans. *Sojabohne*. (4) *Ervum Lens*. Lentil. (5) *Lotus edulis*. (6) *Lotus tetragonolobus*. Square podded crimson pea. *Spargelerbsen*. *Vierecktiger Schotenklee*. (7) *Lupinus albus*. (8) *Phaseolus vulgaris*. Common kidney bean. French: *Faseole*. *Haricot commun blanc*. (9) *Pisum sativum*. (10) *Pisum Americanum*. (11) *Pisum maritimum*. 12. *Vicia Faba*. Common garden bean

Note 2. Charles Bryant died 1799. Address: Norwich.

142. Lamarck, Jean Baptiste... de. 1790. Dictionnaire encyclopédique méthodique. Botanique. Vol. 2. *Dolic du Japon*, *Dolichos soja* Lin. [Systematic and encyclopedic dictionary. Botany. Vol. 2. The Soybean, *Dolichos soja*]. Paris: Chez Laporte, Imprimeur-Libraire. 774 p. See p. 299. [1 ref. Fre]

• **Summary:** Plants are listed by French names. The author lists the soybean under *Dolic*. as follows: “28. *Dolic du Japon*, *Dolichos soja*. Lin. *Dolichos caule erecto flexuos, racemis axillaribus eredis, leguminibus pendulis hispidis subdispermis*. Lin. Thunb. Fl. Jap. 282.

“*Phaseolus erectus, siliquis Lupini, fructu pisi majoris candido*. Kæmpf. Amoen Exot. 837. t. 838. Japonicè; daidsu s. mame. *Phaseolus Japonicus*. Raj. Suppl. 438. n°. 28 [John Ray. 1704. *Historia plantarum*. Vol. 3. *Supplementum*. See p. 438].

The original French reads: “*Sa tige est droite, haute d’un pied & demi, striée ou cannelée dans sa partie supérieure, & abondamment chargée de poils rousseâtres. Ses feuilles sont composées de trois folioles ovales, obtuses, velues, molles, soutenues sur des pétioles communs velus & striés. Les fleurs font petites, purpurines, disposées dans les aisselles des feuilles sur des grappes droites, velues, & fort courtes. Les gousses sont longues d’un pouce & demi, pendantes, un peu comprimées, pointues, dispermes, & couvertes de poils rousseâtres fort abondans. Cette plante croît au Japon, dans les Indes orientales, & est cultivée au Jardin du Roi. Les Japonois préparent avec ses semences une sorte de bouillie qui leur tient lieu de beurre, & dont ils font une sauce*”

fameuse, qui se sert avec les viandes rôties; ils nomment la bouillie *miso*, & la sauce *sooja* ou *soja*.”

In English, this means: “Its stalk is straight, a foot and a half high, striped or fluted in its upper part and abundantly covered with reddish or russet hairs. Its leaves are comprised of 3 oval leaflets, obtuse (rounded at the free end), hairy, soft, several leaves are borne on petioles that are hairy and striped. The flowers are small, purplish, arranged on the axils of the leaves, in straight clusters which are hairy and very short. The pods are an inch and a half long, pendant, slightly compressed (not round), pointed, dispermous, and covered with very abundant reddish hairs. This plant grows in Japan and the East Indies, and is cultivated at the Royal Garden (*Jardin du Roi*). It is an annual, and I have seen a living plant specimen. Using its seeds, the Japanese prepare a sort of paste [*miso*], which they use in place of butter, and that is also used to make a famous sauce, which is served with roasted meats. They call the paste *miso* and the sauce *sooja* or *soja*.”

Note 1. This is the earliest document seen (Feb. 2008) that has the word “*Soja*” in the title.

Note 2. Merrill stated incorrectly that Lamarck called the soybean “*Phaseolus max*” following Linnaeus. Address: Former officer in the Regiment de Beaujolais, Royal Academy of Sciences.

143. Ryôrisho. Fu to tôfu [Cookbook on wheat gluten and tofu]. 1790. Japan. 38 p. Unpublished manuscript. Japanese summary by Kawakami 1978, p. 175. [Jap]

• **Summary:** This must be the last volume of a three volume work. This one is about Zen vegetarian cookery (*shojin ryori*). The other two were about fish and poultry. There are a lot of tofu recipes, including Suizenji Tofu, Enmeiji Tofu, Uneri Tofu, and Shiruko Tofu. A description of how to make sweet simmered miso (*neri-miso*) is also given.

144. Shokumotsu waka honzô [The book of Japanese foods?]. 1795. Japan. [Jap]*

• **Summary:** Mentions natto miso soup (*nattô-jiru*).

145. Thunberg, Charles Peter. 1795. Travels in Europe, Africa, and Asia, made between the years 1770 and 1779. In four volumes. Vol. IV. Containing travels in the empire of Japan, and in the islands of Java and Ceylon, together with the voyage home. 2nd. ed. London: Printed for F. and C. Rivington. xix + 310 p. See p. 37, 88, 107, 121-22, 177. Index. 21 cm. [Eng]

• **Summary:** In the chapter on Japanese foods, we read (p. 37): “Rice, which is here exceedingly white and well-tasted, supplies, with the Japanese, the place of bread; they eat it boiled with every kind of provisions. *Miso* soup, boiled with fish and onions, is eaten by the common people, frequently three times a day, or at each of their customary meals. *Misos* are not unlike lentils, and are small beans, gathered from the

Dolichos soja.” Note 1. The latter sentence, which is incorrect, led many subsequent early writers to believe that the seeds of the soy bean were called miso, or that miso was a type of small bean. Rather, miso is a paste made from soy beans.

In the chapter on Japanese agriculture, we read (p. 88): “Of Beans, Peas, and Lentils, many sorts are cultivated, both the larger (*Phaseoli*) and the smaller (*Dolichos*). Of *Daidso* Beans (*Dolichos Soja*) the meal is used for dressing victuals, and the expressed juice for making Soy; as is likewise the whole Bean for the soup called *Miso*, which is a daily dish with the common people. *Atsuki* [Azuki] Beans likewise (*Phaseolus radiatus*) are ground to meal, of which small cakes are made with sugar.”

Note 2. This is the 2nd earliest English-language document seen (Jan. 2005) that clearly mentions azuki beans, which it calls *Atsuki Beans*. It is also the earliest English-language document seen (March 2006) that uses the word *Atsuki* to refer to azuki beans.

Note 3. It is not clear what Thunberg means by “meal” when he says “the meal is used for dressing victuals.”

In the chapter on Commerce, after discussing the tea trade, Thunberg writes (p. 107): “The *Tea Trade* is confined entirely to the inland consumption, the quantity exported amounting to little or nothing. The traffic in *Soy* [sauce], on the other hand is more considerable; and as the tea produced in this country is reckoned inferior to that of China, so the soy is much better than that which is brewed in China. For this reason, soy is not only exported to Batavia [Jakarta], in the wooden barrels in which it is made, but likewise sold from thence to Europe and to every part of the East Indies. In some places in Japan too the soy is reckoned still better than in others; but, in order to preserve the very best sort, and prevent its undergoing a fermentation, in consequence of the heat of the climate, and thus being totally spoiled, the Dutch at the Factory [at Desima / Dezima / Dejima] boil it up in iron kettles, and afterwards draw it off into bottles, which are then well corked and sealed [by applying bitumen / coal tar to the stopper]. This mode of treatment renders it stronger and preserves it better, and makes it serviceable for all kinds of sauce. The *Silk trade* is indeed in a very flourishing state in the empire...”

In the chapter titled “Residence at Dezima [1776], Previous to my Return Home,” the author writes (p. 121-22): “Soy-sauce, which is every where and every day used throughout the whole empire, I might almost say in every dish, and which begins even to be made use of in Europe, is prepared from Soy Beans (*Dolichos Soja*) and salt, mixed with barley or wheat. For this purpose, they cultivate this species of bean in several places, although it grows in great plenty wild. Scarcely any kind of legumen [legume] is more copiously used than this. The seeds are served up in soups, once or twice a day all the year round, to people of distinction or otherwise, to the poor and to the rich. *Soy* is

prepared in the following manner: The beans are boiled till they become rather soft; afterwards an equal quantity of pounded barley or wheat is added. These ingredients being mixed together, are set in a warm place, and covered up for four and twenty hours, that they may ferment. An equal quantity of salt is then added to the mixture, and twice and a half as much water is poured upon it. After it has been mixed in this manner in an earthen vessel, it must stand well covered two or three whole months together, during which period it is necessary however at first for it to be stirred about several times in the day for several days together. The liquor is then pressed and strained off, and kept in wooden vessels. Some provinces furnish better soy than others; but exclusively of this, it grows better and clearer through age. Its colour is invariably brown, and its chief excellence consists in the agreeable salt taste which it possesses.”

While in Colombo, Ceylon, in 1777 the author stated that “the *Dolichos pruriens* grew here tolerably common, with its hairy pods, the hairs of which attaching themselves to the hands, occasion much itching, which is allayed by oil, or decoction of rice, and are celebrated as a Vermifuge.”

Note 4. This plant appears in the index as “*Dolichos Soja*.”

Note 5. This is the earliest English-language document seen (March 2009) that contains the term “Miso soup.”

Note 6. On the title page, the author’s name is given as Carl Peter Thunberg, rather than Karl Peter. Of the four volumes, only vol. IV bears a date, which is 1795. The translator’s name is not given, not even in the “Translator’s preface” nor in any record on WorldCat / OCLC online bibliographic database. The original text was written in 1776. Yule & Burnell (1886, p. 651, and 1903, p. 859) state: “1776. An elaborate account of the preparation of Soy is given in *Thunberg’s Travels*, E.T., [vol.] iv. 121-122;”

Note 7. This is the earliest English-language document seen (Feb. 2008) that contains the word “Soy Beans” (or “Soy-Beans”) (p. 121-22).

Note 8. This is the earliest English-language document seen (Jan. 2006) that contains the term “soy-sauce” (or “soy sauce”). The *Oxford English Dictionary* says (incorrectly): “1818 Todd (transl. Thunberg), Soy-sauce is prepared from soy-beans (*dolichos soja*) and salt, mixed with barley or wheat.”

Note 9. Lewis and Murakami (1923, p. 223) state: “The third English edition of Charles Peter Thunberg’s *Travels* (London 1796) contains an English-Japanese vocabulary of approximately 1,500 words; this was probably the first English-Japanese vocabulary ever published. It seems to have been unknown to our author [Ranald MacDonald] and his scholars.” Address: Prof. of Botany, Univ. of Upsal [Uppsala], Sweden.

146. Thunberg, Karl Peter. 1796. *Voyages de C.P. Thunberg*. Tome second [Voyages of C.P. Thunberg. Vol. 2]. Paris: Benoit Dandre. iv + 544 p. See p. 3, 4, 145, 266-68. [Fre]

• **Summary:** An early traveler to East Asia who mentioned soyfoods was the Swedish doctor and prof. of botany at the Univ. of Uppsala, Carl P. Thunberg. In Chapter 20 titled “Japanese Foods” he states (p. 267-68): “Three times a day, with each meal, the people eat miso soup prepared with fish and leeks. These miso [he apparently thought miso was the name of a legume; see Thunberg 1796 in English] closely resemble lentils. They are the small dolich beans of Japan (*ce sont de petites fèves de dolich du Japon*).*” (Footnote: * “*Dolichos soja*. Lam. Diction. [Lamarck 1790. Dictionary] No. 28).”

“Miso or soy sauce constitute the principal food of the Japanese. People of all levels, great or small, rich or poor, eat them several times a day year-round. Here is how they are prepared. The beans are cooked until they are just soft, then they are mixed with an equal quantity of barley or wheat, and the mixture is allowed to ferment for 24 hours in a warm place. Now an equal quantity of salt and 2½ times the amount of water. The mixture is put in an earthen pot, which is well closed and left for 2½ months; it is stirred during the initial days. After the necessary time the liquid is pressed out and stored in wooden kegs. The inhabitants of certain provinces make better ‘soya’ than those in others. Moreover, the longer it ages, the tastier and clearer it becomes. It is always brown and its principal flavor is a pleasant saltiness. The Japanese also eat fish, boiled or fried in oil” (p. 267-68).

“The tea of Japan is inferior to that of China. However, Japanese ‘soya’ [soy sauce] is preferable to that of the Chinese. It is shipped in numerous vats to Batavia [today’s Jakarta, Indonesia], India, and Europe. The Dutch have found a way of protecting it from the effects of heat and of preserving the fermentation. They boil it in an iron pot, funnel it into bottles, and seal the mouths with pitch. This liquid retains all its ‘force’ and can be mixed with all other sauces.” Note: All this took place long before Appert’s invention of canning in 1809 and Pasteur’s invention of pasteurization in 1862. In fact pasteurization had been practiced in Japan for 200 to 300 years before this time.

In Chapter 23, “The State of Agriculture in Japan,” the author notes (p. 291): The Japanese plant a great deal of rapeseed, and the seed furnishes an excellent oil for lamps. In Japanese, the plant is named *na tanne* and the oil *na tanne abra* or *na tanne no abra* (sic, *natane abura*). “Soy flour (*La farine des fèves de daidsou* (Footnote: *Dolichos soïa*)) is used in various dishes. The liquid that is pressed out is used to make soy sauce. The roots are put in a soup named *miso*, which the people use daily for nourishment. Small cakes are also made with the flour of azuki beans (*la farine de haricots d’atsouki* (Footnote: *Phaseolus radiatus*)) mixed with sugar.” Note: This is the earliest French-language document seen (Jan. 2005) that mentions azuki beans, which it calls *haricots d’atsouki*.

Pages 314-15 state: “Their soy sauce, which has been introduced by many Europe countries, is made with soybeans (*se fait avec des fèves-soya* (Footnote: *Dolichos soya*)), barley or wheat, and salt. Although these beans come spontaneously and abundantly in many places, the consumption which they make of this flour causes them to take particular care with the plant’s cultivation.” Address: France.

147. Hemmij, Gijsbert. 1797. Diary. In: Leonard Blussé, Cynthia Viallé, et al, eds. 2004. *The Deshima Diaries Marginalia, 1740-1800*. Tokyo: Japan-Netherlands Institute. xl + 898 p. See p. 707 (#27).

• **Summary:** 1797 May 12—“I summond the *rapporteurs* and handed them three kinds of Dutch cakes and three kinds of confitures in newly made boxes for the governor. They returned in the afternoon and assured me that the governor had been very pleased and he was sending me a reciprocal present of two flasks of medicinal *sake*, a couple of boxes of flour and *laxa*, and a barrel of *miso* fish” [fish pickled in miso]. Address: Opperhoofd (Chief of the Dutch factory), Deshima, Nagasaki, Japan.

148. *Encyclopaedia Britannica; or, A dictionary of arts, sciences, and miscellaneous literature...* 3rd ed... greatly improved. 18 vols. 1797. Edinburgh: Printed for A. Bell and C. Macfarquhar.

• **Summary:** In vol. 6, part 1 (D-E), the entry for *Dolichos* (p. 81) states: 2. The soja is a native of Japan, where it is termed *daidsu*; and, from its excellence, *mame*; that is, “the legumen or pod,” by way of eminence. It grows with an erect, slender, and hairy stalk, to the height of about four feet. The leaves are like those of the garden kidney-bean *. The flowers are of a bluish white, and produced from the bottom of the leaves, and succeeded by bristly hanging pods resembling those of the yellow lupine, which commonly contain two, sometimes three, large white feeds. There is a variety of this kind, with a small black fruit, which is used in medicine. Kempfer [Kaempfer] affirms, that the seeds of this when pounded and taken inwardly give relief in the asthma. This legumen is doubly useful in the Japanese kitchens. It serves for the preparation of a substance named *miso*, that is used as butter; and likewise a pickle celebrated among them under the name of *sooju* or *soy*. To make the first, they take a measure of *mame*, or the beans produced by the plant: after boiling them for a considerable time in water, and to a proper degree of softness, they beat or bray them into a softish pulse; incorporating with it, by means of repeated braying, a large, quantity of common salt, four measures in summer, in winter three. The less salt that is added, the substance is more palatable; but what it gains in point of taste, it loses in durability. They then add to this mixture a certain preparation of rice, to which they give the name of *koos* [*koji*]; and having formed the whole into a

compost, remove it into a wooden vessel which had lately contained their common ale or beverage named *sacki*. In about two months it is fit for use. The *koos* gives it a grateful taste; and the preparing of it, like the polenta of the Germans, requires the skillful hand of an experienced master. For this reason there are certain people who make it their sole business to prepare the *koos*, and who sell it ready made for the purpose of making miso: a substance which cannot fail to be greatly valued in those countries where butter from the milk of animals is unknown.

“To make *sooju* or *soy*, they take equal quantities of the same beans boiled to a certain degree of softness; of *muggi*, that is corn, whether barley or wheat, roughly ground; and of common salt. Having properly mixed the beans with the pounded corn, they cover up the mixture, and keep it for a day and a night in a warm place, in order to ferment; then putting the mass into a pot, they cover it with the salt, pouring over the whole two measures and a half of water. This compound substance they carefully stir at least once a-day, if twice or thrice the better, for two or three months: at the end of which time, they filtrate and express the mass, preserving the liquor in wooden vessels. The older it is, the better and the clearer; and if made of wheat instead of barley, greatly blacker. The first liquor being removed, they again pour water upon the remaining mass; which, after stirring for some days, as before, they express a second time, and thus obtain an inferior sort of *soy*.”

For *Sakki* (*saké*) see vol. 9, part 1 (p. 71, under Japan). Address: Edinburgh, Scotland.

149. Matsudaira, Fumai? 1800. *Yotsu no toki no hana* [Flowers of the four seasons]. Japan. Publisher unknown. 2 large volumes. Japanese summary by Kawakami 1978, p. 157. [Jap]

• **Summary:** These two volumes of writing on cookery contain information on tea ceremony cuisine (*kaiseki ryori*) menus, including grilled tofu (*yaki-dôfu*), Simmering Tofu (*Yu-dôfu*), Miso no Sashimi, Natto Miso Soup (*Natto-jiru*), and Yamabuki Shoyu. The author, Matsudaira, lived 1751-1818.

150. Thunberg, Charles Peter. 1802. *Travels in Europe, Africa, and Asia, performed between the years 1770 and 1779*. In: William Fordyce Mavor, ed. 1802. *An Historical Account of the Most Celebrated Voyages, Travels, and Discoveries, from the Time of Columbus, to the Present Period*. Philadelphia, Pennsylvania: Published by Samuel F. Bradford. Vol. 12 of 14. 299 p. See p. 217, 236, 267, 275. Series: Early American Imprints: Second series no. 2640.

• **Summary:** In writing about Japan, Thunberg states: Page 217: Shimonoseki “is situated at one extremity of Nippon, the largest of all the islands, and contains the two capitals of the kingdom. On the seashore a kind of ulva, called *AwaNori*, is found, which, when dried and roasted over the

coals, and afterwards pulverized, is eaten with boiled rice, and sometimes put into miso-soup.”

Page 236: “The Japanese eat thrice a day and their general fare is miso-soup boiled with fish and onions.”

Page 267: “Ladies do not eat with the men, but by themselves. Rice supplies the place of bread, and is boiled with every kind of provisions. Miso-soup, boiled with fish and onions, is the customary food of the common people. Misos are small beans, like lentils, the produce of the *dolichos soja*. Fish and fowls are very plentiful, and are eaten in abundance. Even the flesh of the whale is a common dish among the poorer people.

“Tea and sakki constitute the whole beverage of the Japanese. Wines and distilled liquors they can scarcely be prevailed on to taste. Hitherto they have never suffered themselves to be corrupted by European modes of living, but still retain their original temperance and frugality... Sakki is transported to Batavia as an article of commerce;...”

Page 275: “Rice is their principal corn. Wheat, barley, and rye are little used... They have many kinds of beans and peas, and also of alliaceous plants, turnips, and cabbages. From the seeds of the latter they express an oil for their lamps.” Address: M.D., Knight of the Order of Vasa, Prof. of Botany, Univ. of Upsal [Uppsala], ect. Sweden.

151. Smith, Thomas. 1803. *The wonders of nature and art; or, A concise account of whatever is most curious and remarkable in the world; Whether relating to its animal, vegetable, and mineral productions, or to the manufactures, buildings, and inventions of its inhabitants, Compiled from historical and Geographical works, of established celebrity, and illustrated with the Discoveries of modern travellers.* 12 vols. London: Printed for J. Walker. 282 p. See vol. 6, p. 277. Illust. 15 cm.

• **Summary:** An encyclopedia. In Chapter VIII, “Of Japan” (p. 230+), in the section titled “Customs, manners, &c.” the author borrows text from Thunberg (1802, p. 267) without using quotation marks (p. 259): “Ladies do not eat with the men, but by themselves. Rice supplies the place of bread, and is boiled with every kind of provisions. Fish and fowls are very plentiful, and are eaten in abundance; but miso-soup * boiled with fish and onions is the customary food of the common people.”

Footnote: *”Misos are small beans, like lentils, the produce of the *dolichos soja*.” Address: Rev. and author [England].

152. Sugino Bakuka. 1803. *Shinsen hôchô kakehashi* [Newly selected kitchen knife ladder]. Osaka Shorin: Akamatsu Kyubei and Asano Yahei. 176 p. Japanese summary by Kawakami 1978, p. 79. [Jap]

• **Summary:** Cooking know-how for family use including descriptions of how to make shoyu, vinegar, miso, etc.

Contains many illustrations of how to set the table, etc. The author wrote this more for family than for professional use.

153. **Product Name:** [Tamari, and Miso].

Foreign Name: Tamari, and Miso.

Manufacturer’s Name: Minato-ya. Renamed Sato Shinnosuke Shoten in 1909, then San-Jirushi Brewing Corp. in 1963.

Manufacturer’s Address: Ooaza Senba, Kuwana-cho, Kuwana-gun, Ise-no-kuni, Japan.

Date of Introduction: 1804.

Ingredients: Soybeans, water, salt.

Wt/Vol., Packaging, Price: Wooden kegs.

How Stored: Shelf stable.

New Product–Documentation: San Jirushi advertisements in 1980s. Talks with Steve Earle and Michael Fountain. Letter from Steve Earle. 1988. March 7. The best source seen up to this time on the early history of San Jirushi. The product was originally called tamari, not “tamari-shoyu.”

Note: This is the earliest record seen (April 2001) concerning San Jirushi of Kuwana, Japan.

154. Miller, Philip. 1807. *The gardener’s and botanist’s dictionary: Containing the best and newest methods of cultivating and improving the kitchen, fruit, and flower garden and nursery; of performing the practical parts of agriculture; of managing vineyards, and of propagating all sorts of timber trees... The whole corrected and newly arranged..., by Thomas Martyn Vol. II.* London: Printed for F.C. & J. Rivington. 2 vol. in 4. Unpaginated. 38 cm. 20 plates. [9 ref. Eng]

• **Summary:** The plants are arranged alphabetically in the book by genus, but not alphabetically within one genus by species. “33. *Dolichos Soja*: *Lin. spec.* 1023. *sys.* 659. *Reich.* 451. *fl. zeyl. n.* 534. *mat. med.* 171. *Kaempf. amoen.* t. 838. (Phaseolus). *Thunb. jap.* 282. *Lour. cochinch.* 441. *Rumph. amb.* 5. t. 140. (Cadelium). *Stems flexuose, racemes axillary, erect, legumes pendulous, hispid, containing about two seeds.*”

Three pages later, under “33.” is a description of the plant and its uses. “Stem round at bottom and smooth; above striated, very hirsute, a foot and more in height. Leaves petioled, hirsute: leaflets petioled, ovate, obtuse with a point, entire, the middle one on a longer petiole and larger, an inch in length: petiole striated, hirsute, a finger’s length. Flowers in short, erect, hirsute racemes: subsessile, from three to five together. Corollas purple, scarcely larger than the calyx.*

“Native of the East Indies, Ceylon, Japan, &c.

“The seeds, which are usually called *Miso* [sic] in Japan, are put into soups, and are the most common dish there, insomuch that the Japanese frequently eat them three times a day. The *Soja* [soy sauce] of the Japanese, which is preferred to the *Kitjap* of the Chinese, is prepared from

these seeds, and is used in almost all their dishes, instead of common salt. The Chinese also have a favourite dish made of these seeds, called *Teu hu* or *Tau hu* [tofu], which looks like curd, and though insipid in itself, yet with proper seasoning as [is] agreeable and wholesome.**”

Footnotes: “*Thunb. and Linn. **Thunb. and Loureiro.”

Glycine javanica: “*Java Glycine. Lin. spec. 1024. Reich. 453. Thunb. in Linn. trans. 2. 340. Leaves ternate; stalk villose; petioles rough-haired; bractes lanceolate minute.*

“Stem twining, as in *Phaseolus*, with yellow, reflex hairs scattered over it. Leaves of *Phaseolus*. Pedicels yellow, with close hairs. Stipules, to the petioles oval-oblong, to the peduncles lanceolate. Peduncles the length of the leaves, terminated by an ovate-oblong, close spike of nodding violet-coloured flowers, with very minute bractes between them.—Native of the East-Indies*; and near Nagasaki in Japan, where it is called *Fajo Mame*, and flowers in september and october [sic].**” Footnotes: “*Linn spec. **Thunberg.”

On the title page, the subtitle reads: “To which are now first added a complete enumeration and description of all plants hitherto known, with their generic and specific characters, places of growth, times of flowering, and uses both medicinal and economical. The whole corrected and newly arranged, with the addition of all the modern improvements in landscape gardening, and in the culture of trees, plants, and fruits, particularly in the various kinds of hot houses and forcing frames: with plates explanatory both of them, and the principles of botany. By Thomas Martyn, B.D., F.R.S. Regius Professor of Botany in the University of Cambridge.”

This elegant set of large books consists of 4 volumes, plus 2 volumes of plates. The soybean appears only in volume 2. Miller gives the most detailed botanical description of the soybean in English up to this time.

Note 1. Philip Miller was head of the famous Chelsea Physic [botanic] Garden in England. Among his many students was William Aiton, who introduced the soybean to England.

Note 2. This is the earliest English-language document seen (Oct. 2004) that uses the term “twining” to describe wild perennial ancestors of the soybean.

Note 3. This is the earliest English-language document seen (Feb. 2004) that uses the word “*Teu hu*” (or “*teu-hu*”), or the word “*Tau hu*” (or “*Tau-hu*”) to refer to Chinese-style tofu.

Note 3. This is the earliest English-language document seen (Feb. 2004) that uses the word “curd” in connection with tofu.

Note 4. This is the earliest English-language document seen (Jan. 2004) that uses the word “leaflets” (or “leaflet”) in describing the soybean plant.

Note 5. This is the earliest English-language document seen (July 2001) that uses the word “petiole” (or “petioles”

or “petioled”) in connection with the soybean plant.

Webster’s Dictionary defines petiole (derived from New Latin for little foot), a word first used in 1753, as “a slender stem that supports the blade of a foliage leaf,” i.e., the stem of a leaf.

Webster’s Dictionary defines stipule (derived from New Latin *stipula*, which is derived from the Latin word meaning “stalk”), a word first used in about 1793, as “either of a pair of appendages borne at the base of the leaf in many plants.” Address: F.R.S., Gardener to the Worshipful Company of Apothecaries at their Botanic Garden in Chelsea [England] and a Member of the Botanic Academy at Florence.

155. Ryôri no sho [The book of cooking]. 1807. Japan. 50 p. Unpublished. Japanese summary by Kawakami 1978, p. 187. [Jap]

• **Summary:** This is not the book’s true name, but a tentative name applied after it was written. It is not a recipe book but a book on how to make foods, including shoyu and miso. The author was a person who could experiment with shoyu production. A lot of old things are mentioned. The book must be a collection of writings about what the author has heard and also quotations from other books.

156. The new encyclopædia; or, universal dictionary of arts and sciences: *Dolichos soja*. 1807. London: Printed for Vernor, Hood, and Sharpe. See vol. VII. Dol. (p. 417-418). [2 ref. Eng]

• **Summary:** “3. *Dolichos Soja* is a native of Japan, where it is termed *daidsu*; and, from its excellence, *mame*; that is, the *legumen* or *pod*, by way of eminence. It grows with an erect, slender, and hairy stalk, to the height of about 4 feet. The leaves are like those of the garden kidney-bean. See *Phaseolus*. The flowers are of a bluish white; are produced from the bosom of the leaves, and succeeded by bristly hanging pods resembling those of the yellow lupine, which commonly contain two, sometimes 3, large white seeds. There is a variety with a small black fruit, which is used in medicine.

“Kempfer [Kaempfer] affirms, that the feeds when pounded and taken inwardly give relief in the asthma. This legumen [legume] is doubly useful in the Japanese kitchens. It serves for the preparation of a substance named miso, that is used as butter; and likewise of a pickle celebrated among them under the name of sooju or soy. See these articles.”

Note: This is the earliest English-language document seen (Feb. 2008) that has the word “Soja” in the title.

157. Pinkerton, John. 1811. A general collection of the best and most interesting voyages and travels in all parts of the world: Many of which are now first translated into English. Digested on a new plan. Vol. 7. London: Printed for Longman, Hurst, Rees, Orme, and Brown. 820 p. See p. 269.

• **Summary:** Each book of this 17-volume work is composed of unnumbered chapters, each describing a different voyage. One of these (p. 231-270) is “The embassy of Peter de Goyer and Jacob de Keyzer from the Dutch East India Company to the Emperor of China in 1655. By John Nieuhoff, Steward to the Ambassadors. Translated from the Dutch.”

The Introduction begins: “Although China was discovered over land by Marco Polo the Venetian, towards the end of the thirteenth century, yet it was very little known to Europeans, till the Portuguese [Portuguese] arrived there by sea towards the end of the fifteenth, and the Romish [Catholic] missionaries found admittance into the empire. In 1517, they established a trade at Quan-tong [Guangdong], commonly called Kanton [Canton]: afterwards they settled a factory also at Ning Po [Ningbo], called by them Liampo, on the eastern part of China, and drove a considerable trade along the coast, between those two famous ports, till their unsufferable [insufferable] pride and insolence brought on their destruction every where but at Ma-kau, or Makao [Macau], an island in the mouth of the river of Kanton [Pearl River], which they still hold, though under great restrictions.”

On p. 269 we read that the daily allowance of food by the two ambassadors (de Goyer and Keyzer) included “six tael of mison” (possibly miso). Note: A tael is a unit of weight equal to 1/10 of a catty, or about 50 gm.

“Their secretaries daily allowance was, one katti [catty, a measure of weight] of fresh meat, five measures of tea, one katti of meal, one measure of taufoe [tofu],... four measures of oil, four tael of mison [miso?], one katti of herbs, and one cup of arrac” [arrack, a strong distilled alcoholic beverage mainly in South- and Southeast Asia].

Note 1. Kaempfer’s History of Japan—first published in English in 1727—also appears in this book. The text is almost identical to the 1727 text. The section about soybeans and soyfoods is in Chapter 6, pages 697-98.

Note 2. Pinkerton lived 1758-1826. Address: Author.

158. Asano, Kozo? 1813. Maniawase ryôri. Sassoku hôchô. Shôjin gyorui [Makeshift, quick cooking. For Zen vegetarian and fish cookery]. Osaka, Japan: Kochiya Kashichi. Japanese summary by Kawakami 1978. [Jap]

• **Summary:** The author (who is not known for sure, by may be Asano) lists recipe names and explains briefly how to make them, including recipes using miso.

159. Chen Jing. comp. 1814. Suanqi wuchanshu [Inventory of products from Suanqi]. China. Passage on soy reprinted in C.N. Li 1958 #335, p. 237. [Chi]

• **Summary:** Wade-Giles reference: *Suan Ch’i Wu Ch’an Shu*, compiled by Ch’ên Ching. Qing dynasty. The section titled “Yellow soybeans” (*huangdou*) states: The soybean has many uses. You can make tofu (*fu*), or press out the oil

(*you*), or make soy nuggets (*shi*) or jiang—with the soybeans produced in our village or elsewhere. But we seldom consume soybeans directly. They come in various colors: black, white, yellow, dark brown, green, or spotted / speckled (*ban*). According to the pharmacopoeia (*bencao*) literature, when eaten raw it is neutral (Note: Dr. Huang has never heard of eating soybeans raw), when eaten parched or stir-fried (*chao*) it is heating, when eaten boiled it is cooling, when made into soy nuggets (*shi*) it is cold. When eaten by cattle it is warm. When eaten by horses it is cold. It is also said that if small children eat the parched beans with pork, they will suffocate. But after the age of ten years, they are out of danger; we do not know the reason. Dr Huang adds: “I wonder how that story got started.” (Translated by H.T. Huang, PhD, March 2003).

160. Morrison, Robert. 1815-1823. A dictionary of the Chinese language in three parts. 6 vols. Macao. Printed at the Honourable East India company’s press by P.P. Thomas. 30 cm. [Eng; Chi]

• **Summary:** S.W. Williams, in “A Syllabic Dictionary of the Chinese Language,” starts his preface by noting the great importance of this very early Chinese dictionary. “This work will ever remain a monument to his industry and scholarship; and its publication in six quarto volumes by the East India Company at an outlay of \$60,000 was a just appreciation of its merits. Since then, many similar works have been published, dictionaries both of the general language and its chief dialects.”

Part 1. Chinese and English arranged according to the radicals. Part 2. Chinese and English arranged alphabetically. In Part 2, Vol. 1 (published in 1819), page 739 (#9187) gives 3 characters for *she* [shih = soy nuggets], pronounced shuh. *Tow she* is a condiment made from pulse, used in cooking. *She yew* or *Tsëang yew* is soy [sauce].

Note: This is the earliest English-language document seen (Oct. 2008) that mentions soy nuggets, which it calls *she* or *Tow she*.

Page 860 (#10365) gives 2 characters for *tow* [pronounced doe]. “A generic name for pulse, beans, and so on. Page 882 (#10622) gives 2 characters for *Tseang* [chiang; like soft Japanese miso]. “A kind of pickle; certain mode of preserving meat, rice, and pulse. *Tseang yew* is soy [sauce].

Part 3. English and Chinese (published in 1822). Page 398 gives “SOI, or Soy” followed by the two characters for “tseang yew” [soy sauce]. Note 1. Illustrations show each of these characters.

Vol. 3, Part 1 (published in 1823) gives Chinese and English arranged according to the radicals. On p. 397 is the 151st radical, *Tow*. Two early original forms of the radical are shown, each resembling a vessel with a lid. “Name of an ancient vessel to contain food, and used in the rites of sacrifice; a certain measure. Grain; leguminous plants,

beans, or peas. Name of an office, of a place, and of a district. A surname." Characters containing this radical are shown on pages 397-98: *she*—"A sort of pulpy substance made of pulse [shih; soy nuggets]. *wan*—"A substance expressed from pulse; soy. Also read Yuh."

Note 2. The author, Rev. Robert Morrison (lived 1782-1834), a minister, was the first Protestant missionary in China. He was a Scotchman, though born at Morpeth in Northumberland, England. In 1807 he was sent by the London Mission to try to start a mission in China. But the British East India Company opposed missionary activity. So he traveled via the USA and reached Canton in 1808. Once there, the Company was glad to enlist his great linguistic talents, and he was appointed translator to their factory at Canton. Thus, it was at their expense (£15,000) that his great Chinese dictionary was published in 1822. He had previously published complete translations of the New and Old Testaments. A condensed (2 volumes in 1) edition was published in 1865 in London. He also established the Anglo-Chinese College at Malacca for English and Chinese literature, with a view to the propagation of Christianity. He died in 1834 at Canton, but he was buried at Macao in the Christian cemetery.

Note 3. This is the earliest English-language document seen (March 2001) that mentions soy nuggets, which it calls *tow she*.

Note 4. *Webster's New Geographical Dictionary* (1988) defines Macao (Portuguese Macau) as a Portuguese overseas territory consisting of the Macao peninsula (located at the mouth of the Pearl River just south of Canton and about 40 miles west of Hong Kong) and the two small islands of Taipa and Colôane. It was settled by the Portuguese in 1557; from 1717 until the 1800s, Macao and Canton were the only Chinese ports open to European trade. Its independence was declared by Portuguese in 1849 but not recognized by Chinese as Portuguese territory until 1887. It was for many years a haven for missionaries and traders. Portugal agreed in 1987 to return Macao to Chinese sovereignty in 1999. Address: D.D.

161. *Encyclopaedia Britannica*; or, A dictionary of arts, sciences, and miscellaneous literature. 5th ed. Illustrated with nearly six hundred engravings. Enlarged and greatly improved. 20 vols. 1817. Edinburgh: Printed at the Encyclopaedia Press for Archibald Constable. Illust. 28 cm. *

Address: Edinburgh, Scotland.

162. Golownin, Capt. Vasili Mikhailovich [Golovnin, Mikhaiforich]. 1818. Narrative of my captivity in Japan, during the years 1811, 1812 & 1813; with observations on the country and the people. To which is added an account of voyages to the coast of Japan, and of negotiations with the Japanese, for the release of the author and his companions,

by Captain Rikord. Vol. II. London: Printed for Henry Colburn. 348 p. See p. 58, 66. No index. 22 cm.

• **Summary:** The author, a Russian, was confined to a prison. Page 58: "... our cages were cleaned out, and our coverlets and night-dresses aired in the sun during our absence. Food was brought to us every morning, noon, and evening. At each meal we received thick boiled rice instead of bread. It was dealt out to us in portions which were more than sufficient for Mr. Chlebnikoff and me;... In addition to the rice, we were served with soup made of sea-cabbage and other wild plants, such as sweet cabbage, wild garlic, and water angelica; to which, for the sake of rendering it savoury, pickled beans (Japanese *misso* [miso]) and some pieces of whale fat were added."

Page 66: "We were now supplied with better food: we were frequently treated with a kind of pudding, which the Japanese call tufa [tofu]; fine beans were boiled with our rice, forming a dish which is considered a great delicacy in Japan;..."

Page 198: "Our food in Matsmai [Matsumae] was incomparably better than it had been in Chakodate [Hakodate]... The fish were fried in oil of poppies, and were seasoned with grated radish [daikon] and soy [sauce]."

Note: This is the earliest document seen (Feb. 2001) concerning soya in connection with (but not yet in) Russia or Eastern Europe.

163. *Encyclopaedia Britannica*; or, A dictionary of arts, sciences, and miscellaneous literature. 6th ed... enlarged and improved. 20 vols. 1823. Edinburgh: Printed for A. Constable. Illust. (582 plates). 28 cm. *
Address: Edinburgh, Scotland.

164. Titsing, Isaac. 1824. Bereiding van de Soija [Preparation of soy sauce]. *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen* 3:159-60. Published in Batavia. [Dut]

• **Summary:** "The preparation of soy sauce (*soija*) is simple, and is performed in the following way:

"One takes a *gantang* (a local Malay unit of measure equivalent to 3.125 kg of rice, or about a gallon) of boiled miso-beans (*gestoofde miso-boonen*). A *gantang* of boiled wheat or barley groats (*gestoofde tarw of gort*), and as many roasted and ground (*gebrande en gemalen*) wheat or barley groats as one deems to be sufficient to give it the necessary color. One then mixes these three together and encloses the mixture in a cupboard to let it mold, for which 8 days are required. After this mixture has become completely green from the mold, it is taken out of the cupboard and allowed to dry in the sun for one full day.

"Next one takes 2½ *gantang* of boiled water and one *gantang* of pure salt, which one dissolves in the water completely; after this it is allowed to stand for 24 hours, until the dirt from the salt has sunk and the water has turned

cold. The pure water is then strained off, followed by the addition of the above-mentioned molded substance, which is then stirred with a shovel for 14 days.

“One uses wheat or barley groats for this. The difference is that when the soy sauce (*soija*) is made out of barley groats, it will be much thinner, whereas that made from wheat will be much thicker, have more body, and look like ink.

“The soy sauce (*soija*), which the Chinese call *ketjap* is used like a very delicious and tasty salt with roasted flesh foods, both in Batavia [Jakarta] and in the Netherlands.”

Mr. Titsingh [Titsing] lived 1744-1812. He wrote a lot about the Dutch East Indies and Japan. Note that in 1880, Mr. A. Paillieux, in the appendix to his long and excellent article on the soybean in *Bulletin de la Societe d'Acclimatation* (Oct. p. 594-95), gives a French translation of this article but cites the original year of publication as 1781, Vol. III. We believe the date should be 1824 instead.

Note 2. This is the earliest Dutch-language document seen (April 2001) that mentions soy sauce, which it calls *de Soija*. The resulting product is more like Chinese-style soy sauce [*kecap asin*] than Indonesian-style soy sauce (*kecap manis*), which typically includes sugar plus various herbs and spices. It is very interesting that Titsingh chooses to use the word *soija* (based on the Japanese word *shoyu* = soy sauce) rather than the local Malay word *ketjap* to describe how *ketjap* is made. Address: Netherlands.

165. Siebold, Philipp Franz von. 1830. Synopsis plantarum oeconomiarum universi regni Japonici [Synopsis of the economic plants from the entire empire of Japan]. *Verhandeligen van het Bataviaasch Genootschap van Kunsten en Wetenschappen* 12:1-74. See p. 54-57. Also first table at end. [Lat; Dut]

• **Summary:** The English translation of this periodical title is: “Transactions of the Batavian Society of Arts and Sciences.” Batavia roughly corresponds to today’s Jakarta on the island of Java, Indonesia. This work lists 447 economic plants, including the soybean. The section on Leguminaceæ [sic, Leguminosæ] (p. 54+), mentions plants of the genera *Dolichos* (incl. *D. hirsutus* or Kudzu / Kudzu), *Sooja*, *Phaseolus*, *Pisum*, *Vicia*, *Medicago*, *Arachis*, *Glycyrrhiza*, and *Mimosa*. There are two species of soybeans: *Sooja Japonica*, the cultivated soybean, and *Sooja nomame*, the wild soybean. The genus and its species and varieties are described as follows (p. 56):

“CLXXVIII. *Sooja*, Moench. Sieb. (*Sooja du Japon*).

296 *S. Japonica*, Sieb. *Sooju* vernacular *Daisu*, Japan.

Varieties, grouped by color: a. White seeds. *Daisu*, Japan. b. White fuscis seeds. *Tobimame*, Japan. c. Fuscis seeds. *Sinsjumame*, Japan. d. Black round seeds. *Kuromame*, Japan. a. Black flattened seeds. *Kurotokorosun*, Japan. a. Greenish seeds. *Awomame*, Japan.

Uses: To make *Sooju*, *Miso*, *Toafu* (shoyu, miso, and tofu).

297 *S. nomame*, Sieb. *Nomame ac Jawaraketsmai*, Japan (v.v.). [vidi vivam = I have seen a living plant specimen.] *Plantae sponte crescentis folia adhuc tenera pro potu Thea colliguntur*.

At the end of this article are two large fold-out tables, each 30 by 18 inches, and each titled “Synoptic Table of Plant Uses.” Each table contains six vertical double columns. References to soy appear only in table I. At the bottom right corner of the first is written in Latin: “*Dabam in Insula Dezima mensi Novembris 1827, Dr. von Siebold.*” This translates as: “Given [as a letter for delivery] from the island of Dezima [Deshima], November 1827, Dr. von Siebold.” The plants are divided into categories by type of use. For example: I. Simple foods: A. Cereal grains. B. Legumes. C. Fruits, etc. Under each category is a numbered list of the scientific names of the Japanese plants in that category, followed by its name written in both katakana and Chinese characters. Soy-based uses include: IA. Simple foods (*Alimenta simplicia*) (columns 1-4): Legumes (Legumina). 1. *Sooja Japonica*, Sieb. Daizu, “Yellow + Bean.”

Note 1. This is the second earliest document seen (June 1999) written by a European or Westerner in which Chinese characters are used to write the name of the soybean or related products.

II. Composite foods (*Alimenta composita*) (columns 4-5). B. For the sauce “Sooju.” Shoyu. *Sooja Japonica*, Sieb.

C. For the paste (*pulto*) “Miso.” Miso. *Sooja Japonica*, Sieb. plus rice and barley

D. For the cake (*placenta*) “Toofu.” Tōfu. *Sooja Japonica*, Sieb. Note 2. This is the earliest Latin-language or Dutch-language document seen (Feb. 2004) that uses the word “Taofu” or “Toofu” or “Tōfu” to refer to tofu.

P. For the sprouts (*germinatione artifaali*) “Mogasi.” Moyashi. *Soja Japonica*, Sieb.

Note 3. This is the earliest document seen by Siebold in which the soybean is mentioned. This document also contains the earliest date connected with Siebold and soybeans (Nov. 1827). His name on the title page is written “De. de Siebold.”

Note 4. Siebold was born on 17 Feb. 1796 in Würzburg [Bavaria, Germany]. In 1821, as a young ship’s doctor, he arrived in Japan, where he worked as a doctor at Deshima near Nagasaki for the Dutch colony.

Also discusses: Column 1 of table 1 also mentions: 13. *Coix lachryma*, P.S., *suudama* [Job’s tears]. 2. *Phaseolus atzuki*, Japan, Azuki. “Red + Small + Bean.” 12. *Arachis hypogaea*, L.E. Rakkasei [peanut]. “Fall + Flower + Bean.” Column 2 mentions *Sesamum Orientale*, P.S., *goma* [sesame seeds]. Column 3 mentions the wild soybean (*Sooja nomame*), *Amaranthus oleraceus*, *A. Japonicus*, and *A. bicolor*. Column 4 also includes sea vegetables (*kaiso*).

Column 5 mentions *ame* [grain syrup], *fu* [wheat gluten cakes], *soba*, *somen* [wheat noodles], *mochi*, *konnyaku*, *kudzu*, and *tokoroten*. III. Medicinal foods (*Medicamina*) (columns 5-6).

166. Don, George. 1832. A general system of gardening and botany: Containing a complete enumeration and description of all plants hitherto known; ...Founded upon Miller's Gardener's Dictionary, and arranged according to the natural system. Vol. 2. London: C.J.G. and F. Rivington. 875 p. See p. 356-57 (Soja), 220-21 (Glycine). Index at front. 27 cm. [3 ref]

• **Summary:** This work was published in 4 volumes between 1831 and 1838. It was "caused to be prepared" by the proprietors of *Miller's Gardener's and Botanist's Dictionary*. The alphabetical arrangement of genera used by Miller was discarded. "It only remained, therefore, to choose between the Linnæan artificial method, and the Natural System of Jussieu; but the numerous advantages of the latter, particularly in an extensive work like the present, were too apparent to leave any doubt in the mind of the Editor as to which he ought to adopt... In the Linnæan artificial method, it often happens, that genera, intimately related, are separated far apart into different classes and orders, merely on account of the difference in the number of their stamens and pistils; a circumstance now found in many instances scarcely to be of sufficient importance, even to separate species, still less genera... The plan of the present work is founded on that of M. de Candolle, in his invaluable works entitled *Regni Vegetabilis Systems Naturale* and *Prodromus*, with such alterations as were rendered necessary by the rapid increase of science, and with numerous additions of new genera and species..." Like Miller, Don classifies soybeans in the genus *Soja*.

"CXC. SOJA (*sooja* is the name of a sauce prepared from the seeds by the Japanese). Moench. meth. 153. Savi, diss. 1824. p. 16. D.C. legum. mem. ix. prod. 2. p. 396.

Note 1. This is the earliest English-language document seen (April 2009) that uses the term "sooja" to refer to soy sauce.

"Lin. Syst. *Diadelphia*, *Decándria*. Calyx bibracteolate at the base, 5-cleft, the 3 lower segments straight and acute, but the 2 upper ones are joined together beyond the middle. Corolla with an ovate vexillum, which stands on a short stipe, and with an oblong straight keel." Note 2. *A Dictionary of Botany*, by Little and Jones (1980) defines vexillum (plural: vexilla) as "See Banner." Banner is defined as "The broad uppermost petal of a papilionaceous corolla as in the irregular flowers of certain members of the pea family, Fabaceae. Synonym: Standard or vexillum."

"Stamens diadelphous, the tenth one approximate, but certainly distinct. Stipe of ovary not surrounded by a sheath at the base. Style short. Legume oblong, 2-5 seeded, membranous; the seeds intercepted by cellular dissepiments.

Seeds ovate, compressed.—A hispid erect herb, with pinnately-trifoliate leaves, and with the flowers either aggregate in the axils of the leaves on short pedicels, or disposed in short pedunculate racemes.

"1 *S. hispida* (Moench. l. c.) Annual. Hardy. Native of Japan, East Indies, and the Moluccas. *Dólichos Soja*, Li. spec. 1621. Jacq. icon. rar. t. 145. *Soja Japónica*, Savi, diss. l. c. Kæmpf. amoen. 837 and 838, with a figure. Corolla violaceous, hardly longer than the calyx.

"The seeds, which are usually called *Miso* [sic, error based on Miller 1807] in Japan, are put into soups, and are the most common dish there, insomuch that the Japanese frequently eat them three times a day. The *Soja* of the Japanese, which is preferred to the *Kitjap* of the Chinese, is prepared from the seeds, and is used in almost all their dishes instead of common salt. The Chinese also have a favourite dish made of these seeds, called *ten-hu* [sic, *teu-hu*, i.e. tofu] or *tau-hu*, which looks like curd, and though insipid in itself, yet with proper seasoning is agreeable and wholesome.

"*Var. β, pállida* (D.C. prod 2. p. 396.) flowers yellow; seeds white. Roxb. [Roxburgh] hort. beng. p. 55.

"*Hispid Soja*. Fl. [Flowering] July, Aug. Clt. [Cultivated since] 1790. Pl. [Plant] 1½ foot.

"*Cult* [Culture and propagation]. The seeds of this plant only require to be sown in a warm sheltered situation in the month of May."

Under *Phaseolus*, Don lists a species named *Phaseolus max*, following Linnaeus and Rumphius, but he apparently did not confuse this with the soybean (listed on the same page under *Soja hispida*), since he noted that the species was not sufficiently known, the seeds were black, about the size of coriander-seeds, and that *Max* is the Spanish name of the plant.

On p. 220 we read: "XCV. *Pueraria* (in honour of M.N.N. Puerari, a professor at Copenhagen [Denmark]). D.C. ann. sc. nat. 1825. jan. p. 29. Leg. mem. vi. prod. 2. p. 240. Lin. syst. *Monadélphia*, *Decándria*." Species: *P. tuberosa*, *P. Wallichii*.

George Don, son of George Don (1764-1814), was a British plant collector and nurseryman, born in Scotland, and lived 1798-1856. He collected plants on various expeditions for the Horticultural Society of London in Brazil, West Indies, and Sierra Leone. One of the most indefatigable and accurate botanists. Philip Miller lived 1691-1771. Note the similarity of the section on food uses of soybean seeds to that of Miller (1807). Address: England.

167. Yang Shitai. 1833. *Bencao shugou yuan* [Essentials extracted from the *Explanations of Materia Medica*]. China. Passage on soy reprinted in C.N. Li 1958 #336, p. 237. [Chi]

• **Summary:** Wade-Giles reference: *Pên Ts'ao Shu Kou Yüan*, by Yang Shih-T'ai. Qing dynasty. It has three sections

titled: (1) Soybeans (*dadou*). Yellow soybeans can be used for making tofu (*fu*), soybean oil (*you*), and jiang. The other kinds of soybeans can be used for making tofu (*fu*) and they can be parched / fried (*chao*) for eating. (2) Black soybeans (*heidadou*). (3) Soybean sprouts (*dadou huangjuan* or “soybean yellow curls”). The text of each is a reiteration of information about soybeans from earlier documents. (Translated by H.T. Huang, PhD, March 2003).

168. Titsingh, Isaac. trans. 1834. *Nipon o daï itsi ran: ou, Annales des empereurs du Japon*, tr. par M. Isaac Titsingh [Annals of the Japanese emperors. Translated by Isaac Titsingh, edited by and Julius H. Klaproth]. Paris: Printed for the Oriental translation fund of Great Britain and Ireland. 3 + xxxvi + 460 p. See p. 345. 31 cm. [Fre]
 • **Summary:** Page 343 states that 1444 was the first year of the Bunnan (*Boun an*) era. In the third month of this year, there fell from the sky-blue vault the beans called *miso** and the red beans (*des fèves rouges*) [azuki]. (Footnote: *In Chinese *Ta teou*, *Dolichos soya*. [Klaproth] The two Chinese characters for soybean are shown).

(1) 大豆

Note 1. This is the third earliest document seen (June 1999) written by a European or Westerner in which Chinese characters are used to write the name of the soybean or related products.

Note 2. The meaning of this entry is not clear. Isaac Titsingh [Titsing] lived 1744-1812. Julius Heinrich Klaproth lived 1783-1835. The title pages states that this work was translated by M. Isaac Titsingh with the aid of several interpreters attached to the Dutch factory or settlement at Nagasaki. The work includes a glance at the mythological history of Japan by Mr. J. Klaproth.

169. Burnett, Gilbert Thomas. 1835. *Outlines of botany: Including a general history of the vegetable kingdom,...* Vol. 1. London: John Churchill. viii + 1190 p. See p. 666.
 • **Summary:** “(2145.) *Sooja* is the name of a Japanese sauce, prepared from the seeds of a species of *Dolichos*, now made into a distinct genus, and called *Soja hispida*. The *Soja* of Japan is preferred as a sauce to the *Kitjap* of China; both, however, are imported into England in large quantities, and are here known *Soy*. In bond it is worth about 6s. a gallon; but, after it has been adulterated, it is sold at 3s. and upwards a pint. The Japanese make a soup of the seeds,

called *Miso*, which is one of their most favorite and common dishes, the natives eating of it three times a day. The Chinese also have a popular dish made of these seeds, called *Teu-hu* or *Tau-hu* [tofu], which looks like curd; and, though insipid in itself, yet with proper seasoning is rendered agreeable and wholesome.” Address: F.L.S., Prof. of Botany in King’s College, London.

170. Graham, John. 1839. *A catalogue of the plants growing in Bombay and its vicinity; spontaneous, cultivated or introduced, as far as they have been ascertained.* Bombay: Printed at the Government Press. ix + 254 p. See p. 52. 22 cm. [5 ref]

• **Summary:** “205. *Soja*. W. & A. [Wight & Arnott 1834] *Diadelphia Decandria*. *Sooja*—name of a Chinese sauce prepared from the seeds.

“405. *S*. [*Soja*] *Hispida* W. & A. 762. *Dolichos soja*. Rox. [Roxburgh] *Flora*. 3. p. 314. Jacq. [Jacquin] *Ic. Rar. t*. 145. An annual, hairy plant; flowers small, of a reddish purple; in gardens. In Japan the seeds are called *Miso* [sic, error based on Miller 1807], and are commonly eaten in soups (Don. [1832])

“206. *Dolichos*. L. *Diadelphia Decandria*. *Greek*, for long, -tedious: (Odys.) name given in allusion to the habit of the plants, sending forth long shoots. Gaert. *t*. 150. Lam. *t*. 610.” The author then gives brief descriptions of *Dolichos uniflorus*, *D. falcatus*, and *D. sinensis*.

The title page reads: “Published under the auspices, and for the use of the Agri-Horticultural Society of Western India. To be continued and completed Printed by special permission, at the Government Press, Bombay.” A quote from Linnaeus is on the title page. The author, John Graham, lived 1805-1839. Voigt (1845) notes that Dr. J. Graham was a professor of Botany at Edinburgh, Scotland. Contains a preface giving a short account of the author and a manuscript index of native names. Address: Deputy Post-Master General of Bombay.

171. Oken, Lorenz. 1841. *Allgemeine Naturgeschichte fuer aller Staende. Dritten Bandes dritte Abtheilung* [General natural history for all places. Vol. 3. Part 3]. Stuttgart, Germany: Hoffmann’sche Verlags-Buchhandlung. 2135 p. See p. 1661-62, *Die Soju-Bohne* (*P. hispida*). [3 ref. Ger]

• **Summary:** This seems to be the second translation of Kaempfer’s description of miso and soy sauce into German; the first was by Bryant in 1785. He cites Kaempfer, Jacquin, and Plenck. Address: Germany.

172. Penny cyclopaedia of the Society for the Diffusion of Useful Knowledge: *Soja hispida*. 1841. London: Charles Knight & Co. See vol. 22, p. 193-94. [2 ref]

• **Summary:** “*Soja Hispida* (Moench), *Soja Japonica* (Savi), the *Dolichos Soja* (Linn), a leguminous plant, native of Japan and the Moluccas, and abundant in the peninsula of

India, though probably introduced there. The seeds resemble those of the haricot, French or kidney bean, and are used by the Chinese to ‘form a favourite dish, called *ten-hu*, or *tau-hu* which looks like curd, and which, though insipid in itself, yet with proper seasoning is agreeable and wholesome’ (Don’s *Dictionary*). The Japanese call the seeds *Miso* [sic, error based on Miller 1807] and put them into soup, of which they sometimes partake three times a day. They likewise prepare with them the sauce termed *Sooja* which has been corrupted into *Soy*.

“The beans are boiled until all the water is nearly evaporated, and they begin to burn, when they are taken from the fire, and placed in large wide-mouthed jars, exposed to the sun and air; water and a certain proportion of molasses or very brown sugar are added. These jars are stirred well every day, until the liquor and beans are completely mixed and fermented; the material is then strained, salted, and boiled, and skimmed until clarified, and will after this process become of a very deep brown colour, and keep any length of time. It has been stated that the gravy or juice of meat was used in preparing this condiment, but it appears to be entirely made from vegetable materials. There are two or three qualities of soy. To make the best requires much care and attention. Japanese soy is much esteemed in China on account of the superior manner in which it is made. Shopkeepers at Canton who sell soy have large platforms on the roofs of their houses, where the jars for preparing soy are arranged and exposed to the sun; for the consumption of soy is enormous. Neither rich nor poor can breakfast, dine, or sup without it; it is the sauce for all kinds of food; gives a zest to every dish, and may be said to be indispensable at a Chinese repast.’ (Dobell’s *Kamschatka*.) Soy is only sparingly used as a sauce in this country. It has the character of being a useful stomachic, but not more so than any of the other condiments when used with moderation.”

Note: This is the earliest document seen (May 2004) that uses the word “stomachic” in connection with soy sauce. *Merriam-Webster’s Collegiate Dictionary* (1998) defines stomachic (first used as a noun in 1735) as “a stimulant or tonic for the stomach.” Address: London, England.

173. T.W.H. 1847. The soy bean (Letter to the editor). *Farmers’ Cabinet and American Herd-Book* 12(3):78-79. Oct. 15. Letter from Cambridge, Massachusetts, dated 18 Sept. 1847.

• **Summary:** “It is a native of Japan and of the Molucca Islands. It thrives well in New England, having been successfully raised in the Botanic Garden, at Cambridge, and elsewhere in Massachusetts... The plant is very productive. Eight of the beans, planted in Milton, Mass., in 1831, yielded a wine pint of seed, weighing eleven and a half ounces. One hundred and ten of the beans, taken promiscuously, weighed half an ounce. In this proportion,

the production of the eight beans would be 2530, or more than 316 for one. In 1829, a single bean, in the Botanic Garden in Cambridge, produced 182 pods, which, as some of them contained three beans, was more than 364 for one. Should their qualities as articles of food be found agreeable, these beans will become valuable on account of their great productiveness.

“The inhabitants of Japan, of China, and Cochin China, and of some parts of India, cultivate these beans extensively, and eat them cooked or prepared in various ways. They make a very important article in the cookery of the Japanese, who use them chiefly in two forms. The first, called *Miso*, is a rich paste, of the consistence of butter, the place of which it supplies in various dishes, and is composed of a mixture of the beans and rice stewed and highly seasoned with salt. The second, called *Sooju* by the Japanese, is the celebrated sauce, known in commerce by the name of *Soy*, and imported in large quantities from the East, the best being brought from Japan. The Japanese method of making *Soy* was described by Kaempfer, in the ‘*Amoenitates Exoticae*,’ published in Latin, in 1712. It is as follows:” An 18-line description is then given.

“Kaempfer says that the Japanese use this sauce to season every dish of fried or roasted food. For fish, beef, and mutton, it forms a very savoury as well as a harmless condiment, the flavour of which is much admired by those who have become accustomed to it; and by many it is preferred to the best Chinese catsup.”

“The making of *Soy*, as here described, seems to be a very simple process, and the experiment is worth trying. Should it prove successful, the cultivation of the plant in this country, may become profitable. The beans are said to be good when cooked, like common kidney beans; but it is doubtful whether they would ever take the place of our best varieties of them.”

First cited by Hymowitz. 1986. Bibliography of early, previously uncited publications on soybeans in the United States. 2 p. Unpublished.

Note 1. This is the earliest document seen (July 2000) published in the United States that contains the word “Miso.” Note 2. This is the earliest document seen (June 2001) that mentions the term “profitable” (or “profit” or “profits”) in connection with soybeans in the United States. Address: Cambridge, Massachusetts.

174. Biot, Edouard Constant. trans. 1851. *Le Tchéou-Li; ou Rites des Tchéou*. 3 vols. [The Chou li; or Rites of Chou. 3 vols.]. Paris. Imprimerie Nationale. Photolitho reproduction. Reprinted in 1930 by Wen-tien-ko in Peking, and in 1969 in Taipei. [Fre]*

• **Summary:** Translated for the first time from the Chinese by E. Biot. About etiquette, rights, and ceremonies in China. Address: France.

175. Watts, Talbot. 1852. *Japan and the Japanese: From the most authentic and reliable sources. With illustrations of their manners, costumes, religious ceremonies, &c.* New York, NY: J.P. Neagle. 184 p. Illust. No index.

• **Summary:** In the section titled “Customs, manners, &c.” the author borrows text from Thunberg (1802, p. 267) without using quotation marks (p. 111): “Ladies do not eat with the men, but by themselves. Rice supplies the place of bread, and is boiled with every kind of provisions. Fish and fowls are very plentiful, and are eaten in abundance; but miso-soup * boiled with fish and onions is the customary food of the common people.”

Footnote: *”Misos are small beans, like lentils, the produce of the dolichos soja.”

In the chapter titled “Empire of Japan (from Goodrich’s Pictorial Geography)” under “Towns” (p. 122) we read: “Kio, or Meaco [Kyoto, or Miako], was for a long time the Capital, and contains the most remarkable edifices... Meaco is the centre of Japanese commerce and manufactures. Silks, tissue, soy [sauce] and lacquered wares, are purchased here in their greatest perfection...”

The chapter titled “The Japanese empire (From Memoirs of a Captivity in Japan, by Captain Golownin, of the Russian Navy)” contains a long excerpt (p. 140) about the mode of making soy [sauce]. “The Japanese soy is also prepared of beans, and turned sour in casks. They say that three years are required for preparing the best soy...” Address: M.D., Late in the service of the Hon. D. E. I. [Dutch East India] Company [USA].

176. Hakura, Yokyu? 1854. *Yôshû roku* [A record of small provision]. Japan. Publisher unknown. 46 p. Written in Kanbun (Chinese). Japanese summary by Kawakami 1978, p. 156. [Jap]

• **Summary:** Mentions red miso (*aka-miso*), how to make a type of miso soup called *shi-yu* or *kuki-yu*, and tofu. Hacho miso from Mikawa was recommended as red miso.

177. Simmonds, Peter Lund. 1854. *The commercial products of the vegetable kingdom, considered in their various uses to man and their relation to the arts and manufactures; forming a practical treatise & handbook of reference for the colonist, manufacturer, merchant, and consumer...* London: T.F.A. Day. xix + 668 p. See p. 313. Index. 23 cm.

• **Summary:** In the section on “Pulse” we read (p. 313). “The well known sauce, Soy, is made in some parts of the East, from a species of the Dolichos bean (*Soja hispida*), which grows in China and Japan. In Java it is procured from the *Phaseolus radiatus*. The beans are boiled soft, with wheat or barley of equal quantities, and left for three months to ferment; salt and water are then added, when the liquor is pressed and strained. Good soy is agreeable when a few years old; the Japan soy is superior to the Chinese.

Large quantities are shipped for England and America. The Dolichos bean is much cultivated in Japan, where various culinary articles are prepared from it; but the principal are a sort of butter, termed *mico*, and a pickle called *sooja*.

“1,108 piculs of soy were shipped from Canton in 1844, for London, British India, and Singapore. 100 jars, or about 50 gallons of soy, were received at Liverpool in 1850. The price is about 6s. per gallon in the London market.”

One page earlier, the section on “Pulse” states (p. 312): Of leguminous grains there are various species cultivated and used by the Asiatics, as the *Phaseolus Mungo* [mung bean] *P. Max* [soya bean], and *P. radiatus* [probably azuki bean], which contains much alimentary matter; the earth-nut (*Arachis hypogaea*), which buries its pods under ground after flowering.”

“Captain H. Biggs [sic, Bigge], in a communication to the Agri.-Hort Soc. [Agricultural & Horticultural Society] of India, in 1845 [sic, Aug. 1844], states that of the esculents a large white pea forms the staple of the trade of Shanghae [Shanghai], or nearly so, to the astonishing amount of two and a-half millions sterling. This he gives on the authority of the Rev. Mr. Medhurst, of Shanghae, and Mr. Thoms [sic, Thom], British Consul at Ningpo. These peas are ground in a mill and then pressed, in a somewhat complicated, though, as usual in China, a most efficient press, by means of wedges driven under the outer parts of the framework with mallets. The oil is used both for eating and burning, more for the latter purpose, however, and the cake, like large Gloucester cheese, or small grindstones in circular shape, is distributed about China in every direction, both as food for pigs and buffaloes, as also for manure.”

Note 1. The “large white pea” is clearly the soybean.

Note 2. This is the earliest document seen (Aug. 2001) that uses the spelling “Shanghae.”

In the chapter titled “Oleaginous plants” we read (p. 512): “In Japan a kind of butter, called *mijo*, [sic, *miso*] is obtained from a species of the Dolichos bean (*Dolichos soja*).

Also discusses: Almonds and almond oil (p. 510, 533). Wheat gluten (221, 234, 264). Hemp and hemp oil (p. 510). Sesame or teel, sesame oil, black til, and gingelie oil (p. 511, 533-34). “The export of linseed and rapeseed cakes from Stettin” (p. 564).

Note 3. Peter L. Simmonds lived 1814-1897.

Note 4. This is the earliest English-language document seen (July 2003) that uses the words “gingelie” or “teel” to refer to “sesame.”

Note 5. This is the earliest English-language document seen (Sept. 2006) that uses the word “Oleaginous” or the term “Oleaginous plants” in connection with the soybean. Oil derived from the soybean is also mentioned. Address: England.

178. Julien, Stanislas. trans. 1855. Le pois oléagineux de Chine [The “oil peas” (soybeans) of China]. *Bulletin de la Societe d’Acclimatation* 2(4):225-26. April. [2 ref. Fre]

• **Summary:** This is a letter addressed to the president of the Zoological Society for Acclimatization, from the session of 30 March 1855. “Monsieur and dear colleague. I have the honor to offer you, at the request of my friend Émile Tastet, some information that I have found in a Chinese book on the subject of oil peas (soybeans, *Pois oléagineux*, *Yeou-teou*).

“One reads in the *Imperial Encyclopedia of Agriculture* (*Cheou-chi-thong khao*; [*Ch’in Ting Shou Shi T’ung K’ao* by Chang Ting-yu and Chiang P’u]), volume 27, fol. 8, first page (recto): ‘According to Li Shih-chen (Li-chi-tchin, author of the Great Materia Medica [Pen-ts’ao kang-mu]), the large peas (soybeans, Ta-teou) are found in the following colors: some are black (Hé-teou), white (Pe-teou), yellow (Hoang-teou), or gray (Ho-teou); and there are also some that are spotted with blue (Thsing pan-teou). The black ones are ordinarily called Ou-teou (here the word *ou* has the same meaning as *he*, black); they can be used in medicine, be eaten, and are used in the condiment called *chi* (soy nuggets, which are composed of these soybeans, of ginger, and of salt). The yellow can be used to make tofu (*Teou-fou*, a sort of fermented soybean pâté, on which the people nourish themselves habitually); oil is also drawn from them by putting them under a press; they are also used to make chiang (tsiang; Note: a sort of sauce like a soft miso that serves as a seasoning).

“The other species of large peas (soybeans) are not good for making tofu (teou-fu, fermented pâté of peas); they are eaten after having been roasted. All the species of large peas (soybeans) described hereafter are planted before and after the summer solstice (June 21). The stem attains a height of 3-4 feet. The leaves are round and terminate in a point. In autumn, the plant bears small, white flowers, which are clustered together. Then they form pods (about as long as one’s thumb), which become dry after the frost.

“One reads in the *Treatise on Agriculture* by Fan-ching [Fan Sheng-chih, written ca. 10 B.C.]: ‘At the summer solstice, the soybean (*teou*) is sown; it is not a big job. The flowers of the soybean do not like to see the sun; otherwise they turn yellow and the and the roots blacken.’

“I regret, Monsieur, to be unable to find at the moment more details on the soybean; however, the above extract largely suffices to confirm the remarkable usefulness, unknown in Europe until just now, of the soybean which M. de Montigny has sent to you. I have already called attention to this fact in a large work that I finished a year ago, in which are described all of the Chinese industrial processes that relate to chemistry. But I do not know when I will be able to publish this work.

“I am at the disposition of the Society for Acclimatization whenever you would like me to translate

Chinese texts that would be of interest.”

Note 1. This is the earliest French-language document seen (March 2001) that mentions soy nuggets, which it calls *chi*.

Note 2. This is the earliest French-language document seen (Feb. 2004) that uses the word *Teou-fu* to refer to tofu. Bretschneider (1881) calls Julien a “great sinologue.”

179. Williams, Samuel Wells. 1856. A tonic dictionary of the Chinese language in the Canton dialect. Canton, China: Printed at the office of the Chinese repository. xxxvi + 832 p. See p. 438, 511. 22 cm. [10 ref. Eng; chi]

• **Summary:** At the top of the title page, the title is written in Chinese (Cantonese) but printed in Roman letters: *Ying Wá Fan Wan Ts’üt Iu*. This book contains definitions and expansions of 7,850 characters; it focuses on those in general use. Soy-related characters include the following: Page 61–*Fu*. Corrupted, rotten; *tau fu* bean curd.

Page 438–*Shí*. Salted eatables, as beans, oysters, olives, which are afterwards dried and used as relishes; *tau shí* salted beans; *shí yau* soy [sauce]; *mín shí* salted flour and beans used in cooking; *lám shí* stoned and pickled olives; *tau shí kéung* salted beans and ginger—a relish” [like Hamanatto in Japan].

Note 1. This is the earliest English-language document seen (Oct. 2008) that uses the term “salted beans” or the term *tau shí* to refer to soy nuggets.

Note 2. Concerning the term *mín shí* (mín shí), Dr. H.T. Huang (expert on Chinese food history, June 2008 personal communication) says it is simply Cantonese for *mian shi* (pinyin; or in Wade Giles *mien shih*, characters #4503 + #5805). The characters are the same in Cantonese or in pinyin. The term is used only in Cantonese, where it often refers to “soy paste” or jiang / chiang (character #661). Dr. Huang has not seen the term used in classical texts or heard it in Mandarin or Fujian dialects.

Page 511–*Tau*. Pulse, peas, beans, legumes; *hung tau* red pulse [beans]; *ti tau* ground-nuts; *tau fu* bean curd; *tau fu fa* bean curd jelly [soymilk curds]; *tau fu kon* [pinyin: doufugan] bean curd cakes.

Page 533–*To*. A knife; a sword with one edge; *leung mín to* a bean-curd knife.

Page 708–*Yun*. Liver, yellow; *tau fu yun* yellow bean curd cakes.

In the Preface, the author refers to ten earlier Chinese or Cantonese-English dictionaries and related works by Kanghi (*Kanghi Tsz T’ien*, which have been in use throughout the empire for nearly 150 years), Morrison (1827), Medhurst (1842-43), De Guines, Gonçalves, Callery, Klapproth, Bridgman (1841), Williams (1841), and Bonney (1854).

Note 1. This is the earliest English-language document seen (Feb. 2008) that uses the term “tau fu kon” or “bean curd cakes” to refer to tofu.

Note 2. This is the earliest English-language document seen (March 2001) that mentions *shí*, *tau shí*, or soy nuggets, which it calls “salted beans.” This is also the earliest document seen (March 2001) concerning the etymology of soy nuggets. Address: Canton, China.

180. Simmonds, Peter Lund. 1858. A dictionary of trade products, commercial, manufacturing, and technical terms: with a definition of the moneys, weights, and measures of all countries, reduced to the British standard. London: G. Routledge & Co. viii + 422 p. 18 cm.

• **Summary:** Two entries are related to the soybean: “Mico, mijo [miso], a vegetable butter or solid oil, made from *Soja hispida*, in Japan.”

“Soy, a sauce or flavoring originally made in the East; and said to be produced from a species of *Dolichos* bean.” Note: the author is apparently unaware that the sauce is made from soybeans.

The Preface begins: “The present is especially a practical, commercial and industrial age: newspapers, lecturers, popular authors, all lend their efforts towards the diffusion of sound and useful knowledge among the masses; and the commercial and industrial element has become the leading feature of instruction.”

Also discusses: Almond oil, almonds, amande, arachis oil (“generally known in commerce as nut oil”), catsup (non-soy; “Catsup, Ketchup, a seasoning or sauce for meat, made of mushrooms, tomatoes, walnuts, or other vegetable substances), earth-nut (see ground-nut; in America called pea-nut), flax, flax-seed, gingelie (Indian name for *Sesamum orientale* or teal seed), gluten, glutinous, ground-nuts (from which oil is expressed), hemp (a fibre), hemp-seed (from which oil is expressed), ketchup (see catsup), lima-bean (“the *Phaseolus limensis*, an esteemed kind of pulse cultivated in the tropics; the perennial kidney-bean, *P. perennis*”), linseed, linseed-meal, linseed-oil, oil (fixed or fat oils vs. volatile or essential oils; solid fats vs. fluid fixed oils), oil-cake (“the marc or refuse after oil is pressed from flax-seed, rape-seed, coconut pulp, &c...”), pea-nut (an American name for the ground-nut), sesame (a plant from which oil is expressed; in India called Gingely, Gingelie, teal or til), siritch (Arab name for sesame oil), soya (see sherbet).

Note 1. This is the earliest English-language document seen (Jan. 2009) that gives “*Phaseolus limensis*” as the scientific name of the lima bean.

Note 2. Peter L. Simmonds lived 1814-1897. This book is dedicated to Dr. Lyon Playfair, C.B., F.R.S., President of the Chemical Society, etc. Address: F.R.G.S., F.S.S., author, 8 Winchester St., Pimlico [southwest London, England].

181. Sakato, Shi. 1859. Ryôri chôhō-ki [Records on convenience cooking]. Japan. 60 p. Unpublished

manuscript. Japanese summary by Kawakami 1978, p. 177. [Jap]

• **Summary:** Contains many recipes for tofu and miso, plus amazake and shirozake (lit. “white sake”), hishio, natto, and Kinzanji miso.

182. Chû kano sho [Rough writing/draft for the kitchen].

1863. Publisher unknown. 62 p. Handwritten. Japanese summary by Kawakami 1978, p. 101. [Jap]

• **Summary:** The Japanese title of this work, by an unknown author, may be pronounced Kuriya no Shitagaki. It contains a listing of many fish names, and mentions *Kokusho* (or *Kokushiho*), a unique and rich miso soup from the Edo period.

183. Simmonds, Peter Lund. 1863. The dictionary of trade products, commercial, manufacturing, and technical terms: with a definition of the moneys, weights, and measures of all countries, reduced to the British standard. New edition, revised and enlarged. London: Routledge, Warne & Routledge. 463 p. 17 cm.

• **Summary:** Two entries are related to the soybean: “Mico, mijo [miso], a vegetable butter or solid oil, made from *Soja hispida*, in Japan.”

“Soy, a sauce or flavoring originally made in the East; and said to be produced from a species of *Dolichos* bean, *Soja hispida*.”

Peter L. Simmonds lived 1814-1897. Address: F.R.G.S., F.S.S., author.

184. Williams, Samuel Wells. 1863. The Chinese commercial guide: Containing treaties, tariffs, regulations, tables, etc... With an appendix of sailing directions. 5th ed. Hongkong: A. Shortrede & Co. xvi + 387 + 266 p. Index. 21 cm. Facsimile edition reprinted in 1966 by Ch’eng-Wen Publishing Co., Taipei, Taiwan.

• **Summary:** In the section titled “Description of articles of export” [from China, alphabetical], Chinese characters accompany every entry. On p. 111 is an entry for “Beans and peas” (*tau*) incl. bean cake (*tau ping* or *tau shih* = “bean stones”). “The Chinese cultivate legumes to a greater extent, perhaps, than any other nation.” The manufacture of bean jam [jiang] and bean curd cakes [tofu] for food from the flour employs many people. The cakes used for manure are made by crushing the ripe peas [sic, beans] and boiling the grits soft; the mass is then pressed into cakes in iron hoops, and made solid by means of wedges driven down by heavy mallets. Peas and bean cakes are exported from Yingsz’ [Ying-k’ou, Yingkou?] and Tientsin to Amoy and Swatau [Swatow, Shantou, in Guangdong province]; they comprise one-fourth of all the produce shipped from Tientsin in 1861; and there is little else sent from Yingsz’. In 1859, about a million piculs [1 picul = 133.33 lb] of the cake were

reshipped to the south of China from Shanghai alone, chiefly for the consumption of sugar growers.”

In the same section is an entry (p. 139) for: “Soy, *shí yú* [*shiyu* = soy nugget sauce], and *tsiáng yú* [*jiangyou* = soy sauce], is a condiment made from the *Dolichos* bean, which grows in China and Japan; our name is derived from the Japanese *siyau* [*shoyu*]. To make it, the beans are slowly boiled soft, then an equal quantity of wheat or barley flour is added; after this has thoroughly fermented and become mouldy, the beans are washed, and put into jars with their weight in salt, adding some aromatics, and three times as much boiling water as the beans were at first. The whole compound is now left for a month or more, exposed to the sun, and then pressed and strained. Good soy has an agreeable taste, and if shaken in a tumbler, lines the vessel with a lively yellowish-brown froth; its color in the dish is nearly black. There are many qualities of it, and when well made all improve by age. Japan soy is considered superior to Chinese, but both are of different qualities, and are probably made of various materials, some of which may be base enough. It is most commonly sent to England, India, and Europe, to form the basis of other sauces and condiments. It is worth from \$4 to \$8 per picul and goes chiefly from Canton.”

On p. 129 is a section on “Oil” (*yú*), incl. [soy] bean oil (*tau yú*), wood oil (*tung*), cotton-seed oil, sesamum oil, olive oil, ground-nut oil, cabbage or rape oil, fish oil, etc.

In the same section (p. 149) is an entry for “Vermicelli (Chinese characters) *fun sz*, i.e. flour threads. This article, sometimes called *loksoy* [*lock soy*], manufactured from both rice and wheaten flour, is extensively used among the natives in soups. It is every way inferior to the European.”

Note 1. This is the earliest English-language document seen (Sept. 2006) that uses the term “bean oil” to refer to soybean oil, or that mentions *tau-yú* as the Chinese (Cantonese) name for soybean oil.

Note 2. This is the earliest English-language document seen (Sept. 2006) that uses the term “*Dolichos* bean” to refer to the soybean. It is also the earliest English-language document seen (Sept. 2006) that repeatedly uses the word “bean” (not preceded by the word “soy” or “soya”) to refer to the soybean.

Note 3. This is the earliest English-language document seen (Feb. 2004) that uses the term “bean-cakes” to refer to tofu.

Note 4. This is the earliest English-language document seen (May 2005) that uses the “grits” to refer to coarsely ground soybean flour or pieces.

Note 5. This is the earliest English-language document seen (Sept. 2003) that contains the term “cotton-seed” or term “cotton-seed oil” (each spelled with a hyphen).

Note 6. This is the earliest English-language document seen (Oct. 2006) that that uses the term “crushing” (or “crush,” “crushes,” “crushed” or “crushings”) in connection

with soybeans to refer to the process of pressing the beans to yield oil and cake.

This section also discusses (alphabetically): Almonds (but not almond oil), ground-nuts (*hwa sang* characters, ground-nut cake characters *hwa sang ping*; the “oil is the chief article of export”), gypsum (*shih kau*, used especially in making bean-cakes and curd [tofu], sometimes called bean-macaroni), manure cakes or poudrette (*kang sha*, made from night soil mixed with earth for exportation. “The refuse of ground-nuts, sesamum, rape-seed, and other oleaceous seeds, is prepared for manure and for feeding swine and sheep, and sent from one part of the country to another”), salt, seaweed, sesamum seed, and silk.

A table titled “Rates of freight in steamers to Canton” states (p. 228): “Soy, per tub of 1 picul—\$0.75.”

In the section on “Foreign commerce with Japan” we read (p. 254): “Camphor, sulphur, porcelain, copper, nut-galls, vegetable wax, cassia, soy, and verdigris, have been furnished at rates and quantities sufficient to export to Europe.”

Other sections discuss Chinese, Japanese, and British weights and measures, numerals, coins and currency.

Samuel Wells Williams lived 1812-1884. Address: LL.D., Hongkong.

185. Lindley, John; Moore, Thomas. eds. 1866. The treasury of botany: A popular dictionary of the vegetable kingdom; with which is incorporated a glossary of botanical terms. 2 vols. (Parts I and II). London: Longmans, Green, and Co. xx + 1254 p. See Part I. p. 131, 536-37, 747. Part II. p. 1068, 1075. Illust. 17 cm.

• **Summary:** Bean (Part I, p. 131) “*Sahuea* bean, *Soja hispida*.

Glycine (Part I, p. 536-37) “A small genus of *Leguminosae*, all, excepting one, being slender decumbent [reclining along the ground, but with ascending apex or extremity] or twining herbs, with alternate stalked leaves made up of three to seven leaflets varying much in form, and bearing axillary racemes or fascicles of small yellow or violet pea-flowers. The genus belongs to the tribe *Phaseoleae*, and is most nearly allied to *Teramnus*, from which it is distinguished by its pods being destitute of the hardened hooked style seen in the latter, and by the ten stamens, which are united into a tube, being all, instead of the alternate ones only, anther-bearing. The species are pretty equally distributed through tropical Asia, Africa, and Australia, where a few inhabit extratropical regions.

“The *Sooja* of the Japanese, *G. Soja*, the only erect species of the genus, a dwarf annual hairy plant, a good deal like the common dwarf kidney or French bean (*Phaseolus vulgaris*), has small violet or yellow flowers, borne in short axillary racemes, and succeeded by oblong two to five-seeded hairy pods.

“The seeds, like kidney beans in form but smaller, are called Miso [sic, error based on Miller 1807] by the Japanese and are made into a sauce which they call Sooja or Soy. The manner of making it is said to be by boiling the beans with equal quantities of barley or wheat, and leaving it for three months to ferment, after which salt and water is added, and the liquid strained. The sauce is used by them in many of their dishes, and they use the beans in soups. The Chinese cook the beans also in various ways, and the plant is cultivated for the sake of them in various parts of India and its Archipelago.

“Mr. Bentham groups the species in three sections, which some regard as genera: *Soja*, with flowers fascicled on the racemes, and falcate pods with depressions but not transverse lines between the seeds; *Johnia*, with flowers similarly arranged, and straight pods with transverse lines between the seeds; and *Leptocyanus*, with solitary flowers on the racemes, and straight pods. The Glycine or *Wistaria* of gardens is now referred to *Millettia*.

Miso (Part II, p. 747). “A fatty substance obtained from *Soja hispida*.

Soja (or *Soya*) *hispida* (Part II, p. 1068) is the only representative of a genus of *Leguminosae* of the tribe *Papilionaceae*, and much cultivated in tropical Asia on account of its beans, which are used for preparing a well-known brown and slightly salt sauce (Soy), used both in Asia and Europe for flavouring certain dishes, especially beef, and supposed to favour digestion. Of late it has been cultivated as an oil-plant. *S. hispida* is an erect hairy herb, with trifoliate leaves, and axillary racemose flowers, which have a five-cleft calyx, a papilionaceous corolla, ten diadelphous stamens, and an oblong pod which contains from two to five ovate compressed seeds. Modern botanists generally refer the plant to *Glycine*: which see.”

Soy (Part II, p. 1075) “A sauce originally prepared in the East, and said to be produced from the beans of *Soja hispida*.

Note 1. This is the earliest document seen (April 2003) in which the soybean is classified under *Papilionaceae*.

Note 2. This is the earliest English-language document seen (April 2003) that uses the term “oil-plant” to describe the soybean.

Also discusses (in alphabetical order): Agar-agar. Alfalfa. Algæ. Almond. Amande de terre (French, *Cyperus esculentus*). Amaranthus. Arachis [peanuts]. Aspergillus. Bean, under-ground kidney = *Arachis hypogaea*. Cannabis. Chenopodium [Common Goosefoot]. Coix [lachryma, Job’s tears]. Cyperus. Earth-nut (*Arachis hypogaea*). Flax. Gingelly oil. Hemp.

Part II: Job’s tears. Legume. Leguminosæ. Linseed. Linum. Lupinus (incl. *Lupinus albus*, *L. luteus*). Nut, bambarra ground (The seed of *Voandzeia subterranea*, p. 795). Nut, earth (*Arachis hypogaea*). Oil (incl. sesamum). Oilcake (“The residuum after expressing the oil of various

seeds, especially linseed and rape, which is used for cattle feeding, and as a manure”). Oil-plant (*Sesamum orientale*). Pindals, pindars. Psophocarpus. Pueraria. Quinoa (*Chenopodium Quinoa*). Sea-girdles (*Laminaria digitata*). Sea-hangers. Sea-wand (*Laminaria digitata*). Seaware. Seaweeds. Seawrack. Seawracks. Sesame. Sesamum. Tetragonolobus.

“Voandzeia So called from Voandzou, the name given by the natives of Madagascar to the only known representative of this genus of *Leguminosæ*, the *V. subterranea* of botanists, a creeping annual, with long-stalked leaves composed of three leaflets... It is a native of Africa, and is extensively cultivated in many parts of that continent, from Bambarra and the coast of Guinea to Natal, its esculent pods and seeds forming common articles of food among the inhabitants of those regions. Although the plant is not indigenous to the Western Hemisphere, it is commonly found in many parts of South America, such as Brazil and Surinam, whither it has been carried by the negro slaves and has now become naturalised. The pods are sometimes called Bambarra Ground-nuts; in Natal the natives call them Igiuhiuba; while in Brazil they are known by the name of Mandubi d’Angola (showing their African origin), and in Surinam by that of Gobbe.

“Voandzou. The Malagassy name of a genus of *Leguminosae*, called after it *Voandzeia*” (p. 1224).

Note 3. This is the earliest English-language document seen (Nov. 2005) that contains the word “oilcake” (or “oilcakes”). Address: 1. Ph.D., F.R.S., F.L.S., Botanic Garden, Chelsea. Late emeritus Prof. of Botany in University College, London; 2. F.L.S., Curator of the Chelsea Botanic Garden.

186. Hepburn, James C. 1867. A Japanese and English dictionary; with an English and Japanese index. Shanghai, China: American Presbyterian Mission Press. xii + 558 + 132 p. 2nd ed. 1872; Abridged ed. 1873, 1881; 3rd ed. 1886; 4th ed. 1888; 5th 1894; 7th ed. 1903. First edition was reprinted in 1966 and 1983. Index. 24 cm.

• **Summary:** This is Hepburn’s earliest Japanese-English dictionary. The words are arranged alphabetically by their romanized spelling. Each word is written in three ways. After the romanized word (main entry), written in uppercase letters with diacritical marks (which we have largely omitted below), the same word is written in katakana, then again in Chinese characters. Finally, one or more definitions are given.

Soy-related words and terms in the 1867 edition: Amazake: Sweet sake, a kind of fermented rice. Daidz [Daizu]: A kind of large white bean. *Soja hispida*. Go: Beans mashed into paste. *Mame no go*. Gokoku: The five cereals, wheat, rice, millet, beans, *kibi*. Hiriodz [Hiriodzu, Hiryoizu]: A kind of food [made of tofu fried in oil]. Ireru-

Kono mame was yoku iremash'ta: these beans are well parched. Iri-ru–Mame wo iri-ru: to parch peas

Kinako [“yellow flour”]: A kind of food made of beans.

Kiradzu: The refuse of beans left in making tofu. Koji: Malt made by fermenting rice or barley, in the process of making sake, and soy. Koji-butata: A shallow box for holding malt. Mame: Bean, pea. *Mame no ko*: bean flour. Miso: A kind of sauce made of beans. Natto: A kind of food made of beans.

Miso, 味噌, 味曾, n. A kind of sauce made of beans.

Nigari: The brine formed by the deliquescence of salt.

Sashi (verb): Shoyu wo sashi–To season with soy. Sashimi: Raw fish cut in thin slices and eaten with soy. Sh'taji [Sorted after “Shis,” Shitaji]: Soy (used only by women). Syn. Note 1. This is the earliest English-language document seen (March 2008) that uses the word “sh'taji” or shitaji” to refer to shoyu or soy sauce.

Shoyu: Soy, a kind of sauce made of fermented wheat and beans. Tofu: A kind of food made of beans. Umeboshi (*hakubai*). Dried plums. Ume-dzke [Ume-zuke]: Pickled plums. *Ume ga mada umimassen*: The plums are not yet ripe.

Yuba [hot water + leaf]: A kind of food made of beans.

Yu-dofu: Boiled tofu.

Note 2. This is the earliest English-language document seen (Oct. 2008) that contains the word “yuba.”

The English-Japanese part of this dictionary starts after p. 558 and is titled “An index; or, Japanese equivalents for the most common English words.” Separately numbered to p. 132, it includes: “Bean, Mame. Barm, Kôji, tane. Pea, saya yendo [saya-endo]. Soy, Shôyu.”

Terms NOT mentioned include Aburaage, Aburage, Atsu-age, Daitokuji natto, Edamame (or Eda mame or Yedamame), Ganmodoki, Hamanatto, Hiya-yakko, Kori-dofu, Koya-dofu, Nama-age, Okara, Tamari, Tonyu, Unohana, Yaki-dofu.

Note 3. The author apparently did not realize that the various soyfoods he defined (with the possible exception of soy sauce) were made from soybeans.

Note 4. This is the second earliest English-language document seen (June 1999) in which Chinese characters are used to write the name of the soybean or related products.

Note 5. This is the earliest English-language document seen that contains the word “tofu” (Feb. 2004), or the word “natto” (Feb. 2004), or the word “koji” (March 2001).

Note 6. This is the earliest English-language document seen (Feb. 2004) that refers to amazake, which it calls “Amazake.”

Note 7. This is the earliest English-language document seen (Jan. 2006) that uses the term “Shoyu” (or “shoyu”) to refer to soy sauce.

Note 8. This is the earliest English-language document seen (Dec. 2005) that uses the word “Kinako” to refer to roasted soy flour.

Note 9. This is the earliest English-language document seen (Dec. 2008) that uses the word “Kiradzu” to refer to what is now called “okara,” or “soy pulp.” Address: Shanghai, China.

187. Knight, Charles. ed. 1867. The English cyclopædia–Natural History. Vol. IV: Soja. London: Bradbury, Evans, & Co. 1291 p. See p. 843.

• **Summary:** “Soja, a genus of Plants belonging to the natural order *Leguminosæ*. *Soja hispida* (Moench), *S. Japonica* (Savi), the *Dolichos Soja* (Linn.), is a native of Japan and the Moluccas, and abundant in the peninsula of India, though probably introduced there. The seeds resemble those of the haricot, French or kidney bean, and are used by the Chinese to ‘form a favourite dish, called “ten-hu,” or “tau-hu,” which looks like curd, and which, though insipid in itself, yet with proper seasoning is agreeable and wholesome’ [Don 1832]. The Japanese call the seeds ‘Miso,’ and put them into soup, of which they sometimes partake three times a day. They likewise prepare with them the sauce termed ‘Sooja,’ which has been corrupted into ‘Soy.’ Soy is only sparingly used as a sauce in this country. It has the character of being a useful stomachic, but not more so than any of the other condiments when used in moderation.”

Note: The entry at “Soy” says to see ‘Soja.’

Note: Much of the information in this entry for Soja comes from the *Penny Cyclopaedia of the Society for the Diffusion of Useful Knowledge* (London, 1841. See Soja hispida).

Also in this volume: Sesamum (p. 758). Voandzeia (p. 1224).

188. Simmonds, Peter Lund. 1867. The commercial dictionary of trade products, manufacturing and technical terms:... A new edition, revised and enlarged. London and New York: George Routledge and Sons. viii + 463 p. See p. 353. 17 cm.

• **Summary:** The entry for “Soy” is two words longer (and more accurate) than that in the 1858 edition. “Soy, a sauce or flavoring originally made in the East; and said to be produced from a species of *Dolichos* bean, *Soja hispida*.”

Otherwise, the contents and page layout of this book seem to be identical to those of the 1858 edition except that a long supplement has been added to the rear, p. 423-63.

Soy-related entries in the supplement: “Midsu [sic, miso], an oily pulp made from beans in Japan, with which food is dressed instead of butter.” “Miso, a substance used in Japan as butter by boiling the soy bean (*Soja hispida*), and mixing it with rice, salt, etc.

Other interesting entries in the supplement: Agar-agar, chufas, hasheesh (Arabic word for hemp, hay; also an intoxicating drug made of hemp, which is sold in the form of sweetmeats, paste, and tobacco), mindoubi (a name in Brazil for the ground nut, *Arachis hypogaea*). Peter L. Simmonds lived 1814-1897. Address: F.R.G.S., F.S.S., author, 8 Winchester St., Pimlico [southwest London, England].

189. Sakuma, Yonekichi. 1868. Nikki [Diary]. April 25. Unpublished. [Jap]*

• **Summary:** In the first year of Meiji (1868) the author was a passenger on the ship “Scioto” (*Saioto-go*), headed for Hawaii with the first group of Japanese immigrants. He noted in his diary of April 25: “Yokohama departure. Provisions of rice, miso, shoyu.”

Note: This is the earliest document seen (June 2008) concerning soybean products (miso and shoyu) in Hawaii or Oceania. This document contains the earliest date seen for soybean products in Hawaii or Oceania (April or May 1868); soybeans as such had not yet been reported by that date.

Letter from Mr. Nihei. 1988. Oct. 23. Yonekichi SAKUMA, born on 11 July 1840, came from Chiba prefecture. He went to Hawaii as an immigrant in 1868, and died in 1927 at age 88.

Letter from Paul J. O’Pecko, Reference Librarian, Mystic Seaport Museum, Mystic, Connecticut. 1990. July 3. There were at least two three-masted sailing vessels named Scioto sailing in 1868, but there is no indication that any vessel named Scioto was ever owned by the Pacific Mail Steamship Company. It is possible they may have chartered it.

190. Chambers’s encyclopædia: A dictionary of universal knowledge for the people: Soy. 1868. London: W. and R. Chambers. See vol. IX, p. 10.

• **Summary:** “Soy is a thick and piquant sauce, made from the seeds of the Soy Bean (*Soja hispida*), a plant of the natural order *Leguminosæ*, suborder *Papilionaceæ*, so nearly allied to the genus *Dolichos* (q.v.) as to be often included in it. It is a native of China, Japan, and the Moluccas, and is much cultivated in China and Japan. It is also common in India, although, probably, not a native of that country. The seeds resemble those of the Kidney Bean, and are used in the same way. The Japanese prepare from them a substance called *Miso*, which they use as butter.

“Soy is made by mixing the beans softened by boiling with an equal quantity of wheat or barley roughly ground. The mixture is covered up, and kept for 24 hours in a warm place, to ferment. The mass is then put into a pot, and covered with salt, the salt used being in quantity about equal to each of the other ingredients. Water is poured over it; and it is stirred, at least once a day, for two months, after which

the liquor is poured off and squeezed from the mass, filtered, and preserved in wooden vessels. By long keeping, it becomes brighter and clearer. A Chinese sauce, called *Kitjap* (Ketchup), is often sold in Britain as soy, but is very inferior to the true soy.”

191. Pagés, Léon. 1868. Dictionnaire japonais-français [Japanese-French dictionary]. Paris: Firmin Didot frères, fils et cie. 933 p. See p. 597. [1 ref. Fre]

• **Summary:** This is a French translation of the Japanese-Portuguese dictionary published in 1603 in Nagasaki by the Society of Jesus [Jesuits].

Includes: Daizzou [daizu] (p. 252). (Mame), grains, ou haricots du Japon (*Soja hispida*, Moench.- Hoffm.).

Mame (p. 518). Haricots, ou pois chiches du Japon (*Soja hispida*, Moench.- Hoffm.).

Miso (p. 548): Certaine préparation de graines, de riz, et de sel, avec lequel on assaisonne le *Chirou* [*shiru*] du Japon.

Nattô (p. 597). Certain mets de grains légèrement cuits, et ensuite mis au four. Nattôjirou [nattôjiru]. *Chirou* [*shiru*] ou bouillon fair avec des grains [nattô].

Tôfou [tofu] (p. 803). Espèce d’aliment qui se fait avec des grains pulvérisés, en manière de fromage frais. Tôfouya [tofu-ya]. Maison où l’on fait ou vend des especès de fromages, faits de grains amollis dans l’eau et réduits en pâte. Address: Japan.

192. Saito, Akio. 1868. [Chronology of soybeans in Japan, 1700 to 1868, the last half of the Tokugawa/Edo period] (Document part). In: Akio Saito. 1985. Daizu Geppo (Soybean Monthly News). Jan. p. 16. Feb. p. 10-11. [Jap]

• **Summary:** 1707 May—The Tokugawa shogunate government (*bakufu*) passes a law to lower the prices of goods. Shops selling high-priced tofu are punished. But tofu makers argue that although the price of soybeans has dropped, the prices of other ingredients such as nigari and oil have risen.

1709—Kaibara Ekken (1630-1714) writes *Yamato Honso*, in which he discusses the shapes and use of the 1,362 products from Japan, China, and other countries. He notes that among the five crops (*go-koku*), soybeans are the second most widely produced after rice.

1712—Kaempfer, the German physician and naturalist who stayed in Japan during 1691-1692, writes *Nihon-shi* in the Netherlands. In the book he discusses soybeans and includes a very accurate sketch of the soybean. This draws the attention of other European scholars.

1722—Kinzanji miso becomes popular in Edo (today’s Tokyo).

1724 Feb.—The Tokugawa shogunate government commands that various goods, such as sake and shoyu [soy sauce], should be lower in price because the price of rice has decreased.

1726–The amount of shoyu imported to Edo from the Osaka-Kyoto area (*kudari shoyu*) is about 132,000 kegs (*taru*). Note: The average keg held 9 shô = 16.2 liters = 4.28 gallons (U.S.). Thus, 132,000 kegs = 564,960 gallons or 2,138,400 liters.

1730–The amount of shoyu imported to Edo from the Osaka-Kyoto area increases to 162,000 kegs.

1739–A French missionary living in China sends some soybean seeds to France for the first time. Attempts are made to grow them at the botanical garden, but the weather is not good and they fail. Later unsuccessful attempts were made to grow soybeans in Germany in 1786 and in England in 1790. There is another theory which says that the soybean went to Europe through Russia.

1748–The cookbook titled *Ryôri Kasen no Soshi* is published. It is the first cookbook which introduces the present form of tempura batter.

1753–The Swedish naturalist Linne (Linnaeus; 1707-1778) gives the soybean its first scientific name.

1770–Sugita Genpaku (lived 1733-1817) discusses the nutritional value of foods and uses the word *eiyo* (meaning “nutrition”) for the first time in Japan.

1782–The book *Tofu Hyakuchin* (One hundred rare and favorite tofu recipes) is written by Ka Hitsujun (his pen name) of Osaka. He introduces about 100 tofu recipes. The next year he publishes a supplementary volume, *Zoku Tofu Hyakuchin*. He divides tofu recipes into five different categories according to their special characteristics, like common, regular, good, very good, and fantastic (*jinjohin, tsuhin, kahin, myohin, and zepin*). In his jinjohin category, he includes 36 recipes such as *Kinome Dengaku, Kijiyaki, Dengaku*, etc.—showing that these were common recipes of the period. Over the next several years, many books with the word “Hitsujin” at the end of the title appear.

1783-1787–The terrible famine of the Tenmei period (*Tenmei no Dai Kikin*) occurs. It is worst in Oou province, where several hundred thousand people die of starvation. Many farm village are abandoned.

1788–At about this time the word *nukamiso* first appears.

1802–Takizawa Bakin (lived 1767-1848) writes *Kiryô Manroku*, a travel book, and in it he states: “Gion tofu is not as good as the Dengaku of Shinzaki, and Nanzenji tofu is not better than Awayuki in Edo. He criticizes tofu as a famous product from Kyoto (*Kyoto meibutsu tofu*) in his writing.

1804–Takahashi Fumiemon (or Bunuemon) on the island of Shodoshima starts making shoyu; he starts selling it in 1805.

1810–Choshi Shoyu receives an order from the Tokugawa Bakufu (*Gozen Goyo-rei*).

1818–There are now 10 miso manufacturers in Edo (today’s Tokyo). Yomo Hyobei’s miso shop in Shin Izumi-cho (presently Ningyo-cho 3-chome, Nihonbashi, Chuo-ku,

Tokyo) has a prosperous business. In some funny poems (*Senryu*) this shop is mentioned: “With sake and miso their name is ringing in the four directions” (“*Sake, miso de sono na mo shiho ni hibiku nari*”). And: “This shop is surrounded by nested boxes for food, and these boxes are used for red miso” (“*Jûbako ni torimakaretaru shiho-ga-mise*”). His red miso and his fine sake made with water from a waterfall (*takisui*) are very popular.

1822–Pounded natto (*tataki natto*), an instant food made of chopped natto, sells for about one-fifth the price of tofu on a weight basis. The restaurant Sasa no Yuki in the Negishi area of Edo, becomes well known for its tofu cuisine.

1832–Shoyu production in Noda reaches 23,000 koku (1 koku = 180 liters or 47.6 gallons), compared with only 17,000 koku in Choshi. Thus Noda passes Choshi in shoyu production.

1839–Shibata Kyuo (1783-1839), a follower of Shingaku, writes *Zokuzoku Kyuo Dowa* in which he pens words that later become famous: “In a place where the cuckoo can sing freely, you have to walk 3 *ri* (1 *ri* = 2.445 miles or 3.924 km) to buy your sake and 2 *ri* to buy your tofu” (*Hototogisu jiyu jizai ni naku sato wa, sakaya e san ri, tofu-ya e ni ri*). Shingaku, founded by Ishida Bangai, is a popular teaching of the time combining Shinto, Buddhism, and Confucianism (*Jugaku*). It emphasizes that “to understand heart/mind is the most important thing.”

1845–Inari-zushi becomes very popular in Edo. It originated around Hiranaga-cho (presently Sadacho 1-chome, Chiyoda-ku, Tokyo). It is made with deep-fried tofu pouches (*abura-agé*) stuffed with rice or okara and sells for 7 *mon* each.

1851–There are now 140 miso manufacturers in Edo. Half of them are in the Hongo area of Tokyo.

1853–Kitagawa Morisada (born 1810) writes *Morisada Manko*, the story of his life during the Edo period. In it he says of tofu: “In the Kyoto-Osaka area it is soft, white, and delicious, but in Edo [today’s Tokyo] it is hard, not white, and not tasty.” Of miso he says: “In the Kyoto-Osaka area many people make their own miso each winter, but in Edo people buy red miso and Inaka miso (from the countryside), and nobody makes their own miso.” Concerning the sale of natto (*natto-uri*) he says: “Cook soybeans, ferment them overnight, then sell them. In the old days, natto was sold only in the winter, but recently it has also come to be sold in the summer.”

1857–Soybean varieties brought back from Japan by the Perry Expedition are distributed to the U.S. Commissioner of Patents.

1858–Eitaro, a Japanese confectionery shop in Nihonbashi, Edo, starts selling Amanatto [sugar-sweetened red beans] made from Kintoki Sasage for the first time. Sasage is a type of cowpea [*Vigna sinensis*].

1864—For the first time shoyu made in the area around Edo (*Kanto shoyu*) is permitted to use the term “highest quality shoyu” *saijo shoyuto* describe the product.

1865—Inflation in Edo. The prices of rice, sake, miso, oil, vegetables, fish, etc. skyrocket. The Tokugawa Shogunate (*Bakufu*) orders people to lower their prices and forbids holding back or buying up goods. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

193. Jephson, Richard Mounteney; Elmhirst, Edward Pennell. 1869. *Our life in Japan*. London: Chapman and Hall. xviii + 428 p. Illust. No index. 23 cm. Facsimile edition reprinted in 2002 by Ganesha Publishing (London) and Edition Synapse (Tokyo). Series: Japan in English, Vol. 14.

• **Summary:** This is largely a silly book, that tries to be amusing, but ends up being foolish. It’s about Englishmen riding horseback and hunting in Japan, while taking many opportunities to belittle Japanese culture and religion—although there are some parts of Japanese culture that they appreciate. The authors arrived in Japan on 9 May 1866 after having been in Hong-Kong for a year. At breakfast in Japan, one of them, “suddenly changing his tone to one of reckless indifference,... tell the cook to make some more of that grill, with no end of Cayenne pepper and Worcestershire sauce in it!” (p. 62).

“Extreme cleanliness characterises not only their dwellings, but their food, manner of cooking, serving it, &c. As an instance to show how well assured we became of this, we may mention that on more than one occasion, when returning home late at night, we have partaken of the delicate seaweed soup that is hawked about in the streets of every town, and that without any fear of either the materials of the soup itself, or the cups we drank out of, being less clean than at our own table. When you come to consider that the price of the soup rendered it accessible to the meanest coolie,...” (p. 381). Note: This may well have been miso soup with wakame.

“They consume little or no meat, except in the form of soups;...” (p. 381).

“The first Japanese dinner we ever went to, caused us more wonderment at the time, and appeared to possess more novelty, than anything we had ever seen before. This was an entertainment given at Nagasaki by some of the chief officers of Prince Satsuma to the British Admiral and his friends” [on 28 July 1866] (p. 382). Every aspect of the 40-course dinner is described in great detail. “The drink was a spirit called *saki*, which is extracted from rice.” (p. 383). It is consumed hot.

The Bill of fare, describing briefly each of the 40 courses, is given; it includes “1. Bitter Green Tea (whipped),” hot *saki*, seaweed, salted plums, “14. Soup of fish and seaweed,” and “27. Soup of Vermicelli, with ‘Soy’

[probably sauce] and Red Berries.” (p. 385-86). Address: Englishmen.

194. Martens, Georg Matthias von. 1869. *Die Gartenbohnen. Ihre Verbreitung, Cultur und Benuetzung. Zweite vermehrte Ausgabe* [Garden beans. Their distribution, culture, and utilization. 2nd expanded edition]. Ravensburg, Germany: Druck und Verlag von Eugen Ulmer. 106 p. See p. 103-05. With 12 color plates. 28 cm. [94* ref. Ger]

• **Summary:** The author discusses the soybean under the name *Soja hispida* Moench, gives a botanical description of the species, then and gives a classification of 13 varieties that he had secured from various sources, of which he apparently grew but one. He grew that one by his window in Stuttgart, having obtained it from the village of Daguiga, near the city of Aigun [or Ai-hun, in northeast Heilungkiang province] on the Amur River. He planted the seeds on May 23 and they were ripe by Sept. 24. He describes their area of distribution in East Asia, from the 50th north latitude in Siberia down to the Moluccas near the equator, but notes that their center of cultivation is Japan, where they are made into miso (a type of butter), and a sauce (named “Soja”) that stimulates the appetite. He considers these two delicacies fit for gourmets and epicures. The sauce was introduced to Europe by the English. In China, the beans are cooked to a white, thick paste (*Brei*), tofu (*Teu hu*), one of the most popular foods there.

“In Europe, with suitable care, soybeans can be made to ripen/mature as far north as 53° north latitude, near Berlin. Thus, during the last continental blockade [first, of the British, by Napoleon, based on his 1806 Berlin Decree and 1807 Milan Decree; then in 1807 the British retaliated with their own sort of blockade], which is still an infamous memory, in the lands that at that time were part of the French empire, the soybean was prized and cultivated for a while as a coffee substitute (*als Kaffeessurrogat*). Later the milk vetch (*Kaffeewicke*; *Astragalus baeticus* L.), the chufa or earth almond (*Erdmandel*; *Cyperus esculentus* L.), and other coffee substitutes were used, but they have all been long since forgotten—except for chicory” [*Cichorium intybus*; the thick roots of this perennial herb are dried, ground, and roasted, then used to flavor or adulterate coffee].

Martens divides the species into 3 subspecies based on the form of the seed, under which the varieties are named according the color and size of the seed. In this, he creates an entirely new system for classifying and naming soybeans.

1. *Soja elliptica* Martens. Seeds oval. 1. *S. elliptica nigra*. Seeds black and elongated; obtained through his son from Shanghai and Paris. 2. *S. elliptica castanea*. Seeds brown and elongated; obtained from Chefoo (China), Venice (Italy), and Berlin. 3. *S. elliptica virescens*. Seeds

greenish yellow and elongated; obtained from Shanghai and Paris. 4. *S. elliptica lutescens*. Seeds yellow; brought by Mr. Schottmueller from Chefoo as “true Chinese oilbeans.”

II. *Soja sphaerica*. Seeds globose/spherical. 5. *S. sphaerica nigra*. Seeds black, large; obtained from Yokohama and Nagasaki, Japan. 6. *S. sphaerica minor*. Seeds black, small; obtained from Japan and Sumatra. 7. *S. sphaerica virescens*. Seeds greenish; obtained through his son from Yokohama as “Ao mame” and from Shanghai. 8. *S. sphaerica lutescens*. (The *Soja pallida* of Roxburgh). Seeds pea-colored to pea-yellow, large; obtained from Dr. Schuebler in Oslo (Christiana), Norway, as “New Japan peas,” under which name they have been recommended and popularized in the United States. 9. *S. sphaerica minima*. Seeds yellow, small; obtained through his son as “Shiro mame” from Yokohama.

III. *Soja compressa*. Seeds compressed. 10. *S. compressa nigra*. Seeds black and flat, the largest of all soybeans; obtained as “Kuro Mame” from Yokohama. 11. *S. compressa parvula*. Seeds black, small; obtained via Schottmueller from Chefoo. 12. *S. compressa virescens*. Seeds greenish; obtained from Chefoo and from Berlin as *Soja ochroleuca* Bouché. 13. *S. compressa zebra*. Seeds brown banded with black like a zebra; obtained from the Berlin Botanic Garden.

Note 1. This is the earliest document seen (Aug. 2002) which states clearly that soybeans have been (or can be) used as a coffee substitute (*als Kaffeesurrogat*). It is also the earliest German-language document seen (March 2001) that mentions soy coffee.

Note 2. This is the earliest document seen concerning soybeans in Norway. It is not clear whether or not the soybeans were being grown in Norway at this time.

Note 3. This is the earliest German-language document seen that mentions tofu, which it calls *Teu hu*.

Note 4. This is the earliest document seen that (Aug. 1999) that divides the species into 3 subspecies based on the form of the seed, under which the varieties are named according the color and size of the seed. Martens is the first to use a number of such terms in connection with the soybean, such as “nigra” “castanea,” “virescens,” “lutescens,” “elliptica,” “Soja elliptica,” “Soja pallida,” etc.

Note 4. This is the earliest document seen (Feb. 2007) that uses the word “nigra” to refer to black soybeans.

Note 5. This is the earliest document seen (July 2001) in any language that contains the word “Chefoo,” a port city in Shandong province, presently named Yantai (Wade-Giles: Yen-t'ai), and long associated with soybeans and soybean cake.

Note 6. Also discusses *Psophocarpus tetragonolobus* Dec. (p. 101). Address: Doctor der Naturwissenschaften, Germany.

195. Bretschneider, Emil V. 1870. The study and value of Chinese botanical works. *Chinese Recorder and Missionary Journal (Foochow)* 3(7):172-78. Dec. Published as a 51 page book in Foochow in 1871. [15 ref]

• **Summary:** “Ssu-ma-ts’ien [Ssu-ma Ch’ien, lived c. 145–c. 185 B.C.], the Herodotus of China, in his historical work *Shi-ki* [*Shih-chi*, “Historical Memoirs”], written in the second century B.C., states that the Emperor Shen-nung [Shennong] 2700 B.C. sowed the five kinds of corn [grain]. Cf. *Shi-ki* Chap I. [Note: Chinese characters are given for most Chinese words.] In later times the Chinese commentators agreed that here the following corns were meant:” 1. *Shu* Panicum millet (*Panicum miliaceum* L.). 2. *Tsi* [*Chi*] Foxtail / Setaria millet (*Setaria italica* Beauv.). 3. *Shu* Soja-bean (*Glycine hispida*). 4. *Mai* Wheat. 5. *Tao* Rice.

In the section titled *Shu* (p. 175), the author discusses the soja bean at length, with many illustrations of Chinese characters: “*Shu*. This name occurs in the Shi-king and in the Ch’un-ts’iu (v.s.) and was related in ancient times probably to the *Soja-bean* (*Soja Glycine*) *hispida*. The Kuang-ya (4th century) says that the *Shu* and the *Ta-tou* (great bean) are the same. The Pen-ts’ao (XXIV I and 8) states that there are several kinds of *Ta-tou*, a black, a white, and a yellow (so named after the color of the seeds) and that from these beans *Tsiang* (*Soja* [*chiang*]), *Tou-fu* (Bean-curd) and *Tou-yu* (Bean-oil) are made. The drawing for *Ta-tou* in the Ch. W.I. [*Chi wu ming shi t’u k’ao*, a Chinese botany illustrated by woodcuts] represents the *Soja hispida*.*”

Footnote: *”At Peking two kinds of *Ta-tou* are cultivated, the *Huang-ta-tou* (great yellow bean) and the *Hei-ta-tou* (black great bean). The name great bean refers not to the seeds but to the whole plant, the *Soja* bean being an erect herb 3 to 4 feet high. The *Huang-ta-tou*, called also *Mao-tou* (hairy bean) is the true *Soja* bean, an erect hairy plant with trifoliate leaves, little axillare [*sic*] flowers, pendulous pods, and white yellowish seeds of the size of a great pea, but a little oblong. This is the ‘*Phaseolus japonicus erectus*, *siliquis Lupini*, *fructu pisi majoris candito*’ described in Kaempfer Amoen. exot., the *Dolichos Soja* of Thunberg.”

“The *Hei-ta-tou*, which resembles much the *Soja* bean, is also covered with red hairs the seeds are the same size as the *Huang-tou* but black. I think it is a variety of the *Soja* bean. Both the yellow and the black bean are used for the same purpose at Peking for making *Soja*, and *Bean-curd*. *Bean curd* is one of the most important articles of food in China. It is prepared by macerating the above mentioned beans in water and milling them together with water. The liquid pap is filtered. To this fluid is added gypsum in order to coagulate the Casein and also Chlormagnesium [magnesium chloride {*nigari*} is a tofu coagulant]. The coagulated Casein or *Bean-curd* is a jelly-like appearance.

“It is known that Manchuria produces a large quantity of Beans (generally in the Reports on trade called Peas) from

which by pressure *Bean-oil* or *Pea-oil* is made. Bean-oil is largely used in China for cooking and for lighting lamps. The *Bean-cakes* are exported to Swatow [pinyin: Shantou, in Guangdong Province, southern China] for purposes of manure in the Sugar plantations. New-chuang [Newchwang, later Ying-K'ou] (in Manchuria) exports chiefly Bean-oil and Bean-cakes. I have not seen the Bean used in New-chuang for this purpose, but from the description of others it must be the Soja bean. Mr. Payen (l.c. 341) has examined leguminous fruits from China, which he calls *pois oléagineux de la Chine* and states that they contain 13 per cent. oil, whilst our common leguminous seeds contain only 2 to 3 per cent. oil." End of footnote.

Note 1. This is the earliest English-language document seen (Aug. 2003) that mentions an existing industrial use for soybean oil (for lighting lamps).

Note 2. This is the earliest English-language document seen (Sept. 2006) that uses the the word "Soja-bean" (or "Soja-beans") to refer to the soybean.

Note 3. This is the earliest English-language document seen (Sept. 2006) that mentions *Tou-yu* as the Chinese name for soybean oil.

Note 4. This is the earliest English-language document seen (Aug. 2003) that uses the word "cakes" or the term "Bean-cakes" to refer to ground, defatted soybeans. It is also the earliest document seen (March 2001) concerning the etymology of soybean cake or meal.

Note 5. This is the earliest English-language document seen (Feb. 2004) that uses the term "Bean-curd" (with a space in front of the word "Bean") to refer to tofu.

Note 6. This is also one of the earliest documents seen (Aug. 2003) that clearly refers to the cultivation of soybeans in Manchuria.

Also discusses: *Coix lachryma* (Job's tears, p. 175), various millets, and buckwheat (p. 175); hemp (*Cannabis sativa*), *Kô* (kudzu, *Pachyrrhisus Thunbergianus*, p. 176), plums, and almonds (p. 176). Address: Esq., M.D., China.

196. Bretschneider, Emil V. 1871. On the study and value of Chinese botanical works, with notes on the history of plants and geographical botany from Chinese sources. Foochow, China: Rozario, Marcal & Co. 51 p. See p. 9. Illust. with 8 Chinese woodcuts. 22 cm. [61* ref. Eng]

菽 *Shu*

大豆 *Tu-tou*

醬 *Tsiung* (Soja)

豆腐 *Tou-fu*

豆油 *Tou-yu*

• **Summary:** In the following, Chinese characters in the text precede most Chinese words, such as the names of plants, foods, authors, and many books. "Ssu-ma-ts'ien, the Herodotus of China, in his historical work *Shi-ki* (pinyin: *Shiji*, by Sima Qian), written in the second century B.C., states that the Emperor Shen-nung [Shennong] 2700 B.C. sowed the five kinds of corn [five grains, *wugu*] (p. 7).

The third of these is *shu*, the soja bean, which is discussed in both the text and in a long footnote (p. 9). "Shu. This name occurs in the *Shi-king* [*Shijing*, Book of Odes, ca. 1000 BC] and in the *Ch'un-ts'iu* [*Chunqiu*, Spring and Autumn Annals, 500 BC] (v.s. [see above]) and was related in ancient times probably to the Soja-bean (Soja / *Glycine hispida*). The Kuang-ya (4th century) says that the Shu and the *Ta-tou* (great bean) are the same. The *Pên-ts'ao* (XXIV, I and 8) states that there are several kinds of Ta-tou, a black, a white, and a yellow (so named after the colour of the seeds) and that from these beans *Tsiang* (Soja) [sic, jiang], *Tou-fu* (Bean-curd), and *Tou-yu* (Bean-oil) are made.*"

The footnote states: "* At Peking, two kinds of Ta-tou are cultivated, the *Huang-ta-tou* (great yellow bean) and the *Hei-ta-tou* (black great bean). The name great bean refers not to the seeds but to the whole plant, the Soja bean, being an erect herb 3 to 4 feet high. The *Huang-ta-tou*, called also *Mao-tou* (hairy bean) is the true *Soja* bean." "Both the yellow and the black bean are used for the same purpose at Peking for making Soja [soy sauce], and Bean-curd. Bean-curd is one of the most important articles of food in China. It is prepared by macerating the above mentioned beans in water and milling them together with water. The liquid pap is filtered. To this liquid is added gypsum in order to coagulate the Casein and also Chlormagnesium [magnesium chloride, i.e., nigari]. The coagulated Casein or Bean-curd is a jelly-like appearance.

"It is known that Manchuria produces a large quantity of the Beans (generally in the Reports on the trade called Peas) from which by pressure Bean-oil or Pea-oil is made. Bean oil is largely used in China for cooking and for lighting lamps. The Bean-cakes are exported to Swatow for purposes of manure in Sugar plantations. New-chuang [Newchwang; later Yingkou] (in Manchuria) exports chiefly Bean-oil and Bean-cakes."

The Preface begins: "In presenting these pages to the learned world, I consider it my duty to confess, that I am neither a Sinologue nor Botanist, my knowledge in Chinese as well as in Botany being very limited. But living in the Chinese Metropolis five years, I was encouraged by the favourable conditions in which I found myself, to make some inquiries into Chinese plants and to venture on the publication of these notes on Chinese Botany... Although I had the advantage of having access to the splendid library of the Russian Ecclesiastical Mission at Peking, where are to be found not only all Chinese works of importance, but

also most European books relating to China,—the reader will observe the want of some special works on Botany.”

Concerning the *Pên-ts'ao k'ang-mu* (p. 4-6), Bretschneider concludes: “On the whole it can be said... that the descriptions of plants therein are very unsatisfactory.” “The *Pên-ts'ao* is often inconvenient for reference, the paper and the impression being bad and the misprints numerous.”

As a general overview of the entire subject he concludes (p. 6-7): “It is true, the Chinese possess very little talent for observation and zeal for truth, the principal conditions for the naturalist. The Chinese style is inaccurate and often ambiguous. In addition to this the Chinese have an inclination to the marvelous and their opinions are often very puerile. None of the Chinese treatises can be compared with the admirable works of the ancient Romans and Greeks, *Plinius*, *Dioscorides* (both of the first century) &c. Nevertheless the Chinese works on natural science are very interesting, not only for the sinologues, but also for our European naturalists” interested in “geographical botany, and the history of cultivated plants.”

The last section, titled “List of Chinese works quoted in the foregoing notes” (p. 48-51) gives 61 works, sorted chronologically, and grouped into dynasties. “The information regarding them has been derived from an examination of the *Ssu-k'u ts'üan-shu*, the great Catalog of the Imperial Library 1790. I hereby give only the title, the author's names and the time of publication.” The earliest grouping, “Works written before the third century B.C.” begins: “*Shen-nung pên-ts'ao-king*. Classical herbal, or *Materia medica* of the Emperor Shên-nung, 2700 B.C.” Note: This is now generally cited as: *Shennong bencao jing* (Classical pharmacopoeia of Shennong, the Heavenly Husbandman) (100 AD).

Originally published as articles in the *Chinese Recorder and Missionary Journal* (Foochow) in 1870-71 (vol. 3). In a footnote describing this original publication, in Bretschneider's article in the *Journal of the North-China Branch of the Royal Asiatic Society*, 1882, he writes, “The editor of this periodical, at that time, seems to have had little experience in proof-reading; at any rate my paper (although presented in a very clear manuscript) came to light with such a profusion of misprints and other inaccuracies, that it would have been ridiculous to append to it a complete list of *errata*. I therefore would feel quite disposed to disavow this my first scientific essay; all the more since at the time I wrote it I had not yet sufficiently mastered the subject, and many of my former statements require modification.”

Also discusses: Hemp (*Cannabis sativa*, *ma*; the male plant is called *si* while the seed-bearing female plant is called *tsü*; p. 5, 10). *Arachis hypogaea* (Ground-nut, *Lo-hua-sheng*, p. 5). Job's tears (*Coix Lachryma*, p. 9). Kudzu (p. 10). Address: M.D., Physician of the Russian Legation at Peking, China.

197. Hepburn, James C. 1872. Japanese-English and English-Japanese dictionary. 2nd ed. Shanghai: American Presbyterian Mission Press. xxxi + 632 + 201 p. 28 cm.
• **Summary:** This is Hepburn's 2nd Japanese-English dictionary. The words are arranged alphabetically by their romanized spelling. Each word is written in three ways. After the romanized word (main entry), written in uppercase letters with diacritical marks (which we have largely omitted below), the same word is written in katakana, then again in Chinese characters. Then comes an abbreviation of the part of speech (n. = noun; v. = verb, etc.). Finally, one or more definitions are given.

This 2nd edition is 162 pages longer than the original 1867 edition; the Introduction is 19 pages longer, the Japanese-English section 74 pages longer, and the English-Japanese section 69 pages longer.

We will not repeat definitions that are identical to those in the 1867 edition. For new spellings, the 1867 spelling will be shown in parentheses. No new soy-related words were found in this 1872 edition. Soy-related words and terms in the 1872 edition: Adzuki (replaces Adzki) [azuki]. Amazake. Daidzu (replaces Daidz) [Daizu]. Hiriodzu (replaces Hiriodz) [Hiryozu]: A kind of food made of *tofu* fried in oil. Kinako.

Kiradzu. Koji: Barm or yeast made by the fermentation of rice or barley, in the process of making sake and soy. Koji-buta: A shallow box for holding barm. Miso. Miso wo suru: To rub *miso* in a mortar. Natto.

Nigari. Sashi (verb). Sashimi. Shitaji (replaces Sh'taji). Note 1. This is the earliest English-language document seen (May 2008) that uses the word “shitaji” to refer to shoyu or soy sauce.

Shoyu. Tofu: A kind of food made of beans, bean curd. Umeboshi (*hakubai*).

Yuba [hot water + leaf]. Yu-dofu.

The English-Japanese part of this dictionary starts after p. 558 and is titled “An index; or, Japanese equivalents for the most common English words.” Separately numbered to p. 132, it includes: “Barm, Kôji; tane.” “Soy, Shôyu.”

Terms NOT mentioned include Abura-age, Aburage, Atsu-age, Daitokuji natto, Edamame (or Eda mame or Yedamame), Ganmodoki, Hamanatto, Hiya-yakko, Kori-dofu, Koya-dofu, Nama-age, Okara, Tamari, Tonyu, Unohana, Yaki-dofu.

Note 2. The author apparently still did not realize that the various soyfoods he defined (with the possible exception of soy sauce) were made from soybeans. Address: M.D., LL.D.

198. Syrski, S. 1872. Landwirthschaft in Japan [Agriculture in Japan]. In: Karl von Scherzer, ed. 1872. Fachmaennische Berichte ueber die oesterreichisch-ungarische Expedition nach Siam, China und Japan. (1868-1871) [Expert Reports

on the Austro-Hungarian Expedition to Siam, China, and Japan]. Stuttgart: Verlag von Julius Maier. Appendix (Anhang), p. 175-227. See p. 175, 186, 190, 207. Index. 25 cm. [Ger]

• **Summary:** Page 186 gives the prices of 1 *shô* (*schio* = 1.825 liters) of various staples. A Tempo is apparently a Japanese unit of currency and a kr. is an Austro-Hungarian unit of currency: Fava beans (*Rosssbohnen, Sora-mame*) 4 Tempo (18 kr.), azuki (*Adsuki*) 10 Tempo (45 kr.), soybeans (*Daidzu; Dolichos soja*) 6 Tempo (27 kr.), Kintoki, with red seeds 5 Tempo (22 kr.) [Note: Kintoki is an abbreviation of “kintoki azuki,” which is a large variety of red azuki beans], barley 3 Tempo (13 kr.), wheat 6 Tempo (27 kr.), sesame 10 Tempo (45 kr.). Note: This is the earliest German-language document seen (Jan. 2005) that mentions azuki beans, which it calls *Adsuki*.

Page 190 notes: “The pickled beans (*Bohnen-sulze*), called “Misso” in Japan, is prepared from Daizu, a variety of *Dolichos*, together with wheat- and barley meal/flour, plus some added salt. The seasoning “Soia” (soy sauce) is likewise made from soybeans (*Daidzu-Dolichos*) and wheat meal with the addition of salt, and sprinkled on many foods... Essentially the diet of Japanese peasants consists of rice and the above-mentioned miso, therefore of an easily digestible carbohydrate (*aus einem leicht verdaulichen Kohlenhydrate*) and a strong nitrogenous substance (*stickstoffhaltigen Substanz*, protein), which is made easily digestible through processing. Concerning the nutritional value of their most important foods, Japanese peasants believe that fish, eggs, and poultry give the most strength (*Kraft*). These are followed by miso and vermicelli made from wheat flour, then rice and potatoes. They believe that buckwheat gives but little strength.

The section titled “Legumes” notes that “A green *Dolichos* variety (*Dolichos unguiculatus* according to Thunberg, called Jaenari in Japanese) is planted in the fields of central Japan in June and harvested at the beginning of October. A *Dolichos* variety (*Dolichos soia*; called *Daidzu* in Japanese) is planted in southern Japan in April and harvested in July. In central Japan this crop is planted between rows of wheat as they near maturity in May, and harvested in September. The ground is not manured (*nicht gedüngt*); the plants make use of the fertilizer (*Düngungsmaterial*) already applied for the wheat. As a rule, 6 *shô* of seed-beans yield a crop of 120 *shô* on a field of 300 *tsubo*.”

Note: Rein (1889, p. 57) states: “According to Scherzer, six *Shô* of seed-beans of the early-ripening Shiro-mame are credited with a crop of 120 *Shô* on 300 *Tsubo* of land. This means a harvest of only 20-fold, or, taking account of the seed lost in sprouting, about 12 pods of two beans each to every plant.”

“This type of *Dolichos*, as is well known, is the main ingredient in the seasoning “Soia” (shoyu) and the aspic or

pickle (*Sulze*) miso (“Misso”).

“A black variety of *Dolichos*, called Kuro-mame in Japanese (i.e. black soybeans) is planted in the area around Nagasaki in April on land fertilized with ashes (*auf einem mit Asche gedüngten Boden*), and in central Japan in May two seeds are laid in a hole between the rows of wheat. It is harvested in August or September in southern Japan, and in October in central Japan, and used rather widely as a food.”

Note 1. Scherzer lived 1821-1903.

Note 2. This is the earliest document seen (Feb. 2005) concerning soy in connection with (but not yet in) Hungary.

Note 3. This is the earliest document seen (Oct. 1999) that mentions the use of fertilizers for growing soybeans.

Note 4. This is the earliest document seen (Aug. 2001) that mentions carbohydrates in connection with soybeans. Address: PhD.

199. Balfour, Edward. 1873. *The Cyclopaedia of India and of eastern and southern Asia, commercial, industrial, and scientific; products of mineral, vegetable, and animal kingdoms, useful arts and manufactures*. 2nd ed.: Soja, Soja hispida. Madras, India. Printed at the Scottish and Adelphi presses. See vol. 5, p. 458. 26 cm. Reprinted in 1985 by International Book Distributors, Dehra Dun, India. [2 ref]

• **Summary:** “Soja, a genus of plants belonging to the natural order Leguminosae. *Soja hispida* (*Moench*), *S. japonica* (*Savi*), the *Dolichos soja*, (*Linn.*), is a native of Japan and the Moluccas, and abundant in the peninsula of India, though probably introduced there. The seeds resemble those of the haricot, French or kidney bean, and are used by the Chinese to form a favourite dish called ‘ten-hu,’ or ‘tau-hu,’ which looks like curd, and which, though insipid in itself, yet with proper seasoning is agreeable and wholesome. The Japanese call the seeds ‘miso,’ and put them into soup, of which they sometimes partake three times a day. They likewise prepare with them the sauce termed ‘sooja,’ which has been corrupted into ‘soy.’ Soy is only sparingly used as a sauce in Great Britain. It has the character of being a useful stomachic, but not more so than any of the other condiments when used with moderation.—*Eng. Cyc.*”

“*Soja hispida*, Moench, W.&A., Grah. *S. japonica*, Savi. *Dolichos soja*, L., Roxburgh. *Garu kulay*, Bengali. Sahuca bean, English. Soy-bean, English. *Bhut*, Punjabi.

“This plant grows in the N.W. Himalaya, in Nepal, at Taong Dong, in China, Japan and the Moluccas. It is found in the Sutlej valley between Rampur and Sunnam at an elevation of 6,000 feet. It is cultivated in many parts in the north of India. This is the well-known Chinese bean, which constitutes such large article of trade between the northern and southern parts of China. Of all vegetable substances, it is richer in nitrogenous or flesh-forming matter than any yet discovered, The Sahuca bean, is the white *Soja hispida*. *India Museum.*”

Note: This is the earliest English-language document seen (Aug. 2003) that uses the word “nitrogenous” in connection with the soybean—to refer to its protein. Address: L.R.C.S.E., Inspector General of Hospitals, Madras Medical Dep. [India].

200. Douglas, Carstairs. 1873. Chinese-English dictionary of the vernacular or spoken language of Amoy, with the principal variations of the Chang-chew and Chin-chew dialects. London: Truebner & Co. xix + 613 p. 28 cm.

• **Summary:** The Preface notes that the written language of China is uniform throughout the whole of China, but it is pronounced differently when read aloud in the different parts of China. Various spoken languages of China have already been studied by Western residents in China: the Mandarin, the Hakka, the vernaculars of Canton and Amoy, etc. The Amoy vernacular is believed to be spoken by 8-10 million people. Chinese characters are not used in this dictionary.

Abbreviations (at start of parentheses): R. = Reading or literary style as to sound or meaning. C. = Chang-ebew dialect. Cn. = Chin-chew dialect.

Soy-related terms include: chiap (R. id.), (Cn. tsap; p. 46 L.2) “juice, sap, gravy, etc. kôe-chiap, brine of salt or pickled fish, &c.” kê (Amoy = kôe; p. 201 L.7) “Pickled fish or shell fish.” kê-chiap (implied; p. 46 L.2).

hû (p. 156 R.3) tâu-hû “bean-curd shaped into squares (from the pulpy ‘tâu-hoe’), but not yet pressed. See tâu.

kôe-chiap (p. 242 L.4) “Brine of pickled fish or shell fish.”

tâu (p. 480 L.3) “pease or beans, pulse.” tau-khe “bean-cake from north China used as manure.” tâu-iû “soy [sauce].” tâu-chiû “a thick sauce made from pulse.” tâu-sí “salted beans” [soy nuggets]. tâu-hoe “soft bean curd not yet pressed or shaped.” tâu-chiû or tâu-hû “bean-curd shaped but not yet pressed.” tâu-hû-phê “bean curd made into thin sheets [yuba] for wrapping around eatables.”

Note: This is the earliest English-language document seen (Oct. 2008) that uses the term *tâu-hû-phê* to refer to yuba.

te tâu-hû “to shape the pieces of ‘tâu-hoe’ into pieces of ‘tâ-hû.’” tâu-koa “bean-curd that has been pressed in a cloth.” tâu-jú “bean-curd that has been pressed in a cloth then cut into smaller pieces and salted.” tâu-kiâm or tâu-che or tâu-thâu “refuse from manufacture of bean curd” [okara].

Note 1. A new, revised edition of this work was published in 1899 in London by Presbyterian Church of England. A supplement by Douglas and Barclay was published in Shanghai in 1923. In some cases, the 1923 edition is bound at the back of the 1873 edition. The 1873 edition is dedicated to Rev. James Legge, D.D., a Christian missionary and Chinese scholar.

Note 2. This is the earliest English-language document seen (Oct. 2001) that mentions okara, which it calls “refuse

from manufacture of bean curd,” along with its Chinese vernacular names.

Note 3. This is the earliest English-language document seen (Oct. 2001) that uses the term “cake” or “bean-cake” to refer to ground, defatted soybeans.

Note 4. the earliest English-language document seen (Feb. 2004) that uses the many terms such as “tâu-hoe,” “tâu-hû-phê,” “tâu-koa,” or “tâu-jú” to refer to the many uniquely Chinese varieties of tofu.

Note 5. This is the earliest English-language document seen (Jan. 2006) that contains the terms “kôe-chiap” or (by implication) “kê-chiap” to refer to pickled fish or shell-fish. These terms are said by some to be the ancestors of the Malay word *ketjap* / *kecap* meaning soy sauce.

Note 6. Schlegel (1894, p. 143 footnote) gives the character for *Kê-tsiap* but the 1873 ed. of Douglas’ dictionary gives no Chinese characters for any of the words defined. Address: Rev., M.A., LL.D. Glasgow, Missionary of the Presbyterian Church in England.

201. Hepburn, James C. 1873. Japanese-English and English-Japanese dictionary. Abridged by the author. New York: A.D.F. Randolph & Co.; London: Trübner & Co. vi + 330 + 206 p.

• **Summary:** “Preface: In order to render the Dictionary more portable and convenient in size, the Author has thought it best to abridge the larger work and bring it out in its present form. In so doing, he has omitted the Chinese and Japanese characters, the synonyms, and the examples showing the use of the words, excepting such as contained a peculiar idiom, and which could not be included in a definition. All the native Japanese words, with the exception of those which were rarely used or obsolete [such as Yudo-fu], have been retained; as, also, all the words derived from the Chinese which are in current use.”

“The Second, or English and Japanese, Part, has not been abridged or altered from the original, except in the correction of such typographical errors as were met with.”

Note 1. New words in this edition that are not in the 1867 edition are preceded by “***.”

Soy-related terms: Adzuki: A small red bean. Amazake: Sweet sake, a kind of fermented rice. Daidzu: A large white bean. Soja hispida. Hiriodzu: A kind of food made of tofu fried in oil.

Kinako: A kind of food made of beans. Kiradzu: The refuse of beans left in making tofu. Koji: Barm or yeast. Koji-buta: A shallow box for holding barm. Miso: A kind of sauce made of beans.

** Moromi: The grounds left in making soy, used as an article of food. Natto: A kind of food made of beans. Nigari: The brine formed by the deliquescence of salt. Sashimi: Raw fish cut in thin slices and eaten with soy. Shoyu: Soy, a kind of sauce made of fermented wheat and beans. Tofu: A

kind of food made of beans. Yuba: A kind of food made of beans.

Terms NOT mentioned include Aburage, Daitokuji natto, Edamame (or Eda mame or Yedamame), Hamanatto, Hiya-yakko, Koya-dofu, Kori-dofu, Okara, Tamari, Tonyu, Unohana, Yaki-dofu.

Note 2. The author apparently did not realize that the various soyfoods he defined (with the possible exception of soy sauce) were made from soybeans. Address: M.D., LL.D.

202. Heuzé, Gustave. 1873. *Les plantes alimentaires* [Edible plants. 2 vols.]. Paris: Libraire Agricole de la Maison Rustique. Undated. See Vol. II, p. 381-82. 27 cm. [soy ref. Fre]

• **Summary:** Vol. II, Part II concerns “Leguminous plants with pods.” In Book 2, titled “Dolic or dolique” (p. 371+), Chapter II (p. 373-83) concerns “Species and varieties.” The soybean is in the second major group, “Dwarf dolics” (p. 380), as follows: Variety “15.–Japanese soybean (*Dolic du Japon*. *Dolichos soja*, Linn.; p. 381-82) states: Synonyms: *Dolic soja*. *Soja japonica*, Sav. *Dolic à café* [the coffee bean]. *Soja hispida*, Moench.”

A botanical description in French follows: “The stems, which are from 65 to 100 cm tall, are hispid / hairy, straight, straight, and rust-colored. The leaves have three cordiform folioles, equipped with stipules; flowers violet, sessile [attached directly by the base], in short clusters, straight and axillary [growing from an axil]. The pods are lightly curved, slightly pendulous, very short, bumpy, and covered with rust-colored hairs. The seeds are oval, shiny, compressed, clear nankeen (*nankin clair*; brownish yellow) in color, and almost dull.

This variety is cultivated in China, Japan, and Asia. Its flowers are white, purple, or violet, according to the variety.

The types that are most widely cultivated, after the core / main type [nankeen colored], are two: 1. The black soybean (*Le soja noir*, *Soja hispida*). 2. The yellow soybean (*Le soja jaune*, *Soja ochroleuca*).

The Japanese transform the seeds of this dolic into a paste (*miso*), with which they make a sauce (*soja*), which they use to prepare various foods.

This species is an annual; in France it has been called *pois oléagineux* (“oil peas”). It was introduced here from China by Mr. de Montigny. It is cultivated in some points in the departments of Ariège and of Haute-Garonne. It grows rapidly and is quite resistant to drought.

Also discusses: *Dolichos tetragonolobus* L. Synonyms: *Pois carré* (in Europe). *Psophocarpus tetragonolobus* DC. In India it is known as *mourou-kouavré* (p. 377). Gustave Heuzé lived 1816-1907. The book is undated, but the date usually given in catalogs is 1873 (less commonly as 1872). Address: Member of the Central Society of Agriculture of France. Adjunct inspector general of agriculture.

203. Hoffmann, J.J. 1874. Ueber die Bereitung von Schoju, Sake und Myrin [On the preparation of shoyu, saké and mirin]. *Mittheilungen der Deutschen Gesellschaft fuer Natur- und Voelkerkunde Ostasiens (Yokohama)* 1(6):8-11. Dec. [Ger]

• **Summary:** The author was the first Westerner to make a scientific study of the shoyu process, of which he gives an accurate and detailed 2-page description: “Soybean sauce (*Bohnensauce*)–shoyu–is for the Japanese almost as indispensable as rice and is used as widely as tea or tobacco. The rich man and the beggar use it in the same way, only in different quantities as the mean seasoning at their meals, and in no household, in fact at no meal may it be absent. It is made in large factories, and in countless stores in all cities and towns throughout the entire island empire, it is stocked and sold in small wooden kegs. It is made with soybeans, indeed very high protein, starch-free small soybeans (*Dolichos Soja jap*. Nagatemame), plus wheat, salt, and water in the same proportions by volume. Small kegs are used to measure the ingredients. The beans and grains are used in the same condition of dryness.

Note 1. The date on the title page is Nov. 1876, but Hoffmann’s paper was not presented until 1878. This is the earliest document seen (Oct. 2001) that is a study of several fermented foods, including one made from soybeans–*shoyu*. Address: Prof., School of Medicine, Tokyo Univ., Japan.

204. Williams, Samuel Wells. 1874. A syllabic dictionary of the Chinese language; arranged according to the Wu-Fang Yuen Yin, with the pronunciation of the characters as heard in Peking, Canton, Amoy, and Shanghai. Shanghai, China: American Presbyterian Mission Press. lxxxiv + 1252 p. 28 x 22 cm. [8 ref. Eng; chi]

• **Summary:** In this dictionary, the Chinese characters are arranged alphabetically. Each main character, written large, has the pronunciation written below it, and the meaning written in English to the right. Below these are numerous compound words in which the character appears, followed by a definition of each. No pronunciation is given for compounds or combinations of several characters, such as teu-fu [dofu], which makes the dictionary hard to use. The main radical relating to soya is no. 151, Teu, 7 strokes, referring to pulses and sacrificial vessels (p. 874).

Page 145, under fu (rotten, corrupt, spoiled), lists the characters (teu-fu) for “bean curd; low policeman and underlings are named teu-fu-kwan because they live on and are no better than this curd; and also the teachers in low government schools.”

Page 764, under shi, lists the characters for “salted beans” [soy nuggets], “salted beans and flour,” “soy [soy sauce; shi yu in Chinese or shoyu in Japanese], an English word probably derived from this name.”

Pages 874-75, under teu, list the characters for “legumes of every kind, pea, beans,” “bean-curd jelly” [tofu].

Page 968, under tsiang [ch'iang], lists the characters for "a relish made of salt mixed with bean or other kinds of flour, and water, and allowed to remain until cured; it is used as a condiment; relishes, sauces, condiments; salted preparations," "a dry relish," "a shop for sale of oilman's stores, and condiments," "bean sauce, this is the basis of most of the Chinese relishes," "vegetables seasoned in soy."

On page 839, under ta (big), there is no listing for ta-teu, the soybean. On page 252, under hwang (yellow), there is no listing for hwang-teu, the yellow soybean. On page 580, under mao (hair), there is no listing for mao-teu (fresh green soybeans). Thus it seems that the compiler of this dictionary was unaware of the soybean.

Page 1111, under yiu, lists the character for oil in various combinations. When preceded by the character for "fragrant" it refers to "sesamum, gingilie, or benne oil," made from the seeds of *Sesamum orientale*. Soybean oil is not specifically mentioned.

Note: This is the earliest English-language document seen (Feb. 2005) that uses the word "benne" to refer to sesame seeds. Address: United States Legation, Peking.

205. Imperial Japanese Commission to the International Exhibition at Philadelphia (1876). 1876. Official catalogue of the Japanese section: And descriptive notes on the industry and agriculture of Japan. Philadelphia, Pennsylvania: Published by the Japanese Commission. 130 p. 24 cm.

• **Summary:** The Preface (p. 3) begins: "Never until the year 1873, had Japan participated to any great extent in the various European International Exhibitions. Up to that time she had been merely represented by some of the provincial governments, acting independently of the central Government. However, the Government determined to be worthily represented at the Vienna International Exhibition of 1873,..." But Japan was well prepared for the Philadelphia Centennial Exhibition.

Under classes of "Agricultural products" (p. 32, 34): Class 621—Peas, beans, etc. (incl. Soya, adzuki). Class 650—Sea weeds (incl. Vegetable isinglass [agar, kanten]). Class 657—Flour and starch (incl. Kudzu [*Pueraria thunbergiana*]). Class 659—Wines and other kinds of drinks (incl. Sake, Soy {a kind of sauce}).

Page 71 discusses relief painting in lacquer: "The lacquer can even be carved, and, finally, the artisan can incrustate mother-of-pearl shell, ivory, thin metal, or anything he likes into the lacquer. By mixing a sort of paste made of [soy] bean powder, or the white of eggs, with the lacquer, he can thicken it to such an extent as to give it a kind of plasticity, admitting the possibility of making impressions which remain visible after hardening."

In the long chapter titled "Descriptive notes on the industry and agriculture of Japan (p. 37-117) is section on "Agricultural products. Classes 620-21—Cereals, vegetables,

etc." (p. 104-06). Beans, generally referring to soy beans, are mentioned many times. "Manures of a mineral nature consist of marls, shells and ashes; those of vegetable origin of inferior kinds of beans and peas or their residues, of [soy bean] oil-cakes, the residues of sake-brewing,..."

"The excellent kinds of beans and peas, which are made into a kind of cheese [tofu] and a peculiar mixed dish called 'misso' [miso] afford the necessary nitrogenous substances, and to a certain extent form the substitute for meat; the Soyu [shoyu; soy sauce] also belongs to this kind of food, and is frequently mixed with other dishes. With regard to animal food, it is limited almost exclusively to fish, poultry and eggs. But a change has already been effected to a certain extent in the larger towns, where butcheries have been established. An experiment of sheep farming was commenced one or two years ago" (p. 106).

Under "Class 657, 658—Flour, starch, etc. we read (p. 110-11): "It has been mentioned above that the various kinds of beans constitute a very important element of the national diet. Some of the preparations made of beans and peas are worthy of a short notice. In preparing the 'Tofu,' white beans are soaked in water, ground between two stones, strained through a sieve and afterwards boiled. The contents of the kettle are then filtered through cotton cloth and the residue pressed out. The liquid [soymilk], which may be considered as an alkaline solution of legumine, is precipitated by successive additions of the bitter lye [nigari] which runs off from sea-salt by deliquation, and which is mostly composed of magnesium salts. The precipitate is legumine with a small percentage of legumine-composites [-composites] and a large proportion of water. The 'yuba' is also made by boiling the above-mentioned legumine solution in an open kettle, with a slight addition of ash-lye. The insoluble skins which form upon the surface of the boiling liquid, are taken off and dried. Another kind of preserved food is the 'misso' [miso]. White beans are first boiled, pounded in a mortar to form a paste, then mixed with fermenting rice and salt, whereupon the whole mixture is placed in tubs and left in some cool place; at the end of a month it is ready for use. In mentioning the various preparations made of beans, the 'Soy' or, as the Japanese call it, 'Soyu' [shoyu] should not be omitted; but as it belongs rather to the produce of fermentation, the process will be described under the head of Class 660 [Alcohol and malt liquors].

One page 112 we read: The soy, or 'soyu,' is made of a small bean, the 'Dolichos soja,' or 'Soya hispida,' to which are mixed wheat, salt and water. The beans are first boiled, and the wheat bruised and steamed; both are then mixed with a small addition of fermenting wheat, placed in flat wooden boxes and kept for several days at a fixed temperature in a special room. At the end of three days, the mass [koji] is all covered with fungi and partly with roots of germination. After having been mixed with a salt-lye, which

has been prepared hot and allowed afterwards to cool down, and to depose certain impurities, the mashings are now removed to enormous coops [vats] in which they are kept for several years. Experience has shown that the best soy is produced by mixing equal quantities of mashings of three years and five years' standing. This mixture is transferred into bags of thick cotton-cloth, placed in large boxes, and then submitted to pressure—at first only to a slight pressure, which yields the best soy, and afterwards, however, to a gradually increasing pressure, the separation of the last portions being assisted by an addition of salt water.

“The soy forms a very important condiment for all kinds of dishes, and is consumed in large quantities. In 1874 the production amounted to 1,506,402 hectolitres!

An interesting term in the Index (p. 129) is “Bean-cheese,” which refers to tofu (p. 110).

Also: Use of hemp (*asa*) for manufacture of cloth (p. 77, 113). The tea ceremony (p. 108). Sea weeds, incl. cultivated nori and Asakusa nori in Tokio bay, kanten or vegetable isinglass, and fu (that resembles carrageen [carrageenan] moss and is used in the sizing of the warp of silk goods) (p. 109). Kudzu (p. 110). Sake (p. 111). Address: Japan.

206. Satow, Ernest Mason; Masakata, Ishibashi. comps. 1876. An English-Japanese dictionary of the spoken language. London: Trübner & Co.; Yokohama, Japan: Lane, Crawford, & Co. xv + 366 p.

• **Summary:** Page 295: Soup, n. [noun] (flavored with soy) *tsuyu; sui-mono*; (made with miso) *otsuke; miso-shiru; o mi otsuke* (the last used only by women).

Soy, n. *shōyu* (c).

Note: The symbol “(c)” denotes that the word which precedes it is of Chinese origin. However, the word *shōyu* is not of Chinese origin. Address: 1. Japanese Secretary to H.M. Legation at Yedo; 2. Imperial Japanese Foreign Office.

207. *Tokyo Iji Shinshi (Tokyo Medical Journal)*. 1878. Miso, tofu, yuba shikensetsu [On the nutritional value of miso, tofu, yuba]. No 25. p. 3-7. July. [Jap]*

208. Ahlburg, H. 1878. Das Koji und die Hefe [Koji and the yeasts: About *Eurotium oryzae*]. *Mittheilungen der Deutschen Gesellschaft fuer Natur- und Voelkerkunde Ostasiens (Yokohama)* 2(16):252-55. In: Korschelt 1878. Ueber sake... [2 ref. Ger]

• **Summary:** Contents: Observed facts. Discussion of the genera *Mucor*, *Aspergillus (flavus)*, *Botrytis*, *Eurotium (Oryzae)*, *Monilia flava*. Address: Japan.

209. Commission Imperiale à l'Exposition Universelle de Paris, 1878. 1878. Le Japon à l'Exposition Universelle de 1878 [Japan at the Universal Exposition of 1878]. Paris: Publiè sous la Direction de la Commission Impériale de

Japon. 2 volumes in one. 26 cm. Preface by M. Matsugata. Facsimile edition (preservation photocopy) reprinted in 1998 by BookLab, Inc. [Fre]

• **Summary:** Part I (159 p.) is about the geography and history of Japan. Part II (192 p.) is about art, education and teaching, industry, production, agriculture, and horticulture in Japan. The Preface is by M. Matsugata, Head of the Imperial Department of Agriculture and President of the Japanese Commission to the Universal Exposition of 1878.

In Part II, the section on “Fermented beverages—Condiments” contains a long section on “Shoyu” (p. 124-25). It gives a brief description and discusses the ingredients (equal parts dehulled wheat, soybeans, and salt; the best salt comes from Aho in the province of Harima), purifying the salt by dissolving then heating it in water, and stirring the mash (2 or 3 times a day from June to September), aging for 15, 20, or sometimes 30 months to obtain shoyu. The mash is then pressed in cotton sacks, and the resulting liquid is boiled, cooled, allowed to settle, then stored in small wooden tubs. The residue from the first pressing can be used to make a second-grade shoyu, which can be mixed in varying proportions into different grades of shoyu.

In the section on “Agriculture,” the subsection on “Cereal grains” (p. 133) discusses both soybeans and azuki beans (*Phaseolus radiatus*). “The soybean (*Le Mame*) or *Soja Hispida* is comprised of several varieties: The green soybean (*l’Awo mame*), the white soybean (*le Shiro mame*), the black soybean (*le Kuro-mame*), the yellow soybean (*le Ki mame*), *Konrinza mame*, *Ichia mame*, and the saddled soybean (*Kurakake mame*). Some of these different varieties are early maturing and some are late.

“The soybean finds numerous uses, for it can be eaten cooked, ground into flour, or used for the manufacture of shoyu, miso, or tofu. The bean, its seed coat, pod, leaves, and stem serve as feed for horses. Lately it has been used on a trial basis to feed sheep, and the results proved that it was the best feed that one could give to them.

“Tofu is made with two kinds of boiled soybeans: White and yellow. After being pressed and hardened, it will last for a long time. Yuba is a somewhat similar product, made with the same ingredients. Note: This is the earliest French-language document seen (March 2004) that contains the word *Tofu*.

“The black soybean speckled with white (*Gan Kui mame [Gankui]*) is one of the best varieties to eat.”

The azuki (“*L’Azuki ou Phaseolus radiatus*”) includes the early and late types, and comes in several varieties such as the *Hine no Azuki*, the *Dainagon Azuki (le Dai Nagon Azuki)*, the *White Azuki (Shiro Azuki)*, etc. Sweet azuki bean paste (*L’An*), is widely used in confectionery, is made by mixing the Azuki and sugar. One cake made from it is called *Yokan*. Azuki flour (*farine de l’Azuki*) is used to remove greasy stains from fabric / cloth. The *Yaye Nari*, a green bean (*haricot*), is used in the same ways as the azuki bean

(p. 135). Note: This is the earliest French-language document seen (Jan. 2005) that uses the word “Azuki.”

Also discusses: Sea vegetables (many individual types with both Japanese and scientific names, p. 127-29). Kudzu (*Pueraria thumbergiana* [sic, thunbergiana], starch from the roots and fodder from the leaves, p. 139; fibers used to make cloth, p. 153). Hemp seeds (p. 139). Sesame seeds and sesame oil (*Goma*, p. 145). Peanuts and peanut oil (*Tojin mame*, p. 145). Hemp as a fiber plant (p. 151). Address: Paris, France.

210. Haberlandt, Friedrich. 1878. Erste Abtheilung [Part 1, pages 10-15 (Document part)]. In: F. Haberlandt. 1878. Die Sojabohne [The Soybean]. Vienna: Carl Gerold's Sohn. ii + 119 p. [4 ref. Ger]

• **Summary:** “The value of soybeans results from their high content of the most important nutrients. The first analysis that made the composition of these seeds known in Germany was carried out by [Mr.] Senff using seeds obtained directly from Japan by Mr. [Carl] Berndt. The results of this analysis* (Footnote: *See the journal *Chemischer Ackermann* (“Chemical Farmer”) 1872, p. 123) showed that 100 parts of air-dried soybeans have the following composition:” A table (p. 11) based on two samples and their average shows: Water 6.91%, protein 38.29%, oil (*Fett*) 18.71%, nitrogen-free extract 26.20%, crude fiber 5.33%, and ash (minerals) 4.56%.

A second table (p. 11) which compares the nutritional composition of soybeans, common beans (*Fisole*), peas, lentils, fava beans (*Pferdebohne = Vicia faba* = “horse beans”) and yellow lupins, shows that soybeans have a much higher content of protein (38.29%, followed yellow lupins at 35.32%), oil (18.71% followed by yellow lupins at 4.97%), and ash (minerals, 4.56%, followed by yellow lupins at 3.78%).

“There are few statements in the pertinent literature concerning soybean utilization. But there is no doubt that, in their native countries, they have heretofore been used exclusively as foods. In *Synopsis der Pflanzenkunde* (“Synopsis of Experience with Plant Culture;” 1877, Hannover, Vol 2, p. 413), Dr. Johannes Leunis says that soybeans taste good and are also used to make a thick brown sauce, which is added to almost all foods in India, China, and Japan, and is also an article of commerce in Europe, used to improve sauces and gravies. However the sauce now available in Germany is said to be made of other ingredients rather than soybeans, namely mushrooms. From England, where this soy sauce is imported from India by the firm Grosse [sic, Crosse] & Blackwell in London, its use is spreading to the continent and is available in Vienna. Kaempfer, who describes the soybean plant so excellently in the classic work on his travels, also gives detailed information about its use as foods in Japan, which has since appeared in numerous other writings, such as Oken’s

Allgemeine Naturgeschichte aller Stande (“General Natural History of All Places”) [1841] vol. III, part 3, page 1661.”

Haberlandt then quotes in their entirety Kaempfer’s descriptions of miso and soy sauce (about 200 words each). He also indicates a vague knowledge of tofu.

“It is reported that in China a type of food is made from the oilcakes or perhaps from soybeans directly, that superficially resembles a soft cheese or Quark (a European white unfermented cheese; *nach dem weichen Käse oder dem Quark ähnliche Speise machen*) presumably the original mush is subjected to a fermentation process and then mixed with pepper and other spices. A large part of China’s population is said to use this staple food.” Note 1. This is also the earliest German-language document seen (Feb. 2004) that uses the word “Quark” in connection with tofu.

He goes on to describe the chemical composition and uses of the oil presscake in China.

Page 14: “Since the oil content (*Oelgehalt*) of the soybean is lower than that of other oilseeds, it must be assumed in advance that its application for the production of oil (*Oelgewinnung*) must be disregarded. This also became evident through a test which Mr. Carl Berndt conducted on the rest of the soybeans that hadn’t been used for agronomic trials. He was kind enough to give me the following report: ‘Although I should have expected that one could not determine the full quantity of oil from a relatively small quantity of seeds, I was still astonished that there was not more than 6%. The analysis had resulted in 16 to 18%, and therefore the mechanical quantity was estimated at 10-12%.

“Actually it was quite difficult to locate an oil miller who would clean his mill sufficiently that one received pure oil. Moreover, these people didn’t proceed with the interest and care that are necessary, since I found lots of oil in the presscakes, indicating that they had not been pressed sufficiently. In terms of quality, I am more satisfied than I had expected to be. I had someone prepared baked goods where oil was used in the recipe and I could not detect the slightest after-taste. As a cross-check, I had another part of the baked goods prepared with Provenzer oil, but I could not tell the difference between the two.

“To what extent the [soybean] oil could be used for industrial [non-food] purposes, especially as a mordant (*Beize*) for the dyeing of Turkish-red, which uses very old, spent oil (that is soluble in carbonic potassium) can only be established when a sufficient quantity of oil becomes available.”

Note 2. This is the earliest document seen (Oct. 2001) concerning special industrial uses of soybean oil as a non-drying oil, as a mordant for dyeing. Address: Hochschule fuer Bodencultur, Vienna, Austria.

211. Haberlandt, Friedrich. 1878. Vierte Abtheilung. 9. Chemische Zusammensetzung der Sojabohne,

Fuetterungsversuche mit dem Stroh und Zubereitung der Samen als Nahrungsmittel fuer den Menschen [Part 4, Section 9. Chemical composition of the soybean, feeding trials with the straw, and preparation of the seeds as human food (Document part)]. In: F. Haberlandt. 1878. *Die Sojabohne [The Soybean]*. Vienna: Carl Gerold's Sohn. ii + 119 p. See p. 87-110. [4 ref. Ger]

• **Summary:** A table (p. 95, continued from p. 84, and reproduced in part in Piper & Morse. 1923. *The Soybean*. p. 156) shows that Haberlandt planted seeds of one variety at Vienna at intervals of one week for 11 even weeks throughout the season (from March 31 to June 9) and attempted to correlate the number of days to maturity (life periods) with the number of heat units (*Wärmesumme / Wärmesummen*, in °C) required for three different stages of growth—germination, blossoming, and maturity. The life period ranged from 182 days for the seeds planted first to 138 days to the seeds planted next to last. The seeds planted first (March 31) required the most heat units to come to maturity (2,972°C) whereas those planted last (June 9) required the fewest heat units (2,322).

Note 1. This is the earliest document seen (March 2003) concerning the scientific study of soybean germination, or the relationship between heat units and germination.

In 1877 several new analyses of the soybean were conducted, to add to those from past years. One was communicated by Mr. A. Tomasek in Napagedl [in Mähren / Moravia, a region in today's central Czech Republic], the other by Dr. Eduard Mach in St. Michele [South Tirol]. The first was conducted by the sugar factory chemist, Mr. Schroeder, in Napagedl (p. 103). For air-dried reddish-brown (*rothbraun*) and yellow soybeans he found the following: Protein: 36.12% / 35.87%. Nitrogen: 5.78% / 5.74%. Fat: 17.50% / 18.25%.

Dr. Mach had his analysis conducted in the agricultural education center by his assistant C. Portele. He examined 3 varieties (yellow, reddish-brown, and black) obtained from Haberlandt and grown out in San Michele, and a fourth reddish-brown variety, which is grown in southern Tirol (Tyrol) as the Coffee Bean, has been acclimatized there for a long time, and until now has remained entirely unknown and unrecognized. The composition of the four is as follows: Water: 8.1 / 9.4 / 9.9 / 10.1%. Ash: 5.4 / 5.1 / 4.8 / 5.2%. Protein: 36.8 / 31.6 / 31.2 / 38.1%. Fat: 17.6 / 17.4 / 18.1 / 17.8%. Crude fiber: 4.8 / 4.3 / 4.2 / ?%. (p. 103-04).

Also Mr. C. Caplan (p. 104), assistant at the agricultural chemistry research station in Vienna, conducted analyses of the seeds, their pods, and the leaves and stalk. His results were published in 1878 in the *Oesterreichisches landw. Wochenblatt* (No. 3, p. 26): Water: 14.0 / 14.0 / 14.0%. Protein: 32.32 / 4.64 / 6.08%. Fat: 16.76 / 1.29 / 2.03%. Nitrogen-free extract: 26.56 / 41.87 / 37.12%. Crude fiber: 5.57 / 30.45 / 22.79%. Ash: 4.76 / 7.79 / 9.31%.

“It is unnecessary to emphasize the importance of the soybean as a food for man and his animals. Not only is there high nutritional value in the beans and straw, they also have a flavor such that eating them takes no special effort.

“A considerable number of taste experiments have been made and it can be stated that nobody's sense of taste has revolted against food uses of soybeans.

“Dr. F. Leithner complains that they are not easily cooked softly enough. ‘I tasted them with oil and vinegar, sort of baked bean style, and as a soup. In oil and vinegar they seemed to have a slightly sweet aftertaste, like sweet peas. Also as soup they reminded me of regular bean soup with a slightly sweet flavor. One of my guests liked them very much.’

“Mr. Alfred Erttel, captain of the royal-imperial army in Planta near Meran wrote: ‘Cooking experiments were highly satisfactory; the soybean is finer and has a better flavor than regular beans.’

“Director A. Baumgartner in Grotenhof had them prepared as a salad and as a vegetable. He found them to be very much like regular beans.

“Director D.E. Mach commented about the taste experiment he conducted: ‘In order to come to a valid opinion about the savoriness of the soybean and its value as a food, we tried to have them prepared in various ways. We must admit that they were very tasty cooked whole or as a puree, as well as with oil and vinegar, yes, even finer than peas or lentils. It must be mentioned however that soybeans take a long time to cook soft.’

“By adding that no negative opinion about the soybean has come to my attention, I would also like to state: I believe that the seeds of the soybean by themselves are too concentrated a food and they would be best mixed with other foods, which are less concentrated and contain mostly carbohydrates. The Chinese and Japanese have instinctively been led toward that. They add their ‘miso’ or their soy mush to most of their other dishes in a certain ratio without eating soy by itself. Kaempfer describes a way that the Chinese and Japanese prepare miso which is very complicated; the cooking takes a lot of time and money. So it would seem simplest to use soybeans in the kitchen in a finely ground form. I had soy grits of that kind added to various potato dishes, for example mashed potatoes and rice. I mixed soy grits with wheat grits, cooked with milk or water, and I had soy grits added to mashed potatoes to make a dish resembling Polenta. This might be called Sojenta. My family also experimented with adding soy meal to wheat flour to make bread, with and without the addition of milk, and in all cases we were highly pleased with the results. This opinion about the taste of soy was shared by others, who shared in the tasting.”

Note 2. This is the earliest document seen (Oct. 2001) concerning what is probably whole (full-fat) soy flour. Note 3. This is the earliest document seen (Sept. 2004) that

describes a cereal-soy blend, or the use of soy flour to make bread.

Note 4. At this point (p. 107-08) Haberlandt adds a lengthy footnote from his friend and colleague Professor W. Hecke who followed with great interest the progress of soy culture in Austria and who had conducted taste tests with soy grits. Hecke encouraged the use of soy with potatoes to make a nutritionally balanced, inexpensive, tasty, and easily accepted basic dish. One part of soy flour or grits and two parts fresh potatoes were cooked separately, then mixed into a fairly stiff mush / porridge. Salt and fried onions were added as seasonings. The milk and fat, ordinarily added to mashed potato dishes could be omitted.

Haberlandt then continues: "If used in this way, the soybean will someday play a major role in the diets of the poor. It will be more than salt for potatoes. With its fat (*Fett*, i.e., oil) it will replace lard [Note 5. Soybean oil was later used to make lard compounds, lard substitutes, and shortening] and with its protein it will supply strength. Appropriate mixtures will be easily developed according to the other ingredients used.

"As grits or fine meal (flour) it will also move into the palaces of the rich, in whose kitchens from India and China is already a common item. It will only be a question of finding suitable ways of preparing them. The flavor of half-cooked soy grits resembles that of poppy seeds or almonds, and should be suitable as an addition to the finest foods otherwise made from meals (flour).

"The soybean could be of major importance in the provisioning of forts and ships and in supplies for armies. It could justly be used as a better substitute for peas in 'Pea Sausage' [*Erbstwurst*, a cooked food containing pea meal fixed with fat pork and salt.] It will compete effectively as a coffee substitute with other plant products now used for this purpose. Soy coffee is already produced in South Tirol (Austria) and Istria (now a peninsula in Croatia and Slovenia). Mr. Franz Mark of Budapest [Hungary] pointed out the possibility of using soybeans as a chocolate substitute, for which it would undoubtedly serve better than the peanut, which, in Marseilles [port in southern France], is mixed with sugar to make an inexpensive chocolate substitute."

Note 6. This is the earliest document seen (Aug. 2002) concerning the use of soy as a meat extender (in Pea Sausage).

Note 7. This is the earliest document seen (Oct. 2004) that mentions the possibility of using soybeans as a chocolate substitute. Address: Hochschule fuer Bodencultur, Vienna, Austria.

212. Wernich, Albrecht Ludwig Agathon. 1878. *Geografisch-medicinische Studien nach den Erlebnissen einer Reise um die Erde* [Geographical-medicinal studies based on the experiences of a trip around the world]. Berlin:

Verlag von August Hirschwald. x + 423 p. See p. 85. No index. 23 cm. [3 soy ref. Ger]

• **Summary:** Chapter 5, titled "Japan—Food value and foods" contains a long discussion of the soybean (*Dolichos Soja*) and soyfoods (p. 84-87) including tofu (*Bohnenkäse oder Bohnengefaultes*) and shoyu (*Soja oder Schoju*), with two long quotations. Soybeans are rich in protein and almost free of starch. They can be roasted to taste like nuts and used in baked goods.

Endnote No. 35 (p. 411) states that miso soup (*Misoschiru*) or shoyu soup (*Schio-ü-schiru*) are part of the typical Japanese breakfast. Miso is made from beans, barley, and salt; shoyu is made from beans, wheat, and salt. The soup typically contains small amounts of vegetables (such as varieties of potatoes), beans, cabbage and mushrooms, turnips or carrots, onions, etc. weighing a total of about 170 gm. The main dish at breakfast is rice (weighing about 470 gm). Also included are fish or an egg, salt-pickled vegetables, and 100 gm of tea.

Also discusses *Pueraria Thunbergiana* (kuzu, p. 87). Total references: 162. Albrecht Wernich lived 1843-1896. Address: Docent for Special Pathology and Therapy at Berlin University.

213. *Kogyo Tokei-hyo (Census of Manufacturers)*. 1878—. Serial/periodical. Tokyo: Japanese Ministry of International Trade and Industry (MITI), Research and Statistics Dept. (Tsusho Sangyo Daijin Kanbo Chôsa Tokei-bu). Annual. [Jap]

• **Summary:** Contains statistics concerning Japan's industries and commodities. For example, in the report for the year 1987 (published in June 1989) under miso we find "124111 Miso (Including powdered or spray-dried miso). Total production in Japan: 641,337 tonnes. Value in million yen: 138,960. ??" Similar figures are given for each of Japan's 47 prefectures, listed from north to south, starting with Hokkaido and ending with Okinawa. The four largest producing prefectures are Nagano 186,316 tonnes (29% of the total), Aichi 63,294 tonnes, and Shin (?) 34,282, and Aomori 32,145 tonnes.

Note: The powerful and influential publisher, MITI, is called Tsûsan-sho in Japanese. Address: Tokyo, Japan.

214. Warrington, Robert. 1879. Agricultural chemistry in Japan. *Chemical News (The)* 40(1039):195-96. Oct. 24.

• **Summary:** "In the International Exhibition, now being held at Sydney [Australia], a collection of soils, manures, and agricultural products is shown by the Imperial College of Agriculture in Tokio, Japan. Accompanying the collection is a descriptive catalogue, compiled by Mr. Kinch, the Professor of Chemistry at the College, in which a short account is given of the various products exhibited, with chemical analyses of the majority of them. The catalogue contains in all about 80 analyses of Japanese products. The

whole of this important work has been accomplished in the laboratory of the College, under the superintendence of Mr. Kinch, and is certainly highly creditable to the Institution.”

The section titled “Soy Bean (*Glycine [Soja] hispida*)” (p. 195) mentions miso, tofu, and shoyu. Address: M.R.C.S. Eng.

215. *Bulletin de la Societe d'Acclimatation*. 1879. IV. Bibliographie. II. Journaux et revues. 1879. 3e fascicule.—*Le Soja hispida* [IV. Bibliography. II. Journals and Revues. 1879. 3rd volume of *Le Soja hispida*] (Continued). 26:666-71. Nov. [Fre]

• **Summary:** Continued (p. 670.3): “One can read in the *Imperial Encyclopedia of Agriculture (Cheou-chi-thong-Khao)*, book/volume XXVII, folio 8, recto: ‘Yellow soybeans can be used to make tofu (*teou-fou*, a sort of fermented soybean paté consumed regularly by the lower classes). Oil is removed from the beans using a press; they are also used to make jiang (*tsiang*, a sort of sauce used as a seasoning). The *Treatise on Agriculture*, by Fan-Ching states: At the summer solstice, one plants soybeans (*dou*); they don’t require heavy labor. The flowers of the soybean don’t like to see the sun, otherwise the plants will become yellow and the roots will blacken’ (Mr. Stanislas Julien, member of the Institute, this *Bulletin*, 1855, p. 225).

“Soybean oil (*L’huile de Pois oléagineux*) is very similar to our edible oils; its odor and taste are agreeable. It is equally suited to combustion [burning in oil lamps]. Exposed to freezing cold, it thickens; atmospheric oxygen makes it rapidly turn to resin. It belongs, therefore, to the class of drying oils and can, according to this report, replace linseed oil in some of its applications. Soybeans contain 18% oil and, because of the quantity and quality of the oil they contain, should provide a new food and a useful product to the industrial arts (Letter from M.E. Frémy, this *Bulletin*, 1855, p. 382).

“At 3 degrees below zero, the plants are not stressed; at 4 degrees the leaves freeze and the pods are slightly injured. If one considers that Haricot beans freeze at zero degrees, one can consider that soybeans are suited to be cultivated in our climate.” There follows a detailed botanical description of the plant. “Each plant bears 80 to 100 pods. The seed yield is excellent: each plant produces on average 183 seeds which, freshly shelled, make a tenth of liter and weigh 58 gm. A liter of soybeans contains 4,000 seeds and weighs 750 gm.

“Independently of these oleaginous qualities, soybeans make a delicious vegetable. Cooking them is very easy: just toss the fresh green seeds into boiling water. The seed coat detaches itself from each seed and floats to the surface, where they are removed. After 30 minutes, the cooking is done and furnishes a delicate dish, recalling the taste of green peas, but less sweet (Note from Mr. Lachaume, this *Bulletin*, 1858, p. 131).

“Look again at a communication from Mr. Paul Champion on the production of tofu (*fromage de Pois*), in China and Japan (this *Bulletin*, 1866, p. 562), etc.

“Let us say again that in the meeting of the Central Society of Horticulture, on Nov. 13 of this year, Mr. Duchartre read a note on the relative richness of peas, haricot beans, dry beans (*Fèves*), lentils and soya (*Soja*) in nitrogenous materials (protein) and oil. He concluded that soya is the richest of all. Up until recently, dry beans (*Fèves*) have been considered the richest, containing 30.80% protein and 70% oil; however soya contains 35% protein and 73% oil” [sic, this percentage is much too high]. Address: France.

216. *Journal de la Societe Centrale d’Horticulture de France*. 1879. Procés-Verbaux: Séance du 13 Novembre 1879 [Verbal proceedings: Meeting of 13 Nov. 1879]. 1:685-88. Nov. Third Series. See p. 686-87. [3 ref. Fre]

• **Summary:** The meeting, presided over by Mr. Hardy, began at 2:00. The correspondence read by the secretary consisted of only one letter from Mr. Blavet, President of the Society of Horticulture at Etampes, to M. Laizier, president of the committee on kitchen-garden crops (*Culture potagère*); he reported on the chemical composition of soybean seeds (*graine du Soja hispida*).

With respect to Soya (*Soja*), Dr. Baillon gave a lecture (based on a note he wrote) in order to provide information about this plant in response requests, especially from Mr. Vavin as follows: He discussed Englebert Kaempfer’s book *Amoenitatum exoticæ* (1712) (about *Daidso* and *Mame* [soybeans], soy sauce, miso, koji, and saké), Linnaeus, Moench [1794], and Savi (1824).

“At the time of Jacquin [1781, 1786], the soybean was cultivated in Austria. Proposals were made to plant it on a large scale as a oil-yielding plant (*plante oléagineuse*). Since the start of this century, it has been grown in all [sic, many of] the botanical gardens, where it bore seeds very well.”

217. Kinch, Edward. 1879. Japan: A classified and descriptive catalogue of a collection of agricultural products exhibited in the Sydney international exhibition by the Imperial College of Agriculture, Tokio, Japan. Tokyo: Agricultural Bureau (Naimushô), Home Dept. 65 p. 20 cm. [Eng]

• **Summary:** Each item that was displayed is numbered. All chemical / nutritional analyses give percentage composition unless otherwise stated. The chapter on “Manures” begins (p. 4): “The principal manures used in this country are human excrements both solid and liquid, which are collected with the greatest care and applies to the land whilst in a more or less advanced state of decomposition. The excreta are often made into a compost with dried grass.

The section titled “vegetable manures” (p. 7-13) gives analyses of rape cake (*abura kasu*), malt dust (*ame kasu*), sesame cake (*goma kasu*), rice beer residues (*sake kasu*), soy residues (*shoyu kasu*; water 16.37%, ash 4.96%, organic matter 78.67%), rice cleanings (*nuka*), and barley bran (*fusuma*).

The chapter on “Foods” begins (p. 16): “By far the most important national food is rice, *Kome*; more than one half of the cultivated land of the Empire is devoted to paddy fields, *Ta*, and besides the rice grown on this irrigated land a considerable quantity is grown on the dry fields, *Katake*.” *Mochi-gome* or glutinous rice, is specially used for making the new years’ cakes, *Mochi*.

The many kinds of leguminous plants include: Peas, field and haricot beans, vetches, lupins; soy beans *Glycine (soja) hispida*, *O-mame* or *Daidzu*; fol. lanceolata (*Midzu-kugiri*); *Phaseolus radiatus*, *Adzuki* or *Shodzu*; *P. radiatus* v. *pendula*, *Tsura-adzuki*; *P. radiatus subtriloba*, *Bundo*; Horse gram, *Dolichos uniflorus*, *Sasagi*; Gram, *Dolichos umbellatus*, *Hata-sasagi*; Overlook pea, *Canavalia incurva*, *Nata-mame*; Ground nut, *Arachis hypogaea*, *Rakkasho* or *Tojin-mame*.

“Also should be mentioned the sesamum, *Goma*, the oil of which is extensively used in cooking; *Perilla ocymoides*, *Ye-goma*; and rape, *Brassica sinensis*, *Abura-na*, which is cultivated for its seed, the oil being used for burning.” Also list (with scientific and Japanese names, p. 17-18) the principal root crops, fruits, sea weed and lichens, fungi, and starch.

Next: Chemical analyses of rice, wheat, rye, “red bean—*Adzuki-Phaseolus radiatus* (large variety and small variety).”

Note 1. This is the earliest English-language document seen (March 2006) that uses the word *Shodzu* (or *shôdzu* or *shôzu* or *shodzu* or *shozu*) or the word “red” or the term “red bean” to refer to the azuki bean, or that gives its scientific name as *Phaseolus radiatus*, or that reports the existence of large and small varieties, or that uses the word *Bundo* to refer to a variety of azuki bean.

Then (p. 22-26): “44. Beans. *O-mame*, *Daidzu*. *Glycine (soja) hispida*. White round soy bean. Miso mame. Percentage composition (table): Water 11.32, albuminoids 37.75, fat 20.89, fibre 1.50, ash 3.86, starch and soluble cellulose 24.58. Total 100.00.

“This bean is met with in several varieties of different colour and size, but they differ little in composition. It is vegetable which approaches nearest in chemical composition to animal food (meat), containing as it does one fifth of its weight of fat and often two-fifths of nitrogenous matter. It is an extremely valuable adjunct to the food of a people who subsist so largely on a purely vegetable diet, of which the bulk is rice so rich in heat producers—starch, and poor in flesh formers—albuminoids.

“*Shoyu*, *Miso*, and *Tofu*, are made from these beans, and enter largely into the food of the nation.

“45. Miso. *Shiro-miso* or white miso. From Osaka. Percentage composition: Water 50.73, fibre 12.93, ash 6.58 (containing 5.4 per cent of common salt), sugar 17.54, albuminoids 5.64, soluble carbohydrates 6.58. Total 100.00. Soluble in water 35.88 per cent.

“46. Miso. *Aka-miso* or red miso. From Osaka. Percentage composition: Water 50.40, fibre 8.25, ash 12.50 (containing 12 per cent of common salt), sugar 0.61, albuminoids 10.08, soluble carbohydrates 18.16. Total 100.00. Soluble in water 34.71 per cent.” Note 2. This is the earliest English-language document seen (March 2009) that uses the term “*Shiro-miso*” to refer to white miso (and vice versa) or “*aka-miso*” to refer to red miso (and vice versa).

“In the preparation of *Miso* the beans are boiled, pounded in a mortar into a paste and mixed with fermenting rice, *Koji* (see sake) in various proportions, and with more or less salt, and the mixture is placed in tubs and left in a cool place for about a month. It will be seen that one variety, white miso, contains much sugar, derived from the *koji*, and little salt; whilst the other variety contains very little sugar and much more salt.

“47. Tofu. Percentage composition: Water 89.29, ash 0.48, fibre 1.01, nitrogenous substances 4.87, non-nitrogenous substances 4.35 (containing 3.32% fat). Total 100.00.

“This food is made by boiling the white soy beans, *Shiro-mame*, in water after they have been soaked, ground and strained through a sieve. The solution is filtered through cotton cloth and the residue pressed; the liquid, containing legumin in solution, is precipitated by the addition of the brine which runs off from sea salt during its deliquescence in the air. The precipitate constitutes *Tofu*.”

Note 3. This is the earliest English-language document seen (Oct. 2008) that uses the word “legumin” to refer to the water soluble protein in soybeans than can be precipitated by a coagulant to make tofu.

“48. Kori tofu. Percentage composition: Water 18.75, ash 1.60, nitrogenous substances 48.80, non-nitrogenous substances, chiefly fat 30.85. Total 100.00.

“Prepared from the above [tofu] by exposing it to the air during frost, until it freezes, and afterwards thawing in the sun, by which the greater quantity of the water is removed.

“49. Soy [sauce]. *Shoyu*. Specific gravity 1.1996. Grams per litre: Total solid residue 359.888, ash 195.168 (principally common salt), sugar 31.034, albuminoids 41.000, free acid expressed as acetic acid 6.200. Note 4. This is the earliest document seen (Jan. 2008) that uses the term “specific gravity” in connection with soyfoods—in this case soy sauce.

“Manufacture of *Shoyu*. *Shoyu* is made from the soy bean, *Glycine (soja) hispida* q.v. together with wheat, salt

and water. Equal parts of beans and wheat are used. A small part of the wheat is mixed with *Koji* (see sake) and allowed to ferment. The remainder is roasted and the beans are also roasted. The roasted beans and wheat are then mixed together with the fermenting wheat, placed in shallow wooden boxes, and kept for some days, at a fixed temperature, in a warm chamber with thick walls, until the whole mass is covered with fungus. It is very important that the temperature of this chamber should be kept at the proper point. By these processes, part of the starch of the wheat is converted into dextrin and sugar, and lactic acid and acetic acid are formed. It is then mixed with salt lye, the proportion used being about 4 *go* of salt to 12 *koku* of water to extract 1 *koku* of the fermented product. The mashings are removed to large vats and there kept for at least 20 months and generally for 3 or 5 years. The better qualities of *shoyu* are kept the longer times. It is found that the best soy is produced by mixing that kept for 5 years with that kept for 3 years. After it has been kept a sufficiently long time, it is strained through thick cotton bags and the residue pressed in the same manner as in *sake* pressing. Before filtering, honey is sometimes added in the proportion of 10 *kin* to 1 *koku* of *Moromi* or mixed soy, in order to give it a sweet taste. Occasionally a sweet sake, obtained by taking 1 *koku* of *koji* to 7 *to* of water and 1 *to* of steamed rice, mixing them together and steaming for two hours, is added instead of honey. The residue obtained on pressing *moromi* is again mixed with salt and water, in the proportion of 8 *to* of salt to 1 *koku* of water and again pressed, this yields and inferior *shoyu*. Sometimes water is added to this second residue and it is again pressed. The residue first obtained is sometimes used as food, and the last residue as manure. One *koku* of the mixture, *moromi*, produces 4 *kuwamme* of residue at the first filtration and about 3.5 *kuwamme* of residue at the second and third. The *shoyu*, after pressing, is allowed to settle for two days in large tanks, and then drawn off and again filtered. *Shoyu* is a very important condiment, it is mixed with a great many kinds of food and is produced and consumed in very large quantities.

“1000 *Go* = 100 *Sho* = 10 *To* = 1 *Koku* = 4.929 Bushels. 1 *Kin* = 1.325 lbs. 1 *Kuwamme* = 8.28 lbs. Note 5. This description of how *shoyu* is made contains several major errors.

Finally, there are chapters on alcoholic liquors (with emphasis on sake or “rice beer, sometimes called rice wine”), sweet liqueurs (*mirin*, *homeishiu*, *shiro-zake*), food adjuncts (incl. salt, vinegar, spices, herbs, and perhaps *shoyu*), edible sea weeds (20 varieties, with both Japanese and scientific names, and an analysis of each), tea, tobacco, fodder, animal foods, dye stuffs, oils and waxes, and starch (incl. *kudzu*, *Pueraria thunbergiana*).

Note 6. This is the earliest document seen (July 2008) concerning soybean products (tofu, dried-frozen tofu, and *shoyu*) in connection with (but not yet in) Australia.

Note 7. This is the earliest English-language document seen (Aug. 2003) that uses the word “nitrogen” in connection with soy—and with protein.

Note 8. This is the earliest document seen (July 2008) concerning soybeans / soya in connection with (but not yet in) Australia, or Oceania.

Note 9. This is the earliest document seen (July 2008) by Edward Kinch (1848-1920) that mentions soy. Kinch was born on 18 Aug. 1848 at Henley-on-Thames, Oxfordshire, England, the 3rd child of Charles Kinch and Emma Plumbe Kinch. He was baptised there on 12 Dec. 1845 in St. Mary’s church. Kinch was a chemist, specializing in agricultural chemistry. In 1869 he became assistant professor at the Royal Agricultural College (RAC) in Cirencester (in southwestern England). From 1876 to 1881 he was a professor of agricultural chemistry at the Imperial College of Agriculture in Tokyo, Japan. Then from 1881 to 1915 he was professor of chemistry at the RAC in Cirencester. He married Edith Shirley Huntington in 1889 in Pembroke district, Pembroke, Wales. They had two children, William (born ca. 1886) and Dora Ann (born ca. 1893). He died on 6 Aug. 1920 in Haselmere, Surrey, England.

Note 10. This catalog was displayed at the Sydney International Exhibition, held in Australia in 1879. The Sydney International Exhibition was Australia’s first international exhibition, a showcase of invention and industry from around the world. An imposing Garden Palace was constructed in the Botanic Gardens as a home for the exhibition. Address: F.I.C., F.C.S., &c., Prof. of Chemistry. Imperial College of Agriculture, Komaba, Tokio, Japan.

218. Pickering, Charles. 1879. Chronological history of plants: Man’s record of his own existence illustrated through their names, uses, and companionship. Boston, Massachusetts: Little, Brown, and Co. 1222 p. See p. 763. [10 ref]

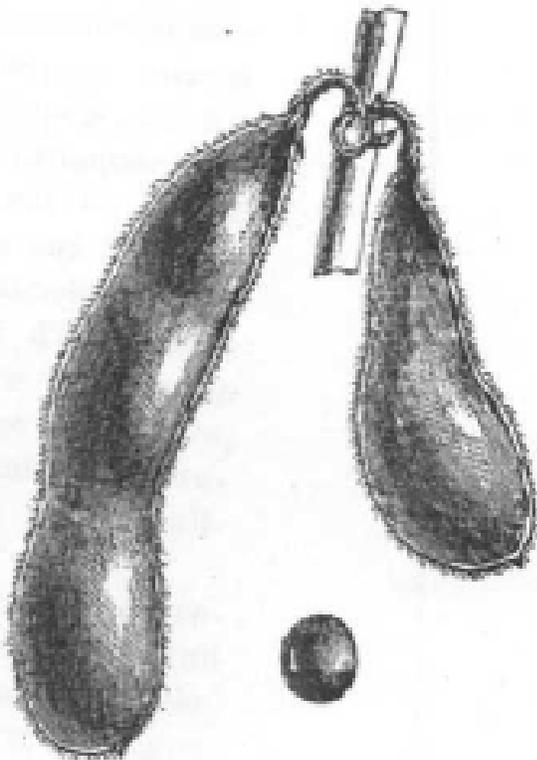
• **Summary:** In the section titled “Chronological arrangement of accompanying animals and plants,” at the year 1296 A.D. we read: “*Soja hispida* of Japan. Enumerated by the Chinese official 141 as unknown in Cambodia:—‘miso’ beans are mentioned in 1444 in the annals of the Japanese emperors (transl. Tits. [Titsingh / Titsing] and Klaproth); were observed by Kaempfer v. 837, and Thunberg, under frequent cultivation near Nagasaki and elsewhere; are known to be made into the condiment called ‘soia’ (Pers.) in English *soy*; also into a white porridge [tofu] in general use among the Chinese and called by them ‘teu hu’ or ‘tauhu’ (Loureiro). Westward, *S. hispida* was observed by Mason in Burmah; by Roxburgh, and Graham, in the gardens of Hindustan. Transported to Europe, it is described by Jacquin rar pl. 145” [*Icones plantarum rariorum*].

Note: This is the earliest document seen (Feb. 2004) concerning soybeans in Burma (later renamed Myanmar), or the cultivation of soybeans in Burma. This document contains the earliest date seen for soybeans in Burma, or the cultivation of soybeans in Burma (1879). The source of these soybeans is unknown. However, as of Nov. 1994 we have been unable to find verification for Pickering's statement about Mason in the writings of Francis Mason. Finding the earlier citation by Mason may allow us to push back this date.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word "tauhu" to refer to Chinese-style tofu. Address: M.D., Boston, Massachusetts.

219. Carrière, E.-A. 1880. Le soja hispida [The soybean (*Soja hispida*)]. *Journal d'Agriculture Pratique* 44(14):479-83. April 1. [Fre]

• **Summary:** Page 480 notes that in 1874 the *Jardin d'Acclimatation* in France received soybeans from Mexico and distributed them to various societies. Illustrations show: (1) A plant, pod, and seed of *Pois oléagineux de la Chine* (soybean; Fig. 35, by L. Rouyer). (2) A plant and pods of *Soja hispida* (soybean) with many pods clustered around the stem, and a cluster of 7 pods to the upper left of the plant (Fig. 36, by Thiebault). (3) A cluster of three leaves of *Soja hispida d'Etampes* one-fourth its natural size (Fig. 37).



(4) Two large pods and one seed of *Soja hispida d'Etampes* (full size; Fig. 38).

(5) A dry plant of *Soja hispida d'Etampes* with pods on the stems, one-ninth its natural size (Fig. 39).

A table (p. 482) compares the composition of different seeds as analyzed by various chemists. The soybean was analyzed by Levallois of *l'Institut agronomique*.

Pages 482-83: A quotation from *Amoenitatum exoticarum* by Engelbert Kaempfer (1712) mentions miso, soy sauce, koji, and sake.

Page 483 states: "Today the soybean is cultivated in Hungary and probably in Austria. One farmer, Mr. Jules-Robert of Seelowitz, in Moravia [a separate crownland of Austria, but after 1945 part of Czechoslovakia], cultivates it on a very large scale (30 hectares or more each year). He lets some of the plants ripen / mature for harvest as seeds (soybeans); he cuts the others before they mature and mixes them with corn (*maïs*), then ensiles the mixture in a semi-dry state." Note 1. This is the earliest document seen (June 2008) that mentions silage or ensilage in connection with soybeans. It is also the earliest document seen (April 2003) that mentions the use of corn and soybeans together to make silage. All of the early research on the use of soybeans in silage was done in France.

The last paragraph states: "Soybean seeds can be ordered from MM. Vilmorin et Cie, 4, quai de la Mégisserie, Paris."

Note 2. Note 2. This document contains the earliest date seen for soybeans in Mexico (1874). It is not clear whether or not these soybeans were cultivated in Mexico (they may well have been) or where they came from (they may well have come from China on a Manila galleon as part of the China trade).

Note 3. Theodore Hymowitz, Prof. of Plant Genetics, Univ. of Illinois, referring to this reference and to the reference from the year 1651 by Francisco Hernandez mentioning the mung bean, writes (8 May 1989): "The existence of soybeans or mungbeans or even the knowledge of these crops in Mexico at that time is of course no surprise to me. From about 1565 and for the next 250 years ships left Acapulco for Manila (Philippines) and returned. All sorts of goods were moved West to the East and vice versa across the Pacific Ocean. Hernán Cortés [Cortes] (1485-1547, the Spanish explorer and conqueror of the Aztec empire in Mexico) started a plant introduction garden in Mexico City in 1621 and requested that seed be sent to him." Hymowitz added by phone (27 May 1989): "There is no log of what was grown in that garden, but there is the account of Cortés' friend, which is at the University of Illinois rare book room. It is in old Spanish, handwritten."

Note 4. The illustrations in this article were reproduced in many later books and articles by other authors. Address: France.

220. Carrière, E.-A. 1880. Soja hispida [The soybean (*Soja hispida*)]. *Revue Horticole: Journal d'Horticulture Pratique (Paris)* 52:153-57. April 16. Excerpted from *Journal d'Agriculture Pratique*, 1 April 1880. [2 ref. Fre]

• **Summary:** This is a reprint of an article by the same author first published on 1 April 1880 in *Journal d'Agriculture Pratique* 44(14):479-83. All the five illustrations (line drawings) and one table in the original article are reproduced here. Address: France.

221. Greev, Edward. 1880. What the Japanese eat. *Frank Leslie's Popular Monthly (The American Magazine)* 10(2):164-74. Aug.

• **Summary:** A very interesting article with many large illustrations. On page 171 we read: "We quitted the dealer in vermicelli, etc., and entered a shop devoted to the manufacture of *tofu* (bean-curd, or cheese), a national dish. It is semi-gelatinous, white, delicious and wholesome. Yuba is another sort of paste food, made from white beans. Misso [miso] is a white bean paste, mixed with fermented rice and salt. It requires a Japanese-trained stomach to digest this.

Note: This is the earliest English-language document seen (March 2009) that uses the term "bean paste" (not preceded by the word "soy" or "soya") to refer to miso.

"Soyu [shoyu] (soy), a sauce made with boiled beans and wheat, was also sold at this establishment. The mess is fermented until it is a mass of fungi, then cooled and salted with hot lye. It is next transferred to enormous vats, in which it is kept for several years, then pressed in bags made of thick cotton cloth. The brown juice that runs from the horrible mass is soyu, and is not only palatable, but wholesome. The Japanese flavor dishes with it, and use it as we do vinegar, for pickling. It tastes like mushroom catsup.

"I had seen the process of soy-making, therefore declined to visit one of those establishments; whereupon my guide took me to a candy factory. As a nation, the Japanese are not large consumers of sugar."

Mentions many other Japanese foods and beverages including saké (rice-wine or rice-beer); he describes how it is made. Illustrations: (1) Seven Japanese men and women seated on tatami mats around a low table having a meal; in the background is a large painted wall. (2) A Japanese butcher's shop, as seen from outside. (3) A salt vender and house servant, carry goods at both ends of a shoulder pole. (4) The Pelor japonicum—a curious Japanese fish. (5) A dealer in dried fish with a man carrying goods on a shoulder pole. (6) Japanese entertaining European guests, seated in chairs at a raised table. (7) A rice warehouse near Tokyo. (8) A saké shop at New Year's with a large crowd of men. (9) A Japanese tea house.

222. Paillieux, Auguste. 1880. Le soya, sa composition chimique, ses variétés, sa culture et ses usages [The soybean, its chemical composition, varieties, culture, and

uses]. *Bulletin de la Societe d'Acclimatation* 27:414-71. Sept.; 27:538-96. Oct. 28 cm. [73 ref. Fre]

• **Summary:** One of the most important and original of the early publications on soya in Europe. Its in-text bibliography on soya was the largest of any published up to that time.

Contents: Part I: Introduction and extracts on soybeans and soyfoods from 30 articles published previously in the *Bulletin of the Society for Acclimatization* from 1855 to 1880 (pages 414-430). 1. Soybean botany (p. 430-31). 2. The soybean in Japan (p. 431-42): Engelbert Kaempfer and his writings on miso and shoyu, information on soya from a document titled *Japan at the World Exposition of 1878 (Le Japon á l'Exposition universelle de 1878)*, written in French by a Japanese, p. 29-33), recipe for making shoyu in France, tofu. 3. Soya in Cochinchine (French Indochina, p. 442-46): Black soybeans. 4. Soya in China (p. 446-51): Soy oil (*Huile de Soya*), tofu (*le fromage de soya, teou-fou*), soy sauce (*tsiang-yeou*; In London, England, it is sold under the name of "India Soy" at Cross & Blackwell, Soho-Square {p. 451}). 5. Soya in Austria-Hungary (p. 452-71): Starting with soybeans at the World Exposition of Vienna in 1873, includes a long, in-depth discussion (with many excerpts) of Prof. F. Haberlandt's book *Le Soja*, published in Vienna in 1878.

Tables in Part I show: (1) The chemical composition (in both their normal and dry states) of Chinese soybeans (*pois de Chine*), tofu (*fromage de pois*), and tofu curds (p. 427). (2) The yield of tofu. 120 gm of soybeans yields 184 gm of tofu (p. 427). (3) The weight and nitrogen content of the different components when tofu is made from soybeans (p. 428). (4) The Japanese names of 23 soybean (*mame*) varieties and a very brief description of their characteristics (p. 435-36; e.g., 1. *Go-guwatsu no mame* {5th month bean}. 2. *Use mame [sic, Wase mame]* {early}. 3. *Nakate mame* {half season}. 3a. *Okute mame* {late}. 4. *Maru mame* {round}. 5. *Shiro teppo mame* {white, like a pistol bullet} 6. *Kuro mame* {black}. 7. *Kuro teppo mame* {black, like a pistol bullet} 8. *Koishi mame* {small stone}. 9. *Awo mame* {Ao, green}. 10. *Kage mame* {shade, shadow}. 11-15. *Aka mame* {red; 1 of same species, two of different species}. 16-18. *Tsya mame* {Cha, tea colored}. 19. *Kuro Kura Kake mame* {black saddled}. 20. *Aka Kura Kake mame* {red saddled}. 21-23. *Fu iri mame* {striped, variegated, mottled; see *Uzura mame* = speckled like quail eggs}). This nomenclature was taken from a Japanese work titled: "Explanation, with figures, of trees and plants recently determined / identified."

(5) The romanized Chinese names of six types of soybeans and a French translation of each (e.g., *Houang-teou = Soya jaune*) (p. 447). (6) Two analyses of soybean seeds, reprinted from *Chemischer Ackersmann*, 1872 (p. 458). (7) The chemical composition of three soybean varieties, including Yellow of Mongolia, Yellow of China,

and Reddish-Brown of China; the composition of the original seeds and the first generation seed is given for each type (p. 460-61). (8) The chemical composition of reddish-brown, yellow, and black varieties of soybeans (p. 469-70; data from M. Schroeder, Mach, and Caplan, published by F. Haberlandt). (9) Weight of 1,000 seeds for four generations grown out in Vienna. Original seeds: 81.5 to 105 gm. First generation: 110.5 to 154.5 gm. Second generation: 141.8 to 163.6 gm. Third generation: 116.0 to 151.0 gm.

Contents (continued), Part II. 6. The Soybean, by Count Heinrich Attems (p. 538-60): Soybean culture and harvest, uses, and preparation of whole soybeans. Practical soybean culture trials on a grand scale, in the domain of the archduke Albert, an extract from a booklet by Edmond de Blaskovics titled "The Soybean, Its Culture, Use, and Value as Forage" (Vienna, 1880). Excerpts of six articles on soya from the *Wiener Landwirthschaftliche Zeitung (Viennese Agricultural Journal)* (Jan. 1879 to June 1880) (p. 548-54). Excerpts of ten articles on soya from the *Oesterreichisches Landwirthschaftliches Wochenblatt (Austrian Agricultural Weekly)* (March 1879 to Feb. 1880) (p. 554-59).

7. The soybean in France (p. 561-76): History (starting with Buffon, who became director of the *Jardin des Plantes* [Royal Garden, also called *Jardin du Roi*] in 1739), varieties grown, cultivation, utilization (mainly as forage plant for livestock and as an oilseed for oil and meal), accessory uses (miso, Japanese-style soy sauce [*shoyu*], Chinese-style soy sauce [*tsiang-yeou*], Japanese-style tofu [*tô-fu*], Chinese-style tofu [*téou-fou*], soy nuggets [*téou-che*], and soy coffee [*café de Soja*], white fermented tofu [*fromage blanc*], red fermented tofu [*fromage rouge*], green vegetable soybeans [*des graines fraîches, écossées encores vertes, comme le Haricot flageolet*], whole dry soybeans [*les graines sèches comme le Haricot blanc ordinaire*]).

8. Conclusion and tables showing French analyses of soybeans (p. 576-78). Appendixes (p. 579-96): Summaries of letters to the Society describing 27 cultural experiments with soybeans conducted during late 1880 at various locations in France, Switzerland and Algeria. (Note: Though the publication date of this appendix is given as Oct. 1880, some of the letters are dated as late as 21 Nov. 1880). Reprint of a 2-page letter from Eugene Simon, former French consul in China, on soybean farming in China (p. 591-93). Reprint of a description by Eugene Simon, based on the description of a Chinese, of how tofu is made in China (p. 593-94). A French translation of a 1781 article by Isaac Titsingh on preparation of soy sauce in Indonesia (p. 594-95). And some information about soybeans from the ancient Chinese herbal *Pên Ts'ao Kang Mu* (p. 595). Reprints of 2 letters from Eugene Simon in China, on soya and tofu in China. French translation of a 1781 article by Isaac Titsingh on preparation of soy sauce.

Note 1. We find it surprising that this superb work contains no illustrations of a soybean plant, or of any part of

the plant, or of any foods made from soybeans; the only illustration (p. 569) is a cross section of an empty pit into which one could put a mixed silage that contained 20% soybean plants.

Note 2. This is the earliest French-language document seen (Dec. 1999) that uses the term *Huile de Soya* to refer to soybean oil.

Note 3. This is the earliest document seen (March 2001) that has a bibliography of more than 50 references concerning soybeans.

Note 4. This is the earliest European-language document seen (Sept. 2004) that mentions the Japanese soybean types *Nakata-mame* or *Okute mame*. Address: France.

223. Kinch, Edward. 1880. Contributions to the agricultural chemistry of Japan. *Transactions of the Asiatic Society of Japan* 8(Part 3):369-415. Oct. See p. 392-93, 398-401, 413-15. Reprinted in March 1907 as a monograph. [29 ref]

• **Summary:** "Of vegetable manure the principal are seaweed, the residues from different manufactures, e.g. rape cake, sesamum cake, cotton cake and other oil residues, as from camellia seeds, the residues from the manufacture of *shôyu*, *ame* [rice syrup], *sake*, *shôchu*, indigo etc." (p. 392). [Note that soybean cake is not mentioned].

"The oil cakes, *ame kasu* (malt dust, the residue from the manufacture of *ame* from rice, millet and malt of wheat or barley) and *shoyu kasu* [The residue from the manufacture of *shoyu*] are the most valuable. These manures should not be applied in quantity at the seed time in an unmixed state, owing to their fermenting and also attracting and harbouring insects, which attack the seeds and young plants." Rape cake (*Abura kasu*) and Sesamum cake (*Goma kasu*) are also mentioned.

There are original analyses of 6 samples of "Soy residues, *Shôyu kasu* (p. 393). Residue from the manufacture of *Shôyu* from beans and wheat." These vary over an extremely wide range. Nitrogen content ranges from 1.27% to 5.20%, and ash is 0.57% to 11.53%.

"Soy bean, sometimes called Japan pea, *Glycine hispida* (Moench) also known as *Soja hispida*: of this many varieties of different colour and size, etc. are met with, but as far as is known, they differ but little in composition. They are known collectively as *Daidzu* or *O-mame*; a common white round variety is known as *Miso-mame* and *Shiro-mame*; other names of varieties are *Awo-mame*, *Kuro-mame*, *Ki-mame*, *Ichiya-mame*, *Kurakake-mame* and *Korinza* (p. 398).

Note 1. This is the earliest English-language document seen (March 2008) which states clearly that the present scientific name of the Japan pea is *Glycine hispida* (Moench)—that is, the soybean. Actually, however, the correct scientific name since 1873 had been *Glycine hispida* (Maxim.)

“This bean approaches more nearly in its proximate chemical composition to animal food than any other vegetable known. It contains about one-fifth of its weight of fat and nearly two-fifths of nitrogenous matter. It is extensively cultivated in the north of China and also grows in the Himalayas. In China it is compressed for the sake of its oil, and the residual cake is used for food and also extensively as a manure. In Japan it is used in the preparation of *Shōyu*, *Tōfu*, *Miso* and also of *Yuba*, and in these various forms enters to a considerable extent into the food of the nation, to which it is a most valuable contribution, supplying as it does the alimentary principles—albuminoids and fat—in which the staple food, rice, is deficient: it also contains a much larger percentage of the necessary mineral matters than does rice. Of late years this bean has been grown experimentally in different parts of Germany, with success. The haulm and leaves which furnish a valuable fodder, and a variety is cultivated specially for that purpose and known as *Kari-mame*.

“The composition of a sample of the white round variety known as *Miso-mame* was found to be: Water 11.32%, ash 3.86%, fat 20.89%, albuminoids 37.75%, fibre 2.00%, starch etc. 24.08%. Total: 100%” (p. 398). Note 2. This and each of the following nutritional analyses appear to be original, not cited from earlier sources.

A table then contains an analysis of each of the following 4 products: Shiro-miso from Osaka, aka-miso from Osaka, to-fu [tofu], and kori to-fu [tofu]. The composition of aka-miso was found to be: Water 50.40%, ash 12.50% (incl. 11.00% common salt), sugar 0.61%, nitrogenous matter 10.08%, fibre 8.25%, soluble carbohydrates 18.16%. Total: 100%.

The composition of to-fu was found to be: Water 89.29%, ash 0.48%, fat 3.32%, nitrogenous matter 4.87%, fibre -, soluble carbohydrates 2.04%. Total: 100%.

The composition of kori to-fu was found to be: Water 18.75%, ash 1.60%, fat 28.80%, nitrogenous matter 48.80%, fibre -, soluble carbohydrates 2.05%. Total: 100%.

There follows a 3-page discussion of the foods that can be made the soy bean (miso, *kōji*, *tōfu*, *kōri-dōfu*, and *shōyu* or soy), and a description of how each is made. “*Miso* is made by mixing the boiled beans with *Kōji* (rice ferment used in *sake* brewing) in various proportions, and with more or less salt, and keeping the mixture in tubs in a cool place for about a month. It will be noticed [from the table above] that one variety contains much sugar, derived from the *Kōji*, and little salt, and the other much salt and little sugar.

“*Tōfu* is made by pounding the soy beans after soaking in water, then straining through a sieve and boiling in water. The solution is filtered through cotton cloth and the residue pressed; the strained liquor, containing vegetable casein or legumin, is precipitated by brine. *Nigari*, formed by the deliquescence of common salt. The precipitate pressed and cut into cakes is *tōfu*.”

Note 3. This is one of the earliest English-language documents seen (Jan. 2004) that uses the word “tofu.” This is *the* earliest document seen (Jan. 2004) that uses the word “cakes” in connection with tofu.

Note 4. This is the earliest English-language document seen (Oct. 2008) that mentions “vegetable casein” in connection with soybeans or tofu, or that equates “vegetable casein” with “legumin” (the word Kinch used in 1979), the water soluble protein in soybeans that can be precipitated to make tofu.

“*Kōri-dōfu* is prepared from the above by freezing it and afterwards exposing to the sun, when, in the process of thawing, the greater quantity of the water is removed, leaving a horny spongy residue.

Note 5. This is the earliest English-language document seen (Feb. 2004) that mentions dried-frozen tofu, which it calls “kori-tofu.”

“An example of *shōyu* or soy was found to have a specific gravity of 1.199 and to contain per litre: Total solid residue 359.88 grms., ash 195.16 grms., sugar 31.03 grms., nitrogenous matters 41.00 grms., free acid, expressed as acetic acid 6.20 grms. The ash is chiefly common salt, but contains a quantity of phosphates derived from the mineral matter of the beans and kept in solution by the acetic acid formed.”

“The [shoyu] mashings are removed to large vats and there kept for many months, usually twenty, and frequently for 3 or 5 years. The better qualities of *shoyu* are kept the longer times. It is found that the best soy is produced by mixing that kept for five years with that kept for three years. After it has been kept a sufficiently long time, it is strained through thick cotton bags and the residue pressed. Before filtering, honey is sometimes added in the proportion of 10 *kin* to 1 *koku* of *moromi* or crude soy, in order to give it a sweet taste. Occasionally a sweet sake, *ama-sake*, prepared by taking, 1 *koku* of *koji* to 7 *to* of water and 1 *to* of steamed rice, mixing them together and steaming for two hours is added instead of honey. The residue obtained on pressing *moromi* is usually again mixed with salt and water, and pressed; this yields an inferior *shoyu*. Sometimes water is added to this second residue and it is again pressed. The residue first obtained is sometimes used as food and the last residue as manure.

“The *Shoyu* after straining is allow[ed] to settle for two days in large tanks, then drawn off and filtered; before sale it is heated to incipient ebullition, otherwise it quickly goes bad.

“The quantity of nitrogenous matter in solution in *shoyu* appears to increase with the length of time elapsing before filtering the *moromi*.”

Note 6. *Webster's Dictionary* defines ebullition as “the act, process, or state of boiling or bubbling up.”

Also contains detailed information on and chemical composition of adzuki beans or *shōdzū* (*Phaseolus*

radiatus), daikon, sea-weeds (incl. three types of Asakusa nori (*Porphyra vulgaris*), kobu (*Laminaria saccharina*) [konbu, which Thunberg and Kaempfer also discussed], wakame, arame or kokusai, awo-nori or ohashi-nori, hijiki, Irish moss or carrageen, tokoroten-gusa or agar agar, kanten or tokoroten, and funori), and sake.

At the end of the article is the summary of a discussion. Professor Atkinson made some remarks about shōyu. He said that Mr. Isono, a graduate of the University of Tōkiyō, had made analyses of *shōyu moromi* at various periods (after 3, 10, and 20 months), which are printed in full, together with an analysis of Kikkoman shoyu. "It was interesting to observe the disappearance of the glucose, and the gradual increase of the soluble nitrogen from the first sample to the last. The greatest change took place between the third and the tenth months. but, after the removal of the greater part of the glucose and dextrin, converted into alcohol and lost by evaporation, very little alteration occurred, except in the color of the liquid, which became darker."

Note 7. This is one of the earliest English-language documents seen (May 1999) that contains an accurate description of miso; it also contains very early information on the composition of different types of miso.

Note 8. This is the earliest English-language document seen (Dec. 2000) that uses the term "chemical composition" in connection with the soy bean.

Note 9. This is the earliest English-language document seen (Nov. 2003) that uses the term "sesamum cake" to refer to sesame cake.

Note 10. This is the earliest English-language document seen (April 2001) that uses the term "shōyu" to refer to soy sauce.

Note 11. This is the earliest English-language document seen (July 2001) that contains the word "fibre" in connection with soy beans. The fibre content of one variety of soy bean and one miso variety are given.

Note 12. This is the earliest English-language document seen (July 2003) that uses the Japanese word "Goma" to refer to "sesame."

Note 13. This is the earliest English-language document seen (Nov. 2005) that contains the term "cotton cake."

Note 14. This is the earliest English-language document seen (Sep. 2008) that contains the word "Kikkoman." Address: Prof. of Chemistry, Imperial College of Agriculture, Komaba, Tōkiyō.

224. Mene, Édouard. 1880. Des productions végétales du Japon [The vegetable products of Japan]. *Bulletin de la Societe d'Acclimatation* 27:644-66. Nov. [3 soy ref. Fre]

• **Summary:** This is part of a longer article, published in several issues, which is an excellent review of earlier publications and work. This part begins with a section on legumes. Among the legumes discussed are *Vicia Faba*

(*sora mame*, *otafuku mame*, *okakura mame*), *Dolichos unguiculatus* (*sasaghe* [*sasage*, present name: *Vigna unguiculata* (L.) Walp. subsp. *unguiculata*], incl. *Jin-roku Sasaghe*, *Yuhuté Sasaghe*, *Heritori-yu-roku-Sasaghe*), *Canavalia* (*nata-mame* = *C. incurva* [*sword bean*], *shiro-nata mame* = *C. lineata*), *Haricot* (*Phaseolus vulgaris*, incl. *Ingen mame* and *azuki* [*Phaseolus radiatus* var. *subtrilobata*]), sesame, etc. The author saw samples on display at the Japanese Ministry of Agriculture and at the Exposition at Champ-de-Mars in France.

"Soy sauce (*Le Shoyu*) (p. 648-49): This condiment, so appreciated by the Japanese, had samples displayed is the class of fermented beverages. It is often made with wheat flour and beans (*haricots*), but more often with boiled soybeans (*pois*).

"Chinese *Soye* or *Soya* is the same condiment, but more especially made with red beans (*haricots rouges*). Note: Clearly the author did not realize that soy sauce is made from soybeans (not from haricot beans or peas, nor from azuki beans).

"In Canton, it is made in the following way: the red beans are cooked in water for one hour; thrown in a sieve and drained; next the beans are sprinkled with wheat flour and carefully spread out on a wood plank that is put in a warm and humid place that favors the development of considerable mold; after four or five days the mold is taken off and the beans, after having been dried in the sun for 24 or 48 hours, are washed in cold water; salt and water are added, and the mixture is exposed to the sun for two weeks. It is then boiled for half an hour, adding for flavor a bit of star anise, regular anise, and orange peel; the mixture is then filtered through a basket and finally bottled as *Soya*."

There follows a short section titled "Peas" (*Pois*, *Pisum sativum*), including *Endo mame*. Next comes a detailed but somewhat confused discussion of soybeans (*Pois oléagineux*, *Soja hispida*) and a listing (often repetitive) of many different types and colors, as follows: "There was also a variety of soybeans (*Pois oléagineux*, *Soja hispida*), an early soybean (*mamé*), one with large hanging pods covered with red hairs, and one with large, yellowish-white seeds.

"The principal varieties of *Soja* and *Soja hispida* indicated in the watercolors of the Tokyo Bureau of agriculture were: 1. *Soja* with white flowers, a yellowish-white bean of medium size with white pods. 2. Early green *Soja*, a large yellowish-white bean with large pods covered with red hairs. 3. *Soja blanc*, with large yellowish-white seeds. 4. *Grand Soja blanc*, a large, yellowish-white bean with rather long greenish pods. 5. Green *Soja*, a yellowish-white bean of medium size with little green pods and the stem scattered with brown hairs. 6. *Kinoshita-mame*, a small yellow bean with little hairy pods. 7. Red *Soja*, a red bean of medium size with green, velvety leaves and red flowers. 8. Black *Soja*, a black medium-sized bean. 9. *Kouro-hiro mame*, a large black oval bean [*kouro* = *kuro* = black].

There are also varieties called: 10. *Awo-mame*, a large, greenish-white bean [*awo* = *ao* = green]. 11. *Shiro-mame*, *Kuro-mame*, *Kuro-kake mame*, *Kinname* (*Glycine soja*), *Kouringa*, and *Ichia-mame*.

“In the collection of beans at the Exposition of Champ de Mars the following soybeans were found: 12. *Daizu* (*Soja hispida*), a round yellowish bean of medium size. 13. *Shiro-daizu*, a large yellowish bean [*shiro* = white]. 14. *Oshiro-daizu*, a very large yellowish bean, twice the size of *Shiro-daizu*. 15. *Akayendo*, a medium-sized yellowish bean. 16. *Awo-mame*, a large, greenish-white bean (variety of *Glycine*). 17. *Aokuro-daizu*, a large greenish bean speckled with black. 18. *Thya-iro-mame*, a large, reddish-brown bean (variety of *Glycine*) [*Thya-iro* = *cha-iro* = brown]. 19. *Shiro-mame*, a white bean speckled with grey (variety of *Glycine*). 20. *Aka-daizu*, a large red bean [*aka* = red]... 21. *Kouro-daizu*, a large black bean.”

Near the end of this subsection we read (p. 651): “In China, an oil is extracted (*on extrait*) from soybeans (*pois oléagineux*, literally ‘oil peas’); it is used for both cooking and illumination. The green or black peas are often used to color rice wine. Mixed with beans (*haricots*) and wheat, they form the base for the manufacture of soy sauce and of tofu (this latter condiment is composed of two species of boiled beans). With soybean seeds (*Avec les graines de Soja*) the Japanese also prepare a sort of pap (*bouillie*) which for them takes the place of butter and which they call *Miso*. The leaves and branches of the soybean serve to nourish goats and sheep.” Address: France.

225. Bishop, Isabella Lucy (Bird). 1880. Unbeaten tracks in Japan: An account of travels on horseback in the interior, including visits to the aborigines of Yezo [Hokkaido] and the shrines of Nikkô and Isé, by Isabella L. Bird. 2 vols. New York, NY: G.P. Putnam’s Sons. See vol. I, p. 232, 237-38.

• **Summary:** The section titled “Notes on food and cookery” (p. 232-40) states: “Some fish are fried in the oil of the *Sesamum Orientale*, which produces an odour which makes one fly from its proximity. Eels and other dainties are served with soy (*shô-yu*), the great Japanese sauce, of a dark brown colour, made from fermented wheat and beans with salt and vinegar [sic], and with a dash of *saké* added to give it a higher flavour” (p. 232).

Buddhist teachings on the sacredness of life have, in some parts of Japan, been effaced by contact with foreigners. There some people eat wild birds and fowl. “Seaweed is a common article of diet and is dried and carried everywhere into the interior. I have scarcely seen a coolie make a meal of which it was not a part, either boiled, fried, pickled, raw, or in soup” (p. 234). *Brinjal* or egg-plant are among the many vegetables pickled. Confections consist of sugar-coated [azuki] beans, and *yokan*—made from

seaweed. Mochi is a small round cake of unbaked rice dough.

“The common people are also fond of ‘a pot-boil of birds’ in which a little soy and *mirinshu* are added to the water” (p. 237).

“The chief kinds of soup used by the middle classes are bean soup [miso soup], egg soup, and clear soup. The latter is of two kinds, one water and salt, the other water and soy” [sauce]. Among the lower classes there are many kinds, most of which taste like dirty water with a pinch of salt, and contain cubes of bean curd, strips of dried fish, cuttlefish, etc... Carp is used with bean soup only...” (p. 237-38).

In formal entertainments, the highest of the three classes is *san no zen* in which three small tables of eatables are provided to each guest. The first table includes rice, and “bean soup with carp.” Each table contains from 8 to 12 bowls or dishes (p. 238).

Note 1. The author, Mr. J.F. Bishop, lived 1831-1904.

Note 2. Yezo (also spelled Yezzo, Yeso) refers to Hokkaido, Japan’s northernmost main island. Address: Author [England].

226. Wein, Ernst. 1881. Die Sojabohne als Feldfrucht [The soybean as a crop]. *Journal fuer Landwirtschaft* 29:563-613. Supplement (*Ergänzungsheft*). A 50-page supplement at the end of volume 29. Apparently also published as a monograph in 1887 in Berlin. [7 ref. Ger]

• **Summary:** This work, which draws heavily on the research of Prof. Friedrich Haberlandt, contains practical instructions for the farmer who wants to grow soybeans and offers a compilation of current research findings.

Contents: 1. Characteristics of the soybean (*Soja*) and its varieties (p. 3-5). 2. General suggestions for the cultivation, growth, care, harvest etc. of the soybeans (*Sojabohnen*) (p. 5-9). Tables show (for yellow soybeans): Emergence of 100 soybeans at various dates in May and June based on depth of planting (p. 7). Depth of planting, weight of the seeds of 100 plants, weight of the straw of 100 plants, and weight of 100 seeds (p. 7).

3. Chemical composition of the soybean plant. Tables give the composition, including maximum and minimum values, of the following varieties, based in part on earlier published sources: (1) *Soja hispida tumida*, Var. *pallida*, yellow soybean (16 sources). (2) *Soja hispida tumida*, Var. *castanea*, brown soybean (8 sources). (3) *Soja hispida tumida*, Var. *atrosperma*, black round soybean (2 sources). (4) *Soja hispida platycarpa*, Var. *melanosperma*, black oblong soybean (2 sources). Also: (5) Composition of five legumes: peas, beans, lupine, yellow soybean, brown soybean. (6) Composition of straw (5 sources, incl. Schwachöfer of Vienna, Caplan of Vienna, Weiske of Proskau). (7) Composition of soybean hulls (*Hülsen*) (4 sources). (8) Comparison of the composition of soybean hulls and straw with the composition of wheat hay, pea

straw, bean straw, and lupine straw based on data from E. Wolff's tables. (9) Composition of the ash of soybean straw based on data from Schwachöfer of Vienna.

4. What yields can be expected from the soybean and which varieties (yellow, brown, or black) are suited to cultivation? Weight of 100 seeds (those planted and those harvested): *Soja pallida* (15.37 gm / 16.39 gm). *Soja castanea* (13.81 gm / 13.78 gm). *Soja atrosperma* (12.26 gm / 11.44 gm). *Soja melanosperma* (9.19 gm / 7.93 gm). 5. How do soybean yields compare with those of other legumes? 6. What fixed position or rank does the soybean claim in the achievement of maximum yield, and how does one obtain the best seedstock (as for next year's planting). 7. Soil and manuring (*Düngung*, including fertilizer trials with Chili saltpetre / saltpeter [nitrate of soda or sodium nitrate from Chile] [*Chilisalpeter*] and sulphate of ammonia / ammonium sulfate [*schwefelsaures Ammoniak*]). 8. Animals and parasites that harm the soybean. Note: Regular saltpeter is potassium nitrate. 9. Is the cultivation of soybeans in Germany to be recommended? 10. Utilization of soya. 11. Summary of the main results and closing words.

Soya is a superior fodder material. Haberlandt organized field trials in all parts of the Austro-Hungarian empire and many surrounding countries. It should be noted that the introduction of this fodder plant to Germany, primarily in Bavaria, was undertaken by Professors Braungart in Weihenstephan and Lehmann in Munich. Unfortunately, there was bad weather during the early years of attempted introduction.

Concerning harvesting: If you can pull out the plants easily by hand, which is possible when the soil is soft, this is the best way to harvest them. If that is not possible, you can take them out with instruments / tools (*Instrumenten*), which enable you to cut the plants close to the ground, since soybeans have very low pods (*Früchte*)—7-9 cm above the ground. For this reason you should not use mowing machines (*Mähmaschinen*), based on the experience they have had in Hungarian-Altenburg with large-scale cultivation.

The author gives original analyses of the nutritional composition of various soybeans, including oblong black soybeans grown in Munich, Germany, and at the Agronomic Institute in Paris, France.

Section headings include: Is the soybean recommended for cultivation in Germany? Use of the soybean. Miso paste and a brew, the soju. Preparation of shoyu taken from Haberlandt.

Professor Hecke of Vienna gave the following recipe for the preparation of a puree: Take 1 part soy meal [probably whole soy flour] or soya schrot and 2 parts fresh potatoes. Cook each separately, then mix to form stiff paste. Add salt and braised (*geschmorte*) onions. The addition of fat and milk is unnecessary since the soybeans contain lots of fat and protein. This dish tastes excellent, like Hecke said

(Wein 1881). Franz Mark of Budapest proposed the use of soybean as a coffee substitute. Blaskovics was a soy bean pioneer in Europe (Wein 1888).

Note 1. This material was also published as a book in 1881 by Verlag Paul Parey in Berlin. Ted Hymowitz got a copy from Prof. Dietrich Werner, a German interested in soybean history.

Note 2. The author uses two words, *Soja* and *Sojabohne*, to refer to the soybean. Address: Munich, Germany.

227. Organov, N. 1881. Soia ili maslichnyi gorokh (*Soja hispida* *) [Soybean or oil-bearing plant (*Soja hispida* *)]. *Trudy Imperatorskago Vol'nago Ekonomicheskago Obshchestva, St. Petersburg (Transactions of the Imperial Free Economic Society)* 1(2):184-198. Feb. [3 ref. Rus] • **Summary:** The asterisk in the title refers to a footnote (p. 184) which states: Some call this plant "Chinese beans"; in Austria they call them "Haberlandt's beans." Haberlandt is responsible for the successful cultivation of such useful soybeans in Germany. Thanks to Haberlandt, soybeans also became known in Russia. In 1877, Haberlandt sent about 50 soybeans to I.G. Podoba; from these soybeans we have already (1881) obtained 15 pounds of soybeans. This article is based on a brochure by Haberlandt [his superb book, *Die Sojabohne*, 1878], plus the scarce information from the Russian agricultural literature.

The origin of the soybean is in Asia (India, China, Japan, Mongolia). Large quantities of numerous varieties are cultivated there. Soybeans are also grown in the Caucasus, Tunisia, and Algeria, as well as in southern and central Europe. Many attempts have been made to cultivate soybeans in Europe, but more were unsuccessful. Attempts were made in: Hohenheim [Germany]—unsuccessful. Bamberg [southern Germany], by Dr. A. Rauch, who obtained the seeds from their native country—unsuccessful. Germany, by Carl Berndt, using seeds from Shanghai—unsuccessful. France, where soybeans are more commonly known as *pois oleagineux*. 1872—During the Franco-Prussian War [1870-1872, France lost], Sergeant Otto Wehrman found soybeans in the botanical garden of Montigny near Metz and brought them to Germany, where in 1875 attempts to cultivate them were again made.

In 1877 Prof. Haberlandt (Austria) cultivated soybeans received from Capodistria in Istria [Istria or Istrian Peninsula; as of 2003 divided between Croatia and, at its base, Slovenia]. In Istria, soybeans were used to make coffee. They were also cultivated in Dalmatia [as of 2003 largely in Croatia] and southern Italy.

Such methods of cultivation resembled experimental gardening of horticultural and hothouse plants rather than scientific research on the acclimatization and growing capabilities of soybean plants.

The soybean plant has been well known and well documented by botanists and travelers since the last [18th]

century. Kaempfer called the soybean *Daidzu* or *Mame*. Linnaeus called it *Glycine soja*. Jacquin–*Dolichos soja*. Dr. von Siebold and Zuccarini *Soja Japonica*, Sav. and *Soja hispida*, Mönch. Each name represents a different variety of soybeans [sic].

A footnote (p. 181) states: The famous essay by Kaempfer, titled *Amoenitatum exoticarum politico-physico-mediciarum*, describes his travels in Persia and Central Asia in 1712. The essay includes descriptions and uses of soybeans in Japan, China, India, and other places.

Knowledge of and interest in soybeans in Europe expanded during and after the 1873 Vienna World Exhibition. Twenty varieties of soybeans were obtained by Haberlandt, who planted them in 1875 in the Vienna Botanical Garden.

A description of Haberlandt's studies (p. 186) includes favorable growing conditions, a description of planting, and identification of different soybean varieties. In 1876, there were only 7 interested people or organizations who wanted to continue Haberlandt's research on soybean cultivation. However by 1877 Haberlandt's successful results interested more people (up to 160). These people received samples of soybeans from Haberlandt and reported their results back to him. Footnote (p. 187): The results of Haberlandt's experiments and those of the colleagues to whom he sent samples were published in the 1878 brochure [sic, book] *Die Sojabohne: Ergebnisse der..*

Describes the physical appearance of soybeans.

Page 188 proposes uses for the soybean in Europe, as food for people, feed for livestock, soybean oil, coffee, and soy sauce. Quotations from Oken (p. 189-90) discuss various uses of soybeans, including a description Miso (a substitute for butter) and Shoyu (a sauce added to fried meat), and how each is made. In China, soybeans are used to prepare a soft cheese or cottage cheese (tofu). A footnote (p. 188) is a reference to a book: Oken. 1841. *Allgemeine Naturgeschichte für aller Staende*. Vol. 3, p. 1661. Page 190 continues with comments on the great nutritional value of soybeans when used as food. A quotation from Dr. F. Leithner [of Krems, lower Austria, on the Danube River, 38 miles west-northwest of Vienna] describes his positive experiences in preparing soybeans as dinner for his guests. Prof. W. Hecke recommended that soybeans be combined with potatoes to make a kind of porridge. A quotation from Dr. Eduard Mach [of St. Michele, South Tirol] describes the taste of soybeans. Other food uses of soybeans proposed by Haberlandt: a substitute for peas in pea sausages, chocolate substitute.

Three tables (p. 191) show the nutritional value / chemical composition of soybeans. (1) The first analysis of the composition of soybeans (soybean seeds) in Germany was conducted by Senff, who obtained the seeds from Japan [from Mr. Berndt]. Their average chemical composition is given. (2) Mr. A. Tomaszek / Tomasek [in Napagedl in

Mähren / Moravia, a region in today's Czech Republic] gives the following composition percentages for two types of soybeans from China, grown by him in 1876: yellow (column 1) and dark red (col. 2). (3) Further analysis by Tomaszek / Tomasek shows extremely high concentrations of fat and nitrogen [protein] for the two types of soybeans shown in table (2).

Three more tables (p. 192) give a more detailed analysis, by the Technical Laboratory in Vienna, of three soybean varieties: yellow (from Mongolia), yellow (from China), and dark red (from China). There are three columns: Original soybean sample, soybeans grown the first year, and soybeans grown the second year. For each variety, data are given for water, protein, fat, nitrogen-free extract, crude fiber, and ash.

A table (top of p. 193) shows the chemical composition of seven types of legumes: Peas, lentils, wild beans, yellow lupins, haricot beans, broad beans [*Vicia faba*], Chinese beans (soya), and soya beans. For each legume, data are given for water, protein, fat, nitrogen-free extract, crude fiber, and ash. The data for the first five legumes come from Emil T. Wolff. The data for the broad beans and Chinese beans (soya) come from J. Kuehn / Kühn. The data for the soya beans come from Zulkowski.

A quotation from Carl Berdt includes details on soybean composition, and discussion of the uses of soybean oil (including in bread). A table (p. 193-94), based on the research of Prof. Völker [Voelcker, of London] gives the percentage composition of dried soybean oil-cake (Chinese oilbean cake). A table (2 columns) by Caplan (p. 194) gives the chemical composition of soybean pods, and of the leaves and stems. Another table (p. 194-95) gives an analysis by Zulkowski of the composition soybean straw and chaff dried at two temperatures: air-dried, and dried at 100°C. A table (p. 196) shows the mineral composition of soybeans.

Pages 197-98 summarize: (1) Cultural trials and harvest information by Attems with Mongolian yellow and Chinese brownish-red soybeans. He was satisfied with the results and sees a future for soybeans. (2) Harvest results of Tomaszek. (3) Harvest results of Prof. Kulisz. Continued.

Note 1. This is the second earliest Russian-language document seen (Nov. 2002) concerning the soybean.

Note 2. This is the earliest Russian-language document seen (Sept. 2006) that mentions soy oil.

Alternate Journal Name entry: Trudy Vol'nogo-Ekonomicheskogo Obschestva (Scholarly Works of the Free Economical Society).

228. Renouard, Alfred. 1881. Sur l'introduction du soja hispida en Europe [On the introduction of the soybean to Europe]. *Association Francaise pour l'Avancement des Sciences, Comptes Rendu* 10:945-51. April. Session of 17 April 1881, Algiers. [3 ref. Fre]

• **Summary:** Contents: Introduction. History. Cultivation and harvest. Soya as a forage plant. The edible soybean [food uses]. “The *soya*, or rather the *soja hispida* is a plant that is cultivated at many locations in Europe, but whose name is not well known here, and which has only been cultivated for several years. Japan has long known the specialties of its cultivation. There it is well known under the name of *o'mamé* and from it is extracted, from the roasted seeds, the sauce called “japonaise,” which is found in the commerce of Europe, where it enjoys a good reputation.

History: At the Exposition of Vienna, in 1873, the Japanese government exhibited, for the first time, the soya as a forage and food plant. Some Austrian scholars, including Prof. Haberlandt of the Institute of Agronomy at Vienna, then studied the composition of this oilseed and perceived that it would make an excellent forage. In 1877 trials started in Austria. In 1871 the Society for Acclimatization in Paris sent several samples of soya seeds to M. Blavet, president of the Horticultural Society of Étampes. He grew the crop and sent samples to other departments and abroad. Later the seed house of Vilmorin coined the name “Soya of Etampes” (*soya d'Étampes*). But it does not seem that these laudable efforts have been crowned with success. Mr. Paillieux of the National Society for Agriculture, Mr. Saint-André, director of the Agronomic Station at Montpellier, Mr. Vavin of the Society for Acclimatization, have all worked with soya and are still working for the propagation of this useful plant.

“In the region of Nord, it is to a Frenchman, who actually lives in Moravia, that we owe the actual propagation of soybean culture: Mr. Julius Robert, who cultivates nearly 3,000 hectares at Seelowitz. Last year he made a gift of several hundred liters of soybeans to the Society of Farmers of Nord. At the instigation of Mr. Corenwinder, several farmers tried them. The results obtained by the first experimenters were, in general, satisfying, but we should not yet make a final judgment as to the plant's definite acclimatization. Nearly 30 farmers from around the town of Lille are proposing to plant soybeans again. Free samples, provided to our society by Mr. Olivier Lecq (of Templeuve), an agent for Mr. Robert and those who conducted the first trials, have been rapidly distributed. Today we can consider the soybean as definitely well tested in our department.

“Cultivation and harvest of soybeans: Mr. Yossida [Yoshida], a Japanese man from Tokyo, was sent to the town of Lille by his government to work seriously on cultivation and preparation of flax / linseed. He told us that there were at least 100 varieties of soybean in Japan. A Japanese book titled *Explanation, with Illustrations, of Trees and Plants Newly Determined*, mentioned 25 very distinct varieties of soybeans. The Chinese herbal only cited

five varieties, which seems to prove that the soybean is native to Japan.

“In France, we barely know 2 or 3 varieties: the yellow and the brown soybean for temperate climate, and the black for the warm climate. It is the yellow variety that was tried in the department of Nord, and also, by the way, the one that has been cultivated at the Museum since 1790; there we can observe that it comes up well but it does not produce seeds every year” (p. 946).

“In the department of Nord the soybean, can be harvested toward the end of September or during October. However, in warmer countries or regions, the harvest can begin in August or September.”

“The harvest ought to be done like that of the like the dwarf bean (*haricot nain*), in the department of Nord, in ripping out the stalks entirely, then suspending them from poles in an open field, the bundles of soybeans tied just above the top of the roots [hung upside down]. The plant thus dries rapidly, if the weather does not pose an obstacle to it. When the soybeans are well dried out, they can easily be stored: they are not attacked by weevils (*bruches*) that cause, as everyone knows, so much damage to beans, peas, lentils, etc.”

In 1879 in Austria trials were conducted by Mr. de Blackowicz [Edmund v. Blaskovics] under orders from the Hungarian Ministry of Agriculture. In 1879 he obtained an average yield of 1,699 liters/hectare (range: 237 to 3,262).

Mature and well dried, the soybean constitutes an excellent feed for animals in France. On this subject, comparative experiments on the nutritional value of air-dried soybean pods and dead leaves were conducted in 1879 by Messrs. Weiske, Delmel, and Schulze at the Proskau agronomic station.

In total, 1,000 gm of pods were fed to each of two sheep, from Jan. 8-15 then from Jan. 16-23. One table shows percentage of each nutrient in the pods digested by each sheep (p. 948). A second table shows the percentage of each nutrient in the dead leaves digested by each sheep (p. 949).

“Finally, the soybean has been fed to animals after having been ensiled in a mixture with various forages. The fermentation which these forage crops undergo changes the composition of each. For example, in mixing soya with maize (which contains only 4-5% protein), the protein content of the mixed silage is increased. The following analysis, made in 1879 at Loboitz (Bohemia) in the agricultural laboratory of the prince of Schwartzenberg, is of a forage composed 80% maize on the stalk and 20% soya on the branches. A table (p. 949) shows: Moisture 8.62%, fatty materials 2.33%, cellulose 43.94%, nitrogen-free extracts 27.56%, proteins 8.75%, and ash 8.80%.

On the farm of Mr. Julius Robert, the cattle being fattened were fed as follows (per head per day). A table (p. 949) shows—in February: Hay 3 kg. Soya and maize

ensilage 5 kg. Corn flour 1 kg. Beet peels 40 kg. Chopped straw 6 kg. Salt 80 gm. The amount of soy and maize silage fed in March and April were increased to 8 kg. The next table (p. 950) shows that the cattle gained (on average) 633 kg in Feb., 654 kg in March, and 690 kg in April. The increases in weight gain in March and April must be due entirely to the marked increase in the amounts of soy and maize silage fed during those two months.

The article concludes: "To make from the soybean what the Japanese and Chinese make from it is the least important part of the question; because we think that Europe will leave them with their soy butter (*mizou* [miso]), their sauce (*soyo* [shoyu]) and their cheese [tofu]. It is not surprising that people tried to make cheese; the legumine [a kind of protein] which the soybean contains in large proportion, is, as we know, analogous to casein and undergoes the same chemical reactions. By the way, all these products, except the sauce, are detestable to the European palate.

"Next year I shall give an account of the results obtained during three years of trials in the department of Nord" [in far northern France on the border with Belgium].

Contains eight tables from earlier publications by other authors. Address: The Younger (*films*), Civil engineer, manufacturer at Lille, secretary general of the Industrial Society of Nord [a department in northern France] (Ingénieur civil, Manufacturier à Lille, Secrétaire général de la Société industrielle du Nord).

229. Van Buren, Thomas Broadhead. 1881. The food of the Japanese people. Yokohama, Japan: Printed at the Japan Gazette. 19 p. No index. 24 cm.

• **Summary:** Contents: Introduction (meat eating countries vs. Japan). Cerealia (cereals). Leguminous plants. Tubers and roots. Herbaceous food-plants. Ame. Leading food plants (with Japanese name, scientific name, and parts eaten; incl. kudzu, udo, konnyaku, and daikon). Sauce.

Most civilized people are and always have been meat-eaters. "So universal has meat-eating been among the dominating races that it has become a generally received opinion that animal flesh is a necessity to a well-developed physique. The praises of beef are sung wherever Occidental civilization has penetrated. It is not only a popular belief, it is as accepted scientific opinion, that a considerable percentage of animal flesh must enter into the nourishment of any well-fed people."

"The food of Japan, with a population of 36,000,000, or about that of Great Britain and Ireland, engaged in every branch of human industry, presents a complete contrast to all this. Here they are essentially vegetarians, animal flesh being largely prohibited by religion, and its general use made impossible by reason of its comparative scarcity and consequent high price." Until a few years ago, their "isolation prevented the introduction of new food-plants adapted to their climate..."

In Japan there are little more than 1,000,000 head of cattle. Of these, only the cows (not more than 600,000) are eaten; male cattle are used only as beasts of burden. Thus in Japan there are less than 2 head to every 100 people, compared with 73 head in the United States. Of the 36,000 cattle slaughtered last year in Japan, "more than one-half were consumed by foreign residents and the foreign naval and merchant marine. The Japanese army and navy also consume considerable beef. It is therefore safe to say, as I have already intimated, that beef does not enter into the food of the mass of the people to any appreciable extent. Mutton and pork, outside of the treaty ports, are almost unknown. Of barnyard fowls, geese, and ducks there is a large variety. The wildfowl, consisting of pheasants, quail, woodcocks, grouse, ducks and geese are also abundant, but these, as well as eggs, on account of their high prices, can scarcely be said to enter into the diet of the common people at all, except upon rare occasions. Fish is more largely eaten. The variety of fish is very large... A very considerable percentage of the catch is dried." "At present it may be said that one-half the people eat fish every day, one-quarter two or three times a week, and the balance perhaps once or twice a month.

"Even with these exceptions the food of the masses is fully or even more than 90 per cent. vegetable." The Japanese exhibit "endurance of body and power of intellect to a very considerable degree, while deprived of the usual nutriment held to be essential to such developments."

The main cereals of Japan, in descending order of the quantities produced, are rice, barley, millet, rye, and Indian corn. The three main varieties of millet are extensively cultivated and used: First class is *Setaria Italica* (Italian millet). Second class is *Panicum miliaceum* (Indian millet). Third class is *Panicum frumentacum* (Called "hiye" [hie] in Japan).

"Leguminous plants. Perhaps in no country in the world are beans and pease comparatively so extensively cultivated as in Japan. There are more than 40 varieties. That known as the soy-bean is especially important, as it is rich in those nutritive properties which are wanting in rice, and is invaluable in a country where meat is almost entirely lacking in the diet. The composition of this variety, known as Miso-mame, is as follows (table): Water 11.32%. Ash 3.86%. Fat 20.89%. Nitrogenous matter 37.75%. Gluten 2%. Starch and sugar 24.08%. Its "proximate chemical composition approaches more nearly to animal food than any other known vegetable." Tables showing the composition of lean and fat beef are then given for comparison.

"I know it is held by scientists that, while these plants show a great chemical likeness to beef, the action upon the human body is not the same, being much less valuable. I can only repeat that here is a race of people of good physique, of stalwart and well proportioned, although not tall, frames,

and of cheerful dispositions, who daily perform tasks requiring great strength and endurance, who eat almost exclusively this vegetable food, and who, without any of the comforts of our western homes, and undergoing extreme exposure unknown to our people, live about the average lives of the laborers of Europe and America, with a table expenditure of about one-sixth or one-seventh that required by the latter.”

All classes of Japanese also consume many algæ and other sea plants, including many species of chondrus and Fucus-laminaria. Instead of sugar they use *ame*, “made from malted barley and rice or millet, the malt converting the starch of the rice or millet into dextrine and maltose, and producing the product varying from a thick sugar or honey up to a hard candy. The food value of this article is very great, and, as it is sold at a low price, its consumption is large. A table shows the composition of two grades of *amé*, first and second (cheaper).

Sauce enters very largely into the preparation of Japanese food for the table. The most widely-used kind is made as follows: “‘Shoyu,’ known to us as ‘soy,’ the one almost exclusively employed is made from wheat and the shoyu bean [soy bean] (ground) in equal proportions of one *sho* each (a *sho* is about 1 quart, 1 pint, and ½ gill). The materials are mixed and boiled, after which the mass is steamed in a basket or box prepared for the purpose, with a perforated bottom. When the steaming process is finished it is put in a cask and left until a green yeast is produced. The compost is then taken with salt water. After standing a good length of time the liquid is strained, and the sauce is ready for use. It has a rather pleasant flavor, and is said to be the basis of most of the renowned sauces [such as Worcestershire] prepared in England. The refuse is fed to cattle.”

The last 6 pages (p. 14-18) contain a “List of plants used for food, or from which food is obtained in Japan.” They are arranged by families. For each species is given: Botanical name, Japanese name(s), and remarks. Under Leguminocea [sic, Leguminosae], Papilionacea [Papilionaceae], we read: *Glycine soja* (S. & Z.), Tsuru mame; No mame, seeds. *Glycine hispida* (Moench) or *Soja hispida* (Miq.), Omame; daidzu, Soy bean; seeds; many varieties. *Dolichos soja* (L.), Japan pea. *Glycine hispida* f. *lanceolata*, Midzukugiri.

The section on legumes (p. 15) also discusses: (1) *Arachis hypogea* (L.), Rakkasho, Tojinmame, Ground-nut; earth-nut; fruit. (2) *Vicia faba* (L.), Sora mame, Broad beans; seeds = *Faba vulgaris*. (3) *Pisum sativum* (L.), Yendo [Endo], Pea; seeds; two main varieties; midori yendo [endo] and saya yendo [endo], the latter eaten for the pod. (4) *Pueraria thunbergiana* (Benth.), Kudzu, root, starch = *Dolichos hirsutus* (Th.). (5) *Canavalia incurva* (D.C.), Nata mame, seeds = *Dolichos incurvus* (Th.). (6) *Phaseolus radiatus* (L.), Adzuki-Shôdzu, seeds. *Phaseolus radiatus* var. *pendulus* (Savatier), Tsuru-adzuki, seeds. *Phaseolus*

radiatus var. *subtrilobatus* (Sav.), Bundo-Yayenari, seeds. (7) *Dolichos umbellatus* (Th.), Sasage, Adzuki-sasage, seeds. (8) *Atylosia subthombea* (Miq.), No-adzuki; Hime-kudzu, seeds.

Note 1. This is the earliest English-language document seen (Jan. 2005) that uses the term “broad beans” (or “broad bean”) to refer to *Vicia faba*.

Note 2. This is the earliest English-language document seen (March 2006) that uses the word “Yayenari” (or “Yayenari” or “Yaenari” or “Yae-nari”) to refer to a variety of azuki beans. Address: United States Consul General of Japan, Kanagawa.

230. *Oesterreichische Monatsschrift fuer den Orient (Vienna)*. 1881. Die japanische Sojabohne als Nahrungsmittel [The Japanese soybean as a source of food]. 7(12):204-05. Dec. 15. [1 ref. Ger]

• **Summary:** In the July issue of this periodical was information on the preparation of miso from soybeans. Additional information was sent by Dr. G. Wagener, our correspondent in Tokyo.

Contains a detailed description of how to make miso (miszo). Soybeans are soaked for 12 hours until soft. The water is poured off and the beans are then cooked for 5 hours in fresh water. The thick, viscous, sweet-tasting cooking liquid is filtered off (using a basket) and the beans are mashed underfoot. To each 1.8 liters of beans are added 5.4 liters of koji (made by the fermentation of rice), 5.4 liters of salt, and 1.8 liters of the cooking liquid. The combination is mixed and filled into vats, which are then covered with oiled-paper (*Oelpapier*). This koji miso or white miso is ready after 10 days.

A very delicious red (aka) miso is made without koji. In the countryside, miso is prepared in other ways and can be kept for 7-8 years.

231. Paillieux, Auguste. 1881. Le soya, sa composition chimique, sa culture et ses usages [The soybean, its chemical composition, culture, and uses]. Paris: Librairie Agricole de la Maison Rustique (26 Rue Jacob). 126 p. 28 cm. [42 ref. Fre]

• **Summary:** This is largely a reprint in book form of Paillieux’s excellent article by the same title published in the September and October 1880 issues of the *Bulletin de la Societe d’Acclimatation*. The arrangement of text on the pages is somewhat different from (and clearer than) the earlier publication, and it contains small amounts of new information—as on p. 87-88.

Note: This is the second book on the soybean published in the western world; the first was by Haberlandt in 1878. This book contains only one unimportant illustration, the same one found in the preceding articles. Address: Membre de la Societe d’Acclimatation, France.

232. Phares, David Lewis. 1881. Farmer's book of grasses and other forage plants, for the southern United States. Starkville, Mississippi: Published by the author. J.C. Hill, printer. 148 p. See p. 19. 22 cm.

• **Summary:** "Glycine hispida Japan pea: This bean (it is not a pea) came under my observation some twenty-five years ago [i.e. in about 1856], as the Japan Pea. It was then cultivated to a limited extent for a few years; but ceased to attract attention till the close of our civil war; when it was again widely sold as the Southern Relief Pea. The catalogues name it Soja hispida. Though not a climber, it may be the Dolichos Soja, or Soy bean of China and Japan.

"In this country, this bean is probably not esteemed so highly as it should be either for the table or for forage. Few people bring it to the table more than once; for when prepared as other beans it is inedible and disgusting. But when the ripe seeds are soaked from twelve to twenty-four hours they may be cooked so as to afford a most delicious and nutritious dish. The soaking changes the shape of the bean from globose to oblong."

"This is probably the Sooja or Miso of Japan so much used in soups in that country. The soy or sauce made from these seeds is used three times a day, as salt with us, in nearly all dishes. The favorite Chinese curd-like dish, *Teu hu*, also is made of these beans."

Phares lived 1817-1892. He resided in Mississippi in 1881, and says that he observed soybeans being cultivated in about 1856, but it is not clear that they were being cultivated in Mississippi, either in about 1856 or at the time this letter was written. Later documents (Riley 1909) prove that soybeans were grown in Mississippi as early as 1857.

Note 1. This is the earliest American document seen that uses the term "Glycine hispida" to refer to the soybean.

Note 2. This is the earliest document seen (April 2008) that mentions the soybean in connection with the U.S. Civil War. Address: A.M., M.D., Prof. of Biology, A&M College of Mississippi, Sanitary Commissioner for the State at large of Mississippi.

233. Wein, Ernst. 1881. Die Sojabohne als Feldfrucht: Zusammenstellung der vorliegenden Cultur- und Duengungsversuche fuer den praktischen Landwirth [The soybean as a crop: Compilation of the existing cultivation and fertilizer trials for the practical farmer]. Berlin: Verlag von Paul Parey. 50 p. [7 ref. Ger]

• **Summary:** This book is identical in content to a 50-page article also published in 1881 in *Journal für Landwirtschaft* (29:563-613)—which see for table for contents and details. However a dedication page states that the book is dedicated to the director of the Bavarian agricultural research station, Dr. Julius Lehmann. A forward notes that it was written in Munich, i.e., South Germany. Address: Munich, Germany.

234. Kraevskii, -. ed. 1882. Peterburskago sobranii sel'skikh khoziaev: 16-go fevralia 1882 goda [St. Petersburg meeting of agriculturists: 16 Feb. 1882]. *Golos* ("Voice") (*St. Petersburg, Russia; Newspaper*) No. 72. March 18. p. 5. [Rus]

• **Summary:** This full-page article begins: Head of the meeting: "Our colleague, K.A. Skachkov, who is well acquainted with China and its agriculture, will present his report about the soybean and its use in Chinese agriculture."

K.A. Skachkov: He notes the previous mention of soybeans by A.V. Sovetov. Soybeans are considered "new" only in Europe; they have existed for centuries in China and Japan, where they are well documented in monographs on soybeans. He discusses soybeans in northern China (methods of cultivation, climate, yield) and uses of soybeans in China and Japan such as soy sauce (*tsiap yu*), jiang (after processing soybeans to make jiang, which is fermented, the jiang is used to pickle the roots of vegetables which, being well salted, are eaten between meals and called *jiang-tsai*), soybean prices in Russia, and various types of tofu (*age-dofu*, *yaki-dofu*, etc.). He notes that in China soybeans are not sold in raw form (?), but can be obtained from factories.

After the talk, the head of the meeting asks if there are any questions or comments; various Russian participants (not only Skachkov) answer the questions. First, K.A. Skachkov comments on the preparation of tofu; the "60-day" soybean is best planted during the latter half of June in Russia.

E.I. Ragozin, asks: "What are the practical uses of the soybean for us [in Russia]? How can it be used in our agriculture? Can it be used only as feed for livestock or can it play a more important role? It is very interesting to discuss the theoretical possibilities of soybeans, but in my opinion it would be better to put them to use." A.V. Sovetov replies that, as he has discussed in a previous report, the soybean can be used as both livestock feed and human food. "It is of high nutritional value and contains twice as much nitrogen as meat, but only 18% fat. The answer to the question of how soybeans can be assimilated into Russian agriculture (and how successfully it can be bred here) lies in numerous experiments and trials of actually growing this plant here. Podoba has already proven that it can be grown in the far southern region of Russia (Tavricheskaia), as has Chernoglazov in the Poltavaskaia region and Levanda in the Kiev region. However, I do not know how far north soybeans can be grown, although I have heard of trials in the Voronezhkaia region."

A.S. Ermolov: "My cultivation of soybeans in the Voronezhkaia region was not successful. I know that they are not acclimatized to withstand frost." Again A.V. Sovetov replies that soybeans can handle a light spring frost, but an early fall frost kills soybean plants just as it does pea plants. As Podoba reports, it can survive temperatures 2-3°C below

zero. Discusses successful times and temperatures for soybean cultivation.

A.S. Ermolov: “Nevertheless, the soybean plant is fairly easily acclimatized. I talked about this matter with Friedrich Haberlandt, who agrees with me. It is just a matter of obtaining the right varieties.”

Head of the meeting: “I would like to add that with time and patience, plants can be gradually acclimatized to almost any environment.” A.V. Sovetov, in agreement, adds: Cucumbers and pumpkins, which are warm-weather plants, have been acclimatized to the colder climates of northern Russia. Likewise with beans. E.I. Ragozin adds that he cultivates beans here in the St. Petersburg region.

A.S. Ermolov concludes that soybeans can be cultivated perfectly well in at least southern Russia. However, he still questions how soybeans can be used in Russia. None of the other agriculturists at this meeting have told the society how they use the soybeans they grow, so Ermolov suggests listening to the ideas Sovetov has and will present.

A.V. Sovetov: Soybeans can be used to make: Soybean broth, a substitute for beans or peas, soybean potato cakes, a mixture with rice or corn. Soybeans have a very high nutritional value. They can also be used as a feed for livestock, or as food for the army or navy.

Head of the meeting: Difficulties in cultivating this plant should not prevent us from trying.

E.I. Ragozin: Would it be possible for me to obtain and attempt to cultivate the 60-day bean plant? A.V. Sovetov: Of course, but this 60-day bean plant is not a soybean plant, so the previous statements may not apply to it. Head of meeting: Closing remarks.

235. D’Utra, Gustavo. 1882. Soja [Soya]. *Jornal do Agricultor (Brazil)* 4(7):185-88. Sept. 16. [Por]

• **Summary:** The name of this plant comes from the Japanese. The soybean was cultivated at the Bahia School of Agriculture in 1882. He notes that Soja and Daidso are Japanese names, that the Japanese use soybeans to make a paste called miso, which can be used as a substitute for butter, and a sauce called sooia or soja, which can be used to season meat. Kitjap is a sauce made in Indonesia. Sr. Dias da Silva Junior (the editor of this journal) has distributed soybean seeds free of charge.

Note: This is the earliest document seen (Jan. 2001) concerning soybeans in Brazil or South America, or the cultivation of soybeans in Brazil or South America or Latin America. This document contains the earliest date seen for soybeans in Brazil or South America or Latin America, or the cultivation of soybeans in Brazil or South America or Latin America (1882). The source of these soybeans is unknown. Address: Engenheiro-Agronomo, Rio de Janeiro, Brazil.

236. Mene, Édouard. 1882. Des productions végétales du Japon [The vegetable products of Japan]. *Bulletin de la Societe d’Acclimatation* 29:466-90. Sept. See p. 477-90. [40 soy ref. Fre]

• **Summary:** This excellent review of earlier publications and work, which is largely about the soybean, contains 40 references to earlier publications, many of them from the *Journal of the Society for Acclimatization* and from early European botanists. Much of the information is taken from earlier issues of this periodical and from the book *Le Japon a l’Exposition universelle de 1878*.

Contents: The soybean (*Soja hispida*, *O mame*: *Daizu*, p. 477). The wild soybean (*Glycine hispida*, *Soja hispida*, p. 477; it is found in the wild in the coastal regions of the island of Kyūshū. Called *Tsuru-mame* and *Nô-mame* by Franchet and Savatier. Soybeans in the catalog of the Japanese Universal Exposition of 1878: No. 24–The black soybean (*Kuro-mame*), No. 25–The white soybean (*Shiro-mame*), No. 26–The green soybean (*Ao-mame*), No. 37–The black soybean speckled with white (*Gankui-mame*). Where the soybean is cultivated: Not only on the island of Japan, but also in India, on the island of Ceylon, on the Malacca peninsula (i.e. Malay Peninsula), on the Philippine islands, in Borneo, Java, in the Kingdom of Siam, in Cochin China, at Tong-King, and throughout China, but mainly in Mongolia and in the provinces of Honan, Shengking [Liaoning], Shantung, and Shansi.

The Chinese exposition (class 73) contains samples of all the varieties of soya cultivated in the provinces of the empire: No. 2991 and 3000–Green, white, black, yellow, striped / streaked / variegated (*panachés*), and red soybeans. Source: Chinese customs at Newchwang. No. 3014-3016–Yellow, black, and green soybeans. Source: Customs at Tientsin [Tianjin]. No. 3058 to 3061–Yellow, green and black soybeans., from the customs at Chefoo [Yantai]. No. 3091. Yellow soybeans, from the customs at Chinkiang [Zhenjiang]. No. 3103 to 3109–White, red, black, and yellow soybeans from the customs at Shanghai. No. 2135 to 3128–White, black, red, and green soybeans from the customs at Wenchow [Wenzhou]. No. 3152 to 3156–White, green, and black soybeans from the customs at Takow [Kao-Hsiung].

At the Japanese exposition (class 74, condiments and stimulants) are samples of miso and shoyu from Tokyo and the province of Hizen, especially the town of Nagasaki.

The Chinese exposition also contains in class 74 (condiments and stimulants) samples of soy sauce [*soye*, *soya*] called *Tsiang-yeou* from the Chinese customs at Chefoo, Ning-po, Wenchow, and Canton. The Chinese often add aroma in the form of star anise, green anise, and orange rind. Chinese soy sauce is made with yellow soybeans called *Houang-téou*.

Descriptions of how to make shoyu, miso, tofu, and soybean oil based on earlier European publications (p. 479-

83).

In France, Mr. Vilmorin and Dr. Adrien Sicard (of Marseilles), both of whom are involved with soybean cultivation, have prepared soy cheese (*fromage de Soja*) numerous times. Dr. Sicard has made both the white cheese and the red cheese; the latter is rolled in a powder made by grinding red sandalwood (*santal*; *Pterocarpus santalinus*), mace, and cinnamon (p. 482).

In China, quite a few soy oil factories are found at Calfond in Henan, at Tsinan in Shantung, and at Tayeurn in Shanxi. But the center of soy oil production in China is Ning-po in Zhejiang / Chekiang. From the port of Ning-po and from a port on the island of *Tcheou-chan* [*Zhoushan?*] a large number of junks, carrying only soy oil, depart. Two other manufacturing centers are Newchwang and Chefoo (p. 483).

There follows a long section on the introduction and acclimatization of the soybean in Europe (p. 484-89) based on earlier European documents.

The next section, about kudzu (*Pueraria Thunbergiana*, p. 489-90) cites 9 early references, including *Le Japon a l'Exposition universelle de 1878*, vol. II, p. 153). Address: France.

237. Giliaranskii, V.P. 1882. Monografiya Kitaiskago maslichnago gorokha "Soja hispida" [Monograph on Chinese oil-bearing pea plant *Soja hispida*]. *Trudy Imperatorskago Vol'nago Ekonomicheskago Obshchestva, St. Petersburg (Transactions of the Imperial Free Economic Society)* 3(3):269-71. Nov.; 3(4):435-50. Dec. [10 ref. Rus]
 • **Summary:** Part I (Nov.): Soybeans were introduced to Russia to increase the country's food production. Discusses the nutritional value of soybeans. Haberlandt introduced the cultivation of soybeans to Europe, and his trials proved that soybeans could be successfully grown in various European countries. However Podoba was the first who practically / experimentally proved the success of soybean in Europe. Podoba also installed a laboratory partner named Fein in southern Russia. The first popularizer was A.V. Sovetov, who initiated further projects and data collection.

Giliaranskii began his work in 1881 when he received 5 soybean seeds from his director, Nikolai Pavlovich Ill'inu, who also allowed Giliaranskii to use his equipment and laboratory. In 1880 the Asian Department of Foreign Ministry (of Russia) obtained soybean samples by demand. In the same year, crop information about soybeans was received from the Consulate.

In the text, Giliaranskii then cites five documents that were helpful to him in compiling this article: (1) Organov, N. 1881. *Soia ili maslichnyi gorokh (Soja hispida *)* [Soybean or oil-bearing plant (*Soja hispida* *)]. *Trudy Imperatorskago Vol'nago Ekonomicheskago Obshchestva, St. Petersburg (Scholarly Works of the Imperial Free Economical Society* 1(2):184-198. Feb.; 1(3):304-325.

March). (2) The publications of Dr. Bretschneider, who was on a mission to Peking. (3) *La Planta Soja hispida*, by Geerts, a report from a mission to Japan. Chapters 3 and 4 from Part 1; Chapters 4 and 5 from Part 2 (translation from French), including much information about soy sauce and miso. (4) The famous book: Haberlandt, Friedrich. 1878. *Die Sojabohne: Ergebnisse der Studien und Versuche ueber die Anbauwuerdigkeit dieser neu einzufuehrenden Culturpflanze* [The soybean: Results of studies and trials on the potential for growing this newly introduced crop plant]. Vienna, Austria-Hungary: Carl Gerold's Sohn. ii + 119 p. (5) *Oesterreichische Monatsschrift für den Orient* (Vienna). 1881. *Die japanische Sojabohne als Nahrungsmittel* [The Japanese soybean as a source of food]. 7(12):204-05. Dec. 15.

Part II (Dec.): Chapter 1. Oil of soybean seeds (*Maslo semian soi*). Bretschneider discusses the taste and use of soybeans in Russia. Karl Brendt is mentioned again. Giliaranskii states: "My yield included 40 *zlotnik* (1 *zlotnik* = 4.26 gm) of oil, produced from the variety of seeds received from Mr. Podoba. The oil was extracted using sulfuric ether. I had about 4 lb of soybeans, which I ground in a coffee mill. Then I immersed the flour in ether in a test tube for 4-5 days. Almost all of the oil was extracted. I also extracted the oil using carbon bisulphide, but the yield was 1.5% less than with sulfuric ether.

"I also tried to extract the oil using petroleum ether, but again the yield was unsatisfactory. In addition, the petroleum ether dissociates from the soybean oil, thus changing the latter's smell and taste. The product known as *rigolen*, which has a boiling point of 35°C, would be the best solvent of all, it is impossible to obtain in St. Petersburg.

"The oil I extracted using sulfuric ether had a clear, heavy yellow color, similar to olive oil in color and viscosity... however as time passes, under certain conditions, it becomes black in color." Through his experiments, Giliaranskii proved that soybean oil contains nitrogen. Sato and his experiments are mentioned (p. 436-37).

A table (p. 437-38) gives the percentage composition of soybean cake (water, protein, fat, nitrogen-free extract, cellulose, ash), with two columns based on the research of Völcker (1872) and J. Kühn (see Pott 1889, p. 490). Soybean oil cakes, known in English as "bean-cakes," are an important export from the port of Newchwang to southern China, especially to Syamou (?). Discusses the price of soybeans.

Chapter 2. Uses of soy sauce (in China, as well as Europe). Methods of preparing soy sauce are described in numerous Chinese and Japanese publications, but also in European publications such as: (1) *Etude pratique du commerce d'exportation de la Chine*, by N. Rondot (1848, Renard, p. 188). (2) *Chinese Commercial Guide*, by W.

Williams (1863, Hong Kong, p. 139). (3) Newspaper article by K.A. Skachkov in *Golos* [Voice] (No. 72, 1882). The main ingredients used in making soy sauce are yellow soybeans (*Soja hispida*, Shiro-daizu or Teppo-mamé or Shoyu-mamé), wheat koji, salt, and water. A detailed description of the process is given. Amazake is sometimes added to soy sauce to give variation in the flavor. Kinch's analysis of Geerts' data (p. 443) gives the relative density of soy sauce as 1.199. The density of soy sauce solids is 359.88 gm/liter. A table (p. 443) gives the density (in gm/liter) of soy sauce constituents as follows: Ash 195.16. Sugars 31.03. Albumen 41.00. Acids 6.20.

Chapter 3. Sauce *miso* or *dai-dzu-ko*. Describes seven different types of Japanese miso and how each is made: 1. Original miso or *shiro miso*—white with little salt. 2. *Chu-miso*—very salty. 3. *Aka-miso*—red, prepared with koji. 4. *Nagoya-miso*. 5. *Kinzanji-miso*—made with soybeans, eggplant and gingerroot. 6. *Mugi-miso*—made with barley and soybeans. 7. *Kogane-miso*—a type of *aka-miso*. A table (p. 445) compares the nutritional composition of *shiro-miso* and *aka-miso*.

Chapter 4. Tofu. Chinese name: doufu. English name: bean-curd. Japanese name: tofu. Yellow soybean varieties (*Gogwatsu-mamé*, *Wase-mamé*, and *Natsu-mamé*) are widely used in Japan to make tofu. A table (p. 447-48) gives the percentage composition of tofu, with two columns based on the research of Kinch (1880) and Geerts (1876). Tofu is seen as an excellent alternative for dairy cheeses.

Chapter 5. Preparation and composition of dried-frozen tofu (kori-tofu) and other types of tofu (dried cheeses). A table gives the nutritional composition of kori-tofu (based on Kinch 1880). Also discusses *agé-tofu*, *abura-tofu*, and yuba. Describes the method for preparing yuba, which is eaten in soups in Japan. Several tables were summarized by Nikitin in Russian (1900) and German (1901). Address: USSR.

238. Kinch, Edward. 1882. Die Sojabohne [The soybean]. *Biedermann's Central-Blatt fuer Agrikulturchemie* 11:753-55. Nov. [Ger]

• **Summary:** According to Watt (1890, p. 511): "In 1882, Professor Kinch urged the advisability of renewed efforts [to grow soya] in the Himalayan tracts, and, as a consequence, the government of India directed the attention of local officials to the subject. Seed obtained from the Government Gardens, Saharanpur, were distributed to Madras, the Panjab, Bengal, Bombay, Hyderabad, and Burma, for experimental cultivation. It appears to have been grown from seed obtained from China with a fair amount of success at the Saidapet Experimental Farm in 1882."

"The chemical composition of the bean, according to Professor Kinch, places it above all other pulses as an albuminous food, while that of the straw also surpasses in nitrogen value that of wheat, lentils, and even hay."

Table 1 gives original analyses of the nutritional composition of various soybeans, including: from Japan, pale/colorless from China, yellow from Germany, from India, brown, round black, and oblong black soybeans.

"The average composition of the straw, the pods, and of a type of soybean straw from Japan, which are used as very tasty feeds for horses, cows, and sheep" are given in table 2.

Table 3 gives the nutritional analyses of various soybean products: White miso, red miso, Tofu or *Bohnenkäse*, frozen tofu (*gefrorener Bohnenkäse*), and soybean cake (*Sojabohnenkuchen*) which remains after pressing out the oil (*Abpressen des Oels*).

Table 4 shows the percentage composition of nine different mineral salts in the ash of soybean seeds and straw.

Note 1. This is the second earliest document seen (Jan. 2001) concerning soybeans in Burma. It seems likely that soybeans were cultivated in Burma at that time, but that is not certain. This document contains the second earliest date seen for soybeans in Burma (1882).

Note 2. This may be the second earliest document seen (July 2006) concerning soybeans in Pakistan, however that is not certain. The nation of Pakistan was created out of British India in 1947. In 1882 Panjab (Punjab) was a province in British India. It was divided in Aug. 1947 into East Punjab, India (with about 1/3 the area and 1/2 the population of the original province), and West Punjab, Pakistan. West Punjab was renamed simply Punjab and is now one of Pakistan's four provinces; its capital is Lahore.

Note 3. This may be the earliest document seen concerning soybeans in Bangladesh. If so, this document contains the earliest date seen for soybeans in Bangladesh (1882). The source of these soybeans is unknown. The province of Bengal in British India was divided on 15 Aug. 1947 into East Bengal (now Bangladesh) and West Bengal (part of India). It is not clear to which part of Bengal these soybeans were distributed.

Note 4. This is the earliest German-language document seen (Feb. 2004) that mentions dried-frozen tofu, which it calls "gefrorener Bohnenkäse." Address: Professor, Cirencester, England.

239. *Indian Agriculturist (The) (Calcutta)*. 1882. The Japan Pea in India. Dec. 1. p. 454-55. [2 ref]

• **Summary:** "If all accounts of this vegetable be true, it is a most important addition to the stock of Indian food, and fodder plants." An American paper writes of it: -

"The Japan Pea is the most productive as well as good food for all kinds of stock; horses, cattle, sheep, and hogs will eat the peas, stems, and leaves, if harvested before fully matured, and cured like all other hay, with as much relish as they do corn. Then, there is no pea for the table—it is soaked in water the night before cooking—that has a more exquisite flavour. They grow on a stout bushy stalk from two to three feet high, somewhat resembling the cotton plant. The main

stalk, as well as the branches of the limbs, are literally loaded with small pea-pods, filled with little yellow peas, similar in colour, size, and flavour, to the English garden pea. The way to get the greatest yield is to plant in hills two and-a-half feet each way, allowing but one stalk to the hill to remain after the first working. That will give you 6,960 stalks to the acre, and on ordinary land, cultivated the same as corn, will average at the lowest estimate a pint of shelled peas to the stalk, or a fraction over 108 3/4 bushels per acre. With high cultivation and good soil, it would be an easy matter to double that yield: besides, there is no other crop that will yield more hay to the acre. It is a sure cropper, neither wet nor dry weather materially interferes with the quantity or quality of the yield.'

'In a paper on the Soy bean, as the Japan pea is sometimes called, Mr. Kinch, Professor of Chemistry at the Royal Agricultural College, Cirencester, says, that it is worth more than a passing notice, as it is the vegetable which approximates most nearly, in its chemical composition, to animal food:

'The Soy bean is extensively cultivated in the north of China, whence it is exported to the southern provinces; it is here pressed for the sake of its oil, and the residual cake largely used as food for man and beast, and also as manure. In Japan it is known by names signifying the bean, and from it are made not only *soy* but a paste, known as *miso*, which is in constant request at nearly every meal, *tofu* or bean cheese, and other foods used to a less extent. This bean cheese is also well known in China, and is obtained by extracting the legumin from the beans with water, and precipitating it with brine. These foods are most valuable additions to the dietary of the Oriental nations, and especially of the Japanese, who use so little animal food; they tend to supply the deficiencies of the staple food, rice, nitrogenous matter, fat, and also in mineral constituents. The Buddhist priests, who are strictly forbidden the use of animal food, consume considerable quantities of these beans, principally in the form of *miso*. The soy bean first attracted attention in Europe in the year 1873, when specimens from Japan, from China, and from India were shown at the Vienna International Exhibition. Dr. Forbes Watson, Reporter on the products of India, called attention to it in the catalogue of the exhibits of the India Museum. Since then, numerous experiments have been made on the European continent on its growth, and also feeding experiments with the bean and its straw, on different kinds of animals, have been prosecuted. Such experiments have been carried on by Woolling and Wein at Munich; by Haberlandt, Lehman, Harz, Stahel, Zimmerman, Siewert, Wieske, and others, at various stations in Germany, Austria, and Hungary; and experiments have also been made in France and in Italy... The kinds most suited for cultivation there are the yellow, brown, round black, and long black varieties, especially the first three named.'

'Taking into account the great richness of these beans in valuable food constituents, their easy digestibility, the value of the straw, and the great probability of some variety being able to be acclimatized without great trouble, this *soja hispida* is worth consideration. The bean would form an exceedingly useful addition to the food of the poorer classes, as a substitute for a portion of the animal food which in the kitchens of the labouring classes is so wastefully cooked. One use it has already found, not altogether to be recommended, viz., after roasting, as an adulterant of, and substitute for, coffee.'

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term "bean cheese" by itself (with a space before the word "bean," and where it is not preceded by the words "soy," "soya," "soja," etc.) to refer to tofu. Address: India.

240. Bretschneider, Emil V. 1882. *Botanicon sinicum. Notes on Chinese botany from native and Western sources. I. J. of the Royal Asiatic Society, North China Branch. Series 2.* 16:18-230. For the year 1881. [1882* ref. Eng]

• **Summary:** The single most important early work on Chinese botany written by a Westerner. Bretschneider, an M.D., lived 1833-1901. Contents: Preliminary Notices (p. 18-22). 1. Contribution towards a history of the development of botanical knowledge among eastern Asiatic nations: Chinese literature on materia medica and botany (p. 22-75, incl. the *Materia Medica* of Shen Nung, p. 26-32), Chinese works on agriculture (p. 75-86). Chinese geographical works containing botanical information (p. 86-92). Early acquaintance of the Chinese with Indian and Western Asiatic plants (p. 92-95). History of materia medica and botany in Japan (p. 96-101). On the botanical knowledge of Coreans [Koreans], Manchoos [Manchus], Mongols, and Tibetans (p. 101-05).

2. On the scientific determination of the plants mentioned in Chinese books (p. 105+, incl. Cleyer, Siebold, and Kaempfer, p. 124-27). 3. Alphabetical list of Chinese works (p. 131-216). Index of Chinese authors (p. 217-22). Celebrated mountains of China (p. 223-28).

Concerning Shen nung, "Chinese works on agriculture" (p. 75) states: "The primeval Emperor *Shen nung*, whom the Chinese believe to have composed the first treatise on *Materia medica*, is also credited with having laid the foundation of Chinese Husbandry. His name implies this tradition, for *Shen nung* means: the Divine Husbandman. It is related in the early records that the people of his age were rude and wholly unacquainted with the advantages of agriculture. They subsisted on fruit, vegetables, and the flesh of birds and beasts. *Shen nung* examined first the quality of the soil, fashioned timber into ploughs and taught the people how to till the ground and raise grain. On a previous page I referred to the mountain in Shan si, where tradition makes him first teach his people the fundamental

processes of agriculture. Sz' ma Ts'ien [Ssu-ma Ch'ien] (B.C. 163-85) records in the *Shi ki* [*Shih chi; Historical records*] (book 1) that Shen nung sowed the five kinds [of cereals].”

In the section on the work of early Europeans who studied the flora of East Asia, the following researchers are discussed in detail: Cleyer (p. 124), Kaempfer (p. 125-26), Thunberg (p. 126), Siebold (p. 126-27), Miquel and Zuccarini (p. 127), Hoffman and Schultes (p. 127-28), Dan. Hanbury (p. 128), O. Debeaux (p. 128), Dr. Fr. Porter Smith (p. 128-29), and P. Perny (p. 130; very critical). Address: China.

241. Bretschneider, Emil V. 1882. *Botanicon sinicum. Notes on Chinese botany from native and Western sources* [Part I]. London: Trübner & Co. 228 p. No index. 28 cm. [1882* ref. Eng]

• **Summary:** The contents of this book was first published in 1882 as an article in the *Journal of the Royal Asiatic Society, North China Branch*. (Vol. XVI, 1881; Article III). Series 2. The contents and pagination of this book is the same as the original article (which see). Address: M.D., Physician of the Russian Legation at Peking, China.

242. Hanausek, T.F. 1882. Die Sojabohne [The soybean]. *Irmischia Botanische Monatschrift. II* No. 7. p. 44-45. [13 ref. Ger]

• **Summary:** In 1867 11,493 gallons of soy sauce were imported to England, and England then exported 2,166 gallons. Address: Dr., Germany.

243. Spon, Edward N.; Spon, Francis N. 1882. *Spons' encyclopaedia of the industrial arts, manufactures, and commercial products. Vol. 4: Bean-oil*. London and New York: E. & F.N. Spon. p. 1153-1536. See p. 1378. Edited by Charles G. Warnford Lock.

• **Summary:** The section titled “Oils and fatty substances” begins (p. 1360) by noting that in everyday language the word “oil” is often “made to embrace three distinct classes of bodies:—(a) ‘fixed’ or ‘fatty’ oils, (b) ‘volatile’ and ‘essential’ oils, and (c) ‘petroleum’ and other ‘mineral’ oils... The term ‘fat’ is applied to these oils when they are in a solid state; thus the same product may be an ‘oil’ in one climate, and a ‘fat’ in another.”

In the section on “Vegetable oils and fats [A. Fatty or fixed]” we read (p. 1377-78): “Bean oil.—The seeds of the Chinese oil-bean, the *sooja* or *miso* of the Japanese (*Glycine Soja* [*Soja hispida*]) afford 17-18 per cent. of a fatty oil. The plant is shrubby, attaining a height of 3-4 ft., and resembling the common dwarf kidney or French bean. The seeds are somewhat smaller than French beans, and vary in colour, from white to yellow and green. The plant is chiefly cultivated in the north of China, especially in the province of Shantung. The Chinese usually obtain 17 per cent. of oil

from the seeds by simple pressure. The oil bears a general analogy to the ordinary edible oils of commerce, possessing an agreeable flavour and odour. It is useful for burning; exposed to a low temperature it becomes pasty, and oxidizes rapidly on exposure to the air. As a drying oil, it might replace linseed for some purposes. As an illuminator, it is being rapidly replaced by American petroleum, but is still extensively used for food. The oil, the cake left after expression of the oil, and the beans themselves, are important articles of Chinese commerce.

“The exports from Chefoo in 1878 were 2468½ *piculs* (of 133.3 lb each) of bean-oil, 994,188 of bean-cake, and 160,549 1/3 of beans; in 1870, the exports of the oil from this port were 44,530 *piculs*; in 1877 only 327 *piculs*; and in 1879, 1491 *piculs*. The exports of bean-oil from Newchwang were 4947 *piculs* in 1877, 3287¼ in 1878, and 11,630 in 1879; of beans, in the same years, 1,439,062, 2,156,064, and 1,835,444 *piculs* respectively; and of bean-cake, 792,166, 1,924,968, and 1,800,523 *piculs*. Chinkiang exported 69,090 *piculs* of beans in 1877, and 43,784 in 1879. Hankow imported 21,077 3/4 *piculs* of native bean-oil, value 15,624l. [British pounds sterling], in 1879. Kiukiang, in 1879, imported 17,675 *piculs*. Shanghai, in 1879, imported 282¼ *piculs* from native ports, and exported 33,940 *piculs* (besides 372 re-exports) to native ports. Wuhu imports quantities of the oil from Hohang, via Hankow, also from Hochow, Luchowfu, and some other places north of the river; the figures were, 659½ *piculs* in 1877, 13,574¼ in 1878, and 5284 in 1879. The cake is used for human and cattle food, and as manure. (See also Spices–Soy.) The plant is cultivated for its beans in many parts of India and the Archipelago; and has been successfully introduced into Austro-Hungary and N. Germany.”

Note 1. This is the earliest English-language document seen (Nov. 1999) with any term referring to the oil of the soybean in the title.

Note 2. This is the earliest document seen (Oct. 2001) containing industry or market statistics on soybean crushing, including production and trade of soybean oil, meal or cake.

Note 3. This is the earliest document seen (Oct. 2001) containing industry or market statistics on production or trade of soybeans.

Vol. 4 also discusses: Under narcotics–Hemp (bhanga, charas, ganja, hashish; p. 1305-07). Under “Oils and fatty substances: Vegetable oils and fats”—Almond oil (p. 1377). Hempseed oil (p. 1391). Linseed oil (p. 1393-94). Miscellaneous and unenumerated oils—*Cyperus esculentus* (p. 1413-14). Under animal oils and fats—Butterine, bosch, oleomargarine, or artificial butter (p. 1362-63, 1464-66). Bibliography of oils (p. 1483-84). Address: England.

244. Chernoglazov, L.A. 1883. K voprosu o Kitaiskom maslichnom gorokhe [On the question of the Chinese oil-

bearing pea plant]. *Trudy Imperatorskago Vol'nago Ekonomicheskago Obschestva, St. Petersburg (Scholarly Works of the Imperial Free Society)* 1(3):305-09. March. [Rus]

• **Summary:** Contents: Soybeans are successful in Russia. Success in Penza, Russia. Appropriate climate. Soybeans noted for excellent acclimatization ability. Appropriate soil for soybeans. Author's method of cultivating soybeans. Planting soybeans and their growth. Harvesting soybeans. Uses of soybeans: Food, chaff, straw, enrichment of soil. Preparation of foods from soybeans: Soy sauce, miso, soup, flour, bread, potato pancakes. The writer prepared these foods from soybeans, then fed them to his co-workers. Note: He also sent these foods to this periodical to have them analyzed for their nutritional value. However, before the analyses could be conducted, the expiration date had passed. Conclusion: Incl. use of soybeans as a food for the army.

Note: Alternate Journal Name entry: Trudy Vol'nogo Ekonomicheskogo Obschestva (Scholarly Works of the Free Economical Society). Address: Butenkovskaya Station, Poltavskaya region [Ukraine].

245. Geerts, A.J.C. 1883. Observations on Kinch's list of plants used for food. *Transactions of the Asiatic Society of Japan* 11(Part 1):31-35. April. [3 ref. Eng]

• **Summary:** Note 1. Geerts is referring to the article by Kinch titled "List of plants used for food or from which foods are obtained in Japan," on pages 1-30 of this issue of this periodical.

"Prof. Kinch seems not to have been acquainted with the list of 447 economical plants, published in 1826 by Ph. Fr. von Siebold in the *Transactions of the Batavian Society of Arts and Sciences [Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen]*, Vol. XII, under the title of 'Synopsis plantarum oeconomiarum universi regni Japonici,' for Mr. Kinch mentions only the more imperfect list given by Thunberg in his *Flora Japonica*. Further, several articles written on the subject of economic Japanese plants, published by von Siebold in the *Journal of the Royal Dutch Society for the Advancement of Horticulture*, during the years 1844-45-46, etc., might be perused with advantage by those who wish to study the practical side of Japanese economic plants.

"In Karl von Scherzer's work, *Fachmaenische Berichte ueber die oesterreichisch-ungarische Expedition nach Siam, China und Japan*, Stuttgart, 1872, there is an extensive article by Dr. S. Syrski, on Japanese horticulture and economic cultivated plants, pp. 175-220. Several interesting observations on the mode of culture, time of sowing, planting, and harvesting, will be found there."

"As a preliminary catalogue Mr. Kinch's list may be useful for those persons who do not possess the botanical literature on the Japanese flora, but as a practical indication

for horticulturists the list is deficient. Note 2. Chinese characters (or katakana) are given for each for the following Japanese terms.

"For instance the plant *Dai-dzu* or *O-mame*, the *Soja hispida*, Moench, has in Japan five distinct cultivated varieties and eleven or perhaps more sub-varieties, viz:

"I. White or slightly yellow beans, *Haku-dai-dzu*. 1. Very early variety with very small bean. Harvest in July. *Goguwatsu-mame* 2. Early variety with small white bean, *Wase-mame* or *Natsu-mame*. These [first] two varieties are also called *Bai-to* or *Tofu-mame* and serve especially for preparing *To-fu* [tofu]. 3. Middle early variety with somewhat larger round beans, *Nakate-mame*. Much used for preparing miso. 4. Late variety with round and hard beans, *Okute-mame*. 5. Late variety, with smaller, perfectly round and hard beans, *Maru-mame*. Can be kept a very long time and is much used as food for horses. 6. Late variety, with large, perfectly round, and very hard beans, *Teppo-mame* or *Aki-mame*. Is much valued for the preparation of *Shoyu* [soy sauce].

II. "Black beans, *Koku-dai-dzu* or *Kuro-mame*. 1. Middle late variety, with round, small, hard, black beans, *Kuro-mame*. 2. Middle late variety, with round, large black beans, *Kuro-teppo-mame*. 3. Late variety, with flat, elliptic, black beans, *Go-ishi-mame* or *Kuro-torokusun* or *Hachi-bu-name* or *Tamba-kuro-mame*. These kinds [in category II.] are eaten in a boiled mixed with sugar as *entremets*.

"III. Brown beans, *Katsu-dai-dzu*. 1. Round reddish brown beans, *Aka-mame*. According to the size the Japanese distinguish even six subvarieties of this brownish Soya-bean. The reddish kinds are far less cultivated than the white and black varieties. 2. Light brownish-red and round beans, *Cha-mame*. According to the more or less intense colour the Japanese distinguish three sub-varieties of *Cha-mame*. They are rarely cultivated. [Both these types] are eaten with sugar in a boiled state" (p. 34).

Note 3. This is the earliest English-language document seen (Oct. 2004) that mentions red or reddish soybeans (actually brownish-red).

Note 4. This is the earliest English-language document seen (Feb. 2007) that contains the word "Soya-bean" or ("Soya-beans").

"IV. Greenish or blue-greenish beans, *Sei-dai-dzu* or *Aö-mame*. 1. Round, middle-sized greenish beans, *Aö-mame*. The Japanese distinguish two sub-varieties, viz., α . *Sei-hi-to* with the epidermis only of a green colour, but white inside [and] β . *Nikuri-Sei*, which are outside and inside of a greenish colour. 2. Light green round beans, *Kagemame*. [All] are only cultivated in the provinces of Ise, Iyo, Harima, Idzumo [Izumo], Omi. Eaten with sugar in a boiled state. Note 5. This is the earliest English-language document seen (Oct. 2004) that uses the term "light green" to describe the color of a soybean.

“V. Spotted beans, *Han-dai-dzu* or *Fu-iri-mame*. 1. Greenish, flat, oblong beans with a black spot at the navel. *Kuro-kurakake-mame*. Relatively rare and only cultivated in Nagato [an old province on the southwest tip of Honshu, Japan; as of 2003 part of Yamaguchi prefecture], Idzumo [Izumo] and the environs of Kiyoto [Kyoto]. 2. Yellowish-green, flat, and slightly oblong beans, with a dark brown spot at the navel. *Aka-kura-kake-mame*. Rare. 3. Yellowish-green beans with many dark spots. *Furi-mame* or *Udzura-mame*. Rare. Cultivated in Harima province.”

Note 6. This is the earliest English-language document seen (Oct. 2004) that uses the term “Yellowish-green” to describe the color of a soybean.

Note 7. This is the earliest English-language document seen (Sept. 2004) that uses the word “spots” (or “spotted” or “spotting”) or the term “reddish brown” to describe the color of soybean seeds.

Note 8. This is an excellent, original article, which gives the names of many Japanese soybean varieties for the first time in English or any other European language. That information is largely derived from Inuma (1861 and/or 1874).

246. Kenny, W.J. 1883. Account of a secret trip to the interior of Korea [in 1875]. *Transactions of the Asiatic Society of Japan* 11(Part II):141-47. Sept. [Eng]

• **Summary:** Translated from the Japanese. Page 142: 19 March 1875 near Pusan. “The food was rough and coarse, and assailed my nose with such a stench that indicated that it was putrid. One glance at it was quite sufficient to create a bitter taste in the mouth. To give a specimen or two of the dishes—one was herrings and shrimps pickled in salt (the latter cut in small pieces), exceedingly offensive to the smell. The soup or broth, made of bean sauce (Daidzu [soybeans] {a large French bean [sic]} and wheat are boiled, then mixed together, pounded and made into lumps; these are piled up, with straw between, for several weeks, after which they are again taken out, and, when dried, are ready for use), is thick like mud. With the exception, perhaps, of the pickled shrimps, I could not bring myself to eat any of these dishes.” Note: This bean sauce may have been Korean-style miso, *doenjang*, however it does not typically contain wheat as an ingredient.

Page 144-45: March 27... “In this house I stopped about a fortnight. Their food was rice or pulse, sometimes mixed, half and half, with wheat; and as to vegetables (they rarely used cultivated vegetables, but generally picked young shoots of wild herbs), they steam them, dip them into vinegar and soy, and then use them. During the fortnight or so I remained at this house I never saw them eating meat once. It is ‘said that even the middle and higher classes find it difficult to eat meat, and can only eat salt fish. The articles of food are for the most part rancid in smell. They make no particular change in their garments for inside and outside

wear. Their bodies and limbs are impregnated with filth; their clothing is a nest of vermin.”

247. Giliaranskii, V.P. 1883. Monografia kitaiskogo maslichnogo goroxa (*Soja hispida*) [Monograph of Chinese oil-bearing pea plant (*Soja hispida*)]. St. Petersburg, Russia: Printing House of “Obschestvennaya Pol’za” Union. 48 p. 20 cm. [1 ref. Rus]

• **Summary:** Contents: Foreword. Part I: Natural history of *Soja hispida*. 1. Soybean history (including I.G. Podoba’s experiments). 2. Plant description. 3. Soybean varieties. 4. Summary table of soy varieties cultivated in Japan. 5. Cultivation of soybeans. 6. Physical and physiological properties of soybean seeds. 7. Chemical composition of soybean seeds.

Part II: Soybean processing and utilization. 1. Soybean oil. 2. *Shoyu* [soy sauce]. 3. *Mi-so* [miso] sauce. 4. Vegetable cheese *to-fu* [tofu]. 5. Dried vegetable cheese *Kori-tofu* [dried-frozen tofu] and other varieties of *tofu*. Address: First Class Technologist/Production Engineer, St. Petersburg, Russia.

248. Koenig, Franz Joseph. ed. 1883. *Chemie der menschlichen Nahrungs- und Genussmittel*. Vol. 2. Zweite sehr vermehrte und verbesserte Auflage [The chemistry of human foods and food adjuncts (stimulants / enjoyables). Vol. 2. 2nd ed.]. Berlin: Verlag von Julius Springer. xviii + 816 p. See p. 371-72, 387. Illust. Index. 25 cm. [5 ref. Ger]

• **Summary:** In the section on “Legumes” is a subsection titled “Soybeans” (*Sojabohne*) (p. 371-72) which begins with short summaries of Haberlandt (1878) and Wein (1881). The first table, based on calculations by Wein, shows that, on a per hectare basis, soybeans yield about 1/3 more protein and about ten times as much vegetable oil as common beans or peas. The second table gives the average chemical composition of 43 soybean varieties analyzed by König, and first published in detail in Vol. 1, p. 103-04. The range: Protein 26.5 to 40.0%. Oil 14 to 19%. The third table gives the average analysis of the ash found by Edward Kinch in 1882. The soybean is unique among legumes in its combination of a high oil content with an even higher protein content. Moreover, its straw makes a nutritious fodder for cattle. “The soybean is therefore highly recommended for cultivation in Germany, and efforts should be made to find ways of producing good-tasting foods from it.”

In China and Japan, soybeans have long been used to make human foods such as miso (*Misobrei*), shoyu (*Soohu*), and tofu (*Tofu*). The fourth table gives the nutritional composition of five soy products as determined by Edward Kinch: White miso, red miso, fresh tofu, frozen tofu, and soybean cake. While some of these products may not be suited to German tastes, E. Wein has used soybeans to prepare a tasty German dishes, including a soup like that

made from beans and peas, a salad like that made from garden beans, or by cooking soybeans with potatoes or rice, a purée, which resembles Italian “Polenta” and has been called “Sojenta” by Haberlandt (1878). The taste of dishes made from soybeans reminds one of somewhat of almonds or chestnuts, but even more of garden beans. A soybean flour (*Mehl*), similar to the flour made from beans and peas, has already been made for kitchen use from soybeans (see p. 387).

The section titled “Legume flours” (*Leguminosenmehle*) (p. 387) contains a table that gives the nutritional composition of such commercial flours: Bean flour (*Bohnenmehl*), pea flour (*Erbsenmehl*), lentil flour (*Linsenmehl*), and soybean flour (*Sojabohnenmehl*). The latter contains: Water 10.23%, protein 25.69%, oil / fat 18.83%, carbohydrate 38.12%, cellulose (*Holzfaser*) 2.75%, ash 4.36%. On a moisture-free basis: Nitrogen 4.58%, carbohydrate 42.45%.

Also discusses: Lecithin in egg yolks (not in soy, p. 223, 233). Composition of vegetable oils, incl. olive, linseed, poppyseed, hempseed, rapeseed, white sesame, black sesame, cottonseed, peanut, palm kernel, coconut (p. 325). Lupins (yellow or blue, p. 373-75). Almonds (p. 495, 497). Agar-Agar (p. 496-97). Peanuts (p. 495, 497). Coffee substitutes (not incl. soy, p. 607). Address: Head, Agricultural-Chemical Experiment Station, Muenster in Westphalia, Germany (Vorsteher der Agric.-Chem. Versuchsstation Muenster in Westphalia).

249. Pogson, Frederick. 1883. Manual of agriculture for India. Calcutta, British India: Thacker, Spink and Co. 296 p. See p. 280-81. Index. [1 ref]

• **Summary:** Chapter 14, “Field pea crops, including the Japan pea” states (p. 184): “The Japan pea assumes the form of a bush from two to three feet in height. In the plains it should be sown after the rains cease. Drills should be made three feet apart, and a single seed should be sown at every three feet; the spot where the seed is sown being manured as for beans. The botanical name of the Japan pea is *Soya Hispida*. It is half pea and half bean in appearance, with singular leaves, and pods somewhat like the pods of the *Cajanus sativa* or *Urhur Dall [Dahl]* of the next chapter.”

In the Appendix (p. 267+) is a section titled “Japan pea” which states (p. 280-81): “A small supply of this pea-bean was received by the writer in the spring of 1882. It was freely distributed in Dehra, but failed entirely as a hot-weather crop. A few seeds sown at Mussoorie grew to the height of two feet, and bore pods very much resembling those of the *Urhur Dall (Cajanus sativa)*. At the writer’s request a supply of the seed was sent to Simla, and the result is given beneath.

“The Government of India has decided on the cultivation of the Japan pea being extended in this country, and with this view it has suggested that further experiments

should be made in suitable places. This bean or pea has its natural habitat in China and Japan, it also grows in Mongolia, and in India in the Himalayas, and within the last few years it has been cultivated experimentally in several European countries, under the name of the Soy bean. It is a vegetable, which approaches most nearly in its proximate chemical composition to animal food. The Soy bean first attracted attention in Europe in the year 1873, when specimens from Japan, from China, and from India were shown at the Vienna International Exhibition. Dr. Forbes Watson, reporter on the products of India, called attention to it in the catalogue of the exhibits of the India Museum. Since then numerous experiments have been made on the European continent on its growth, and also feeding experiments with the bean and its straw on different kinds of animals have been prosecuted. Such experiments have been carried on by Woolling and Wein at Munich; by Haberlandt, Lehman, Harz, Stahel, Zimmerman, Siewert, Wieske, and others at various stations in Germany, Austria, and Hungary; and experiments have also been made in France and in Italy.

“In Japan it is known by names signifying THE bean, and from it are made not only soy [sauce] but a paste, known as *miso*, which is in constant request at nearly every meal, *tofu* or bean cheese, and other foods used to a less extent. This bean cheese is also well known in China, and is obtained by extracting the legumin from the beans with water and precipitating it with brine. These foods are most valuable additions to the dietary of the Oriental nations, and especially the Japanese, who use so little animal food. They tend to supply the deficiencies of the staple food, rice, in nitrogenous matter [protein], fat, and also in mineral constituents. The Buddhist priests, who are strictly forbidden the use of animal food, consume considerable quantities of these beans, principally in the form of *miso*.’—*Vide ‘Simla Argus,’ 18th November, 1882.*”

Note: Simla was a hill station in British India. The *Argus* was a periodical published at Simla, a hill station in British India in the 1880s. The Simla Argus Press published a few books at the same place and time. Address: Lieutenant, Her Majesty’s Bengal Army, Dehra Doon; Honorary Member Agri-Horticultural Society of India.

250. Scheube, Botho. 1883. Die Nahrung der Japaner [The food of the Japanese]. *Archiv fuer Hygiene* p. 352-83. [3 soy ref. Ger]

• **Summary:** In the Japanese diet, rice plays the most important role. From a special type of glutinous rice, the Japanese prepare their beloved rice cakes, called *mochi*, which are found in every house during the New Years festival. The Japanese bake no bread, yet *Fu* (made from wheat gluten) could be considered a kind of bread. The process for making it is described.

Legumes, beans and peas, also are important in the Japanese diet. Countless types are cultivated, but the most important is the remarkable soybean (*Sojabohne*–*Glycine hispida*), on account of its richness in nitrogen [protein] and fat, and its relatively low starch content. The most important foods made from soybeans are tofu, miso, and shoyu; a detailed description is given of the process by which each is made. Two analyses of shoyu, by Ogata and by Kinch, give its composition. Beans and peas are also eaten as vegetables by the Japanese, and bean meal [probably kinako] is used in the preparation of many kinds of cakes.

On pages 361-67 are many tables containing descriptions of the diets consumed by various individual Japanese persons, usually for three days or three meals. For each is given: The age and approximate weight of the person, the foods consumed, and the weight (in grams) of each food consumed each day. Tofu (*Bohnenkäse*), miso soup (*Miso-Suppe*), and wheat gluten cakes (*fu*) appear with rice (and/or sushi or mochi) and tea in most diets. The word *Bohnensauce* (p. 362) appears to refer to shoyu (soy sauce).

Botho Scheube lived 1853-1923. Address: Docent, Univ. of Leipzig, Germany.

251. *Times (London)*. 1884. Japan at the health exhibition. Aug. 28. p. 2, cols. 4-5.

• **Summary:** “The last foreign court completed at the International Health Exhibition [in London] is that of Japan.” In a few days, a Japanese restaurant will be opened. “Two Japanese cooks have accompanied the Commissioners, and here the visitor will be able to make the acquaintance of some of the dishes which find a place on the *menus* of the Parisians of the East. Sweet-tasting bamboo sprouts, sweetmeats and confectionary of fanciful appearance; *saké*, ‘the wine of the country,’ a fermented drink made of rice and containing 11 to 12 per cent. of alcohol, the nutritious *miso* made from soy beans and fermenting rice [koji], frozen tōfu [sic, dried frozen tofu] or bean curds, tangle [kombu], salted mushrooms, dried shrimps, cured bonito, laver [nori], various edible seaweeds, orange vinegar, and several soys [soy sauces], are among the good things which those who are adventurous in dietary may enjoy.”

252. *Times (London)*. 1884. The Health Exhibition Japanese restaurant. Sept. 17. p. 4, col. 6.

• **Summary:** The Nippon Rioriya, modeled after the eating houses in Tōkyō, is hard to find at the exhibition. “Taking advantage of the concession to European prejudices the Commissioners have made in providing spoons, instead of obliging him to drink his soup like tea from the bowl, the adventurous diner-out will find that he has before him a savoury compound called on the card *misoshiru* [miso soup]. This is made, as the root word denotes, from *miso*, a fermented mixture of soy beans, wheat, and salt.” He may

also enjoy “a piece of plump sole stewed in soy” [sauce], the “brown soy-coloured beans and strips of *kikurage*, or ear-shaped mushrooms,” the *wanmori* which includes “pieces of a soaked *fu*, a kind of biscuit made from the glutinous part of wheat flour. The gravy in which these *pièces de résistance* are floating is thickened with a transparent starchy substance, obtained from the root of a climbing plant (*Pueraria Thunbergiana*), called by the Japanese *kuzu*.”

“One other relish must be noticed, the sliced root of the burdock, salted and preserved in *miso*.”

253. International Health Exhibition, London. 1884. The Health Exhibition Literature. Vol. XVII. London: William Clowes and Sons, Ltd. 749 p.

• **Summary:** Also cited as: (1) “Catalogue of the exhibits of Japanese Food Products at the International Health and Education Exhibition, held in London, 1884.” (2) “Japan. International Health Exhibition A. Descriptive catalogue...” (3) “London, International Health Exhibition, London. 1884. The Health Exhibition Literature. Vol. XVII.”

A map of the “International Health Exhibition, London, 1884” (p. 537-38), which was held at the Royal Albert Hall in South Kensington, on Exhibition Road near the High St. Kensington Station; gives an overview of the hall and surrounding roads and railway stations. The title of the section related to food is “Japan. A descriptive catalogue of the exhibits sent by the sanitary bureau of the Japanese Home Department,” prepared under the direction of K. Nagai, Commissioner, and J. Murai, Assistant Commissioner. There follows a 2-page Introduction by Kiuichiro Nagai, dated Sept. 1884. Then a table of contents of five groups; Group I is food. Then a table of Japanese weights and measures. Pages 545-71 begin: the “Descriptive catalogue.” Group I—Food. Detailed information and / or chemical analyses are given of the following: are given: (7) Soy bean (*Glycine hispida*) *O-mame*. (7A) *Phaseolus radiatus*. Adzuki. (192) Dried fruit of *Lagenaria vulgaris*–*Kan-pio* [*kanpyo*], cook with soy sauce. Mushroom (*Agaricus campestris*). *Shii-take* [*Shiitake*], cook with soy sauce. Kanten, vegetable isinglass, cook with soy sauce. Frozen konniaku [konnyaku]. Minoboshi daikon, cook with soy sauce. Fu, nama-fu, yaki-fu (roasted) (Wheat gluten). Kuzu starch. Buckwheat soba, cook with soy sauce. (203) Hijiki sea weed (*Cystoseira* species), cook with soy sauce. (204) Ogo sea weed (*Gigartina* sp.), cook with soy sauce. (205) Wakame sea weed (*Alaria pinnatifida*), cook with soy sauce. (206) Agar-agar (*Gelidium corneum*. Tengusa). Use to make tokoroten or kanten. (207) Tangle (*Laminaria japonica*). Kombu [konbu]. (208) Laver, dried (*Porphyra tenera*). *Asakusa-nori*. (209) Awonori, dried (*Enteromorpha compressa*).

(210) Frozen bean-curd. *Kōri-tōfu*. Dried bean curd. Refuse of bean curd–*kiradzu* [*kirazu*], *unohana*. (211) Yuba

(Skin of bean curd; “Yuba is made during the process of making bean curd, and is a thin, yellow, transparent substance).”

Note: This is the earliest English-language document seen (Oct. 2008) that uses the term “Skin of bean curd” to refer to yuba.

(213) Somen (Vermicelli), cook with *shioyu* (soy sauce). (228) Umeboshi (Salted and dried plums). (229) Miso (a fermented substance made from soy beans and yeast [koji]). *Miso-ai*, *Sansho-miso*, *shoga-miso*, *wasabi-miso*, *togarishi-miso*, *goma-miso*, *keshi-miso*, *katsuwo-miso*. (229a) *Konomono* [*Kô-no-mono*] (Vegetables pickled in fermenting mixture of bran and salt (incl. Nukamiso-dzuke (pickled in salt and bran), Takuwan-dzuke (radishes pickled in salt and bran), Shiwodzuke (salted), Shio-oshi (salted and pressed), Kasudzuke (pickled in sake residue), Misodzuke (pickled in miso), &c.)). Takuwandzuke [Takuan pickles]. (229b) Kasu-zuke (mentions miso soup). (230-35) Shoyu (Soy) and how it is made [p. 21 of section]. Chemical analysis of Kikkoman shoyu. Eight chief brands of shoyu. (236) Mirin (a kind of sweet liquor), with koji. Sembei [senbei], with miso. (242) Yokan, three varieties. (246) Midzu-ame [mizuame]. Frozen mochi.

Class III—Prepared animal substances. Dried cod fish, cooked with soy [sauce]. Beef tsukudani, cooked with soy [sauce].

Class IV. Beverages. Sake (wine), made with koji (yeast). “Koji (yeast) is used for brewing Sake in Japan, almost like malt used for brewing beer in western countries,…”

Class VI. Cookery practically demonstrated. Nippon Ryoriya (Japanese restaurant), incl. misoshiru (miso soup), and *konomono*. Address: England.

254. International Health Exhibition, London. 1884. (229) Miso (a fermented substance made from Soy Beans) (Document part). In: International Health Exhibition, London. 1884. *The Health Exhibition Literature*. Vol. XVII. London: William Clowes and Sons, Ltd. 749 p. See p. 563-65.

• **Summary:** “Preparation.—There are many ways of making miso, they do not differ much from each other, and the kind containing the largest quantity of yeast [koji] is considered the best. The usual mode is, after soaking soy beans in water for about two hours, to put them into a suitable vessel and steam them; then, after mixing them with salt and yeast (the proportions are one *to* of beans to three *sho* of best salt and one *to* of yeast) [10 *sho* = 1 *to* = 18 liters = 4.76 gallons], they are removed to wooden plates; the next step is to evenly mix the ingredients. The liquid is then put into casks, and is then left untouched for upwards of a year.

“Another method.—Three *to* of yellow soy beans are soaked in water for a night; then they are boiled in a large kettle, and as soon as the water in the kettle has evaporated

and the beans show a reddish yellow colour, they are removed to a mortar and pounded; they are then placed on mats. When they are thoroughly cooled, they are shaped into balls, as large as hand balls, cut with a knife into flat pieces about an eighth of an inch thick, and placed on mats shaped like scales of fish. As soon as mould appears upon them, they are taken, crushed into small pieces, and exposed to the rays of the sun for a day or two. When nearly dry, one and a fifth *to* of salt and a suitable quantity of water are added to them, and the whole is pounded in a mortar. After preserving in a cask for twenty or thirty days, it is again pounded thoroughly, and then left in a cask for a month or two, and sometimes longer, when the preceding process will be repeated. Finally, if it is sealed up in casks, it will never deteriorate. It is in prime condition when three years old.

“Use.—In Japan miso is one of the most necessary articles of food, and has been used from time immemorial, both by nobles and men of inferior rank. It is made into a soup, and is one of the courses served up as a principal article of every day diet. The mode of making it into soup is, in the first place, to rub it around an earthenware bowl [suribachi], into which a suitable quantity of water has been poured; it is then filtered through a sieve called *misokoshi*, and vegetables according to taste are added to it; the whole is then boiled and served up. The quantity of water to be used depends on the taste of those who have to eat it. Miso is used to give an agreeable flavour by mixing it with other food, and is then called *Miso-ai* [Miso-ae]. There are many other preparations of miso mixed with various condiments, namely, *Sansho-miso* (miso and Japanese pepper), *Shogamiso* (miso with ginger), *Wasabimiso*, *Tagarashimiso*, *Gomamiso* (miso with horseradish, chillies, and sesame), *Keshi-miso* (miso with poppy seeds), *Katsuwo-miso* (miso with Katsuwo [Katsuo is oceanic bonito]), &c.

The uses of miso are innumerable, and it is most nutritious food.

Analysis, by Komaba Agricultural College:—Red Miso, from Osaka—Water 50.40%, fibre 8.25%, ashes [ash] (containing nearly 12 per cent. of common salt) 12.50%, sugar 0.61%, albumen 10.08%, soluble carbohydrates 18.16%. Total 100.00%.

Note: This is the earliest English-language document seen (Dec. 2008) that contains the word *misokoshi*. Address: England.

255. Cohn, Ferdinand. 1884. Ueber Schimmelpilze als Gaehrungserreger [On molds as instigators of fermentation]. *Jahres-Bericht der Schlesischen Gesellschaft fuer Vaterlaendische Cultur (Breslau/Wroclaw)* 61:226-30. For the year 1883. [Ger]

• **Summary:** In this lecture, presented on 31 May 1883, Prof. Cohn named the species *Aspergillus oryzae*. A synonym is *Eurotium oryzae* Ahlburg. Thom and Raper (1945, p. 261) note that “The name *E. oryzae* with an

incomplete description for the saké organism was published by Korschelt, in Dingler's Polytechnisches Journal 230:330. 1878, as taken from a letter from 'Herr Ahlburg.'"

On page 227 Cohn notes: "In the winter of 1883 I obtained some grains of tane kosi [sic, tané koji] (the so-called mother-yeast of the Japanese rice wine, saké) from Shinkizi [Shinkiji] Nagai, a native of Tokyo who was staying in Breslau as a student of agriculture. I prevailed upon this intelligent and industrious young man, under my supervision, to make sake using the tané koji and methods he had learned in Japan. After a number of unsuccessful trials, we met with excellent success. The Japanese methods are, although used for hundreds of years, so rational, that they can hardly be improved based on a scientific understanding of the process. Tane Kosi are grains of rice which are overgrown with the mycelium and spore bodies (*Fruchttraegern*) of *Aspergillus oryzae*, the splendid rice mold with its greenish-yellow conidia."

"Another fermentation product made by *Aspergillus oryzae* is the well-known soy sauce (*Sojasauce*). This was also prepared at our institute by Mr. Shinkizi Nagai using the Japanese method. This soy sauce was prepared from soybeans (*Sojabohne, Dolichos Soja*) that have recently been cultivated here. Soybeans are different from our typical beans in that they have a very low content of starch and are very rich in fat and 'Cheese-stuff' (literally *Kaesestoff*, Legumin, vegetable casein) [i.e. protein]. Because of this fact, the soybean is used to make cheese [tofu] in Japan."

A detailed description of the process for making soy sauce is then given.

Breslau is the German name for Wroclaw, a city in southwest Poland. Address: Prof., Dr.

256. Hanausek, Thomas Franz. 1884. Die Nahrungs- und Genussmittel aus dem Pflanzenreiche: Nach den Grundsätzen der wissenschaftlichen Waarenkunde fuer die Praxis und zum Studium [Foods and food adjuncts (stimulants / enjoyables) from the vegetable kingdom: On the principles of scientific study of food products in practice and theory]. Kassel: Verlag von Theodor Fischer. xiv + 485 p. See p. 99. Incl. 100 illust. and tables. 19 cm. Vol. 5 in the series *Allgemeine Waarenkunde und Rohstofflehre*. [8 soy ref. Ger]

• **Summary:** This book describes how to analyze commercial products (chemically, microscopically, etc.) to determine their composition and to detect adulteration. Chapter III (p. 75-105) is titled "The legumes and their starches" ("*Die Huelsenfruechte und ihre Stärke*"). Section 8 (p. 99-103) within that chapter is titled "The soybean" ("*Die Sojabohne*"). The author discusses soy sauce and how to tell when it is adulterated, miso and how it is made in Japan, and the use of the soybean as a coffee substitute. He gives the weight of seeds according to data from

Haberlandt, lists different varieties according to a classification by Harz (1880, 1885), describes the shape and structure of the seeds, gives a microscopic analysis of the shape of the cells in a cross-section of the seed coat. An illustration (line drawing of a microscopic image, p. 101) shows a "Cross section through the soybean," with the following cell types labeled: pa = palisade cells (*Pallisadenzellen* {*Palisadenzellen*}), s = hour-glass cells (*Säulenzellen*), p and p' = outer and inner parenchyma layer (*Aeusserer und innere Parenchymschicht*), h = hyalin stria (*hyaline Streifen*), gew = seed tissue (*Samengewebe*). Starch-bodies are missing.

Note 1. This is the earliest document seen (Feb. 2002) that describes use of a microscope to examine soybean cells or that contains an illustration of those microscopic cells.

The author presents a chemical analysis and description of the seeds. He notes that no trace of starch can be found in soybeans, a characteristic shared by lupins, one of the infallible criteria for detecting both, and an indication of the high nutritional value of the soybean. Peanut seeds are also discussed on p. 103.

On pages 417-31 Hanausek gives a detailed analysis of coffee substitutes. On page 424, in the subsection on "Coffee substitutes made from the seeds of legumes," he notes that this type is rarely found any more, but that the soybean may be used.

Note 2. Under the term "Genussmittel" (food adjuncts {stimulants / enjoyables}), Hanausek includes: Tobacco, tea, cocoa, coffee, kola nuts, cacao, Guarana* (paste from the seeds of the shrub or bush *Paullinia sorbilis* Mart. (*P. Cupana* Kth.) used in north Brazil), Tschan (Chan)* (made from the fruits of a type of sage plant in Guatemala), betel nuts, opium, and hashish. (* = not in a German dictionary).

Hanausek lived 1852-1918. Address: Krems an der Donau (Krems on the Danube), Austria.

257. *Gardeners' Chronicle* (London). 1885. Japanese food vegetable products. 23:51. Jan. 10. New Series.

• **Summary:** This is the conclusion of an article begun in the 20 Dec. 1884 issue. "Soy. Two preparations from the Soy Bean (*Glycine soja*), besides that already referred to, deserve mentioning—namely, miso, a fermented substance; and shoyu, or soy itself. The first is a curious preparation, described as follows:—There are many ways of making miso, differing very little from each other; the kind containing the largest quantity of yeast is considered the best. The usual mode is after soaking Soy Beans in water for about two hours to put them into a suitable vessel and steam them; then, after mixing them with salt and yeast, they are removed to wooden plates; then the ingredients are very evenly mixed, the liquid is put into casks, and is then left untouched for upwards of a year. Another method is to soak a quantity of yellow Soy Beans in water for a night, then boil them in a large kettle, and as soon as the water in

the kettle has evaporated, and the beans show a reddish-yellow colour, they are removed to a mortar and pounded, after which they are placed on mats. When they are thoroughly cooled they are shaped into balls as large as hand-balls, cut with a knife into flat pieces about an eighth of an inch thick, and placed on mats shaped like scales of fish. As soon as mould appears upon them they are taken, crushed into small pieces, and exposed to the rays of the sun for a day or two. When nearly dry, salt and water are added to them, and the whole is pounded in a mortar and then left in a cask for a month or two, and sometimes longer, when the preceding process will be repeated. Finally, if it is sealed up in casks it will never deteriorate. It is in prime condition when three years old. It forms one of the most necessary articles of food in Japan, and has been used from time immemorial, both by nobles and men of inferior rank. It is made into a soup, and is one of the courses served up as a principal article of everyday diet. The mode of preparing the soup is to rub the miso around an earthen bowl, into which a suitable quantity of water has been poured. It is then filtered through a sieve, and vegetables added according to taste; the whole is then boiled and served up. Miso is also used to give an agreeable flavour by mixing it with other food, and it is likewise mixed with condiments, as Japanese Pepper, Ginger, Horse-Radish, Chillies, Sesame, Poppy seeds, &c.

“Soy or *Shoyu*, is perhaps the chief product of the Soy Bean. It consists of a mixture of these Beans, Wheat, salt, and water. The mode of preparing it is to thoroughly boil, after washing in a cask with water, fifty parts of Beans, and to parch about fifty parts of Wheat in a pan for a little while and thoroughly boil it, after grinding on a stone mill: when these two substances are mixed together and kept in a warm room for about four days, the substances are converted into a yellow flour-like matter: this is yeast. This yeast is then thrown into a mixture of salt and water, and afterwards thoroughly cooled, then boiled in a large kettle, and stirred with a Bamboo instrument twice a day in summer, and once a day in winter. After the lapse of three years, the sediment is poured into a bag then put into a small tub and submitted to strong pressure by means of a bar at the end of which hangs a heavy weight. The fluid expressed is poured into a kettle and submitted to a heat of not more than 80°; it is again removed to a large tub and set away for a night, when it becomes a deep black colour, and acquires a very delicious taste.

“Soy is one of the most valuable foods, and is in daily use; mixed with several kinds of food it imparts to them a delicious flavour. It is universally liked, and is really indispensable in the Japanese kitchen. The quantity annually consumed in Japan is extremely large, and of late years the article has been exported.”

258. *Tropical Agriculturist (Ceylon)*. 1885. Japanese vegetable food products. 4:695-96. March 2. [1 ref]

• **Summary:** This is a reprint of a two-part article originally published in *Gardeners' Chronicle* (London; 20 Dec. 1884 and 10 Jan. 1885). It describes: Fruit of the maidenhair tree (*Ginkgo biloba*), *Langenaria vulgaris* or kau-pio [kanpyo, kampo?], *Agaricus campestris* or Shii-take [shiitake] mushrooms, agar-agar or kanten, frozen kouniakou [konnyaku], katakuri starch, kuzu starch, warabi starch, umiboshi [umeboshi]: salted and dried plums, kasadyuke (kasuzuke, made from white melons), and two preparations from the Soy Bean: miso, and shoyu or soy itself. For details, see the original articles. Address: London.

259. Schumacher-Kopp, E. 1885. Leguminose Maggi [Leguminous Maggi]. *Chemiker-Zeitung* 9(27):487. April 1. [Ger]

• **Summary:** After 18 months of research, four professors (Schuler, Miescher, Schulze, and Barbieri) and Maggi & Co., owner of several large commercial mills in Kempthal and Zurich, Switzerland, have succeeded in making a flour from legumes. It is nutritious, tasty, can be prepared quickly, and is inexpensive. Dr. Schuler has written a very interesting report on the subject. “The countless investigations have resulted in 9 varieties of the product. The flavor of these varies greatly. They sometimes contain the mucilage from lentils (*Linsen*), chick-peas (*Kichererbsen*), barley, or oats, or of meat extract.

A table shows the composition (percentage protein, carbohydrate, and fat) of nine different varieties of legume flour. The first 3 varieties contain 1.22 to 1.75% fat and 17.17 to 23.21% protein; the last 3 contain 12.63 to 14.28% fat and 20.21 to 25.90% protein.

Soy is not mentioned in the article. However E. Schulze, who is listed in this article as a Professor of Chemistry in Zurich, published 8 studies on soybeans between 1889 and 1910. And Maggi & Co. is known to have done early research on soybeans. In 1907 it was reported: “Recently the firm of Jul. Maggi in Kempthal [Switzerland] has begun to make and market a type of miso.” Address: Dr., Lucerne, Switzerland.

260. Lipskii, A.A. 1885. Kitaiskii bob soya (*Soja hispida*) i ego pishchevoe znachenie [The soja bean (*Soja hispida*) and its nutritional value, or effect on digestion]. *Vrach (Doctor) (St. Petersburg, Russia)* 6(40):657-59. Oct. 3. [5 ref. Rus]

• **Summary:** Extensive literature has been published about the agricultural science of soybeans (by Haberlandt, Sovetov, Skachkov, Organov, Giliarianskii, Podoba, Chernoglazov, Iankovskii, etc.). In Russia, Podoba was the first person to work with soybeans; he received the seeds from Haberlandt of Vienna.

A.V. Sovetov, professor of agriculture at the University of St. Petersburg, wrote extensively about the economic and nutritional importance of soybeans, including in the journal *Vol'no Ekonomicheskago Obschestva*. He also sent out

samples of soybean seeds. In 1883 V.P. Giliaranskii, influenced by Il'in, wrote a monograph [48 pages] on the soybean. It seems that P.A. [L.A.?] Chernoglazov was the first person in Russia to prepare bread and sauces from soybeans, then to feed them to his co-workers. Theoretical yield measurements by Podoba agree with those of Haberlandt. Podoba states that soybean plants, when used as green forage for livestock, exceed the nutritional value of other plants, including clover and alfalfa.

In the laboratory of A.P. Dobroslavin, Lipskii formulated experiments to test the nutritional value of soybeans. In 1881 Lipskii received soybeans for analysis from I.G. Podoba. Lipskii then gives background information on the soybean plant (mostly structure, varieties, etc.—no history) and methods of preparing foods from soybeans. Chernoglazov then outlines the preparation of miso.

A table (p. 659) shows that two people (a doctor and a lab worker) were fed various foods and liquids. In the upper half, the left column shows the foods or nutrients consumed (soy flour, dry flour, nitrogen, fats, ash, water, tea or broth of bilberries / whortleberries); the right column shows the amount of each consumed. The lower half of the table the “output” of the two people (urine, specific gravity of urine, nitrogen in urine, sulfur in excrement, dry mass of excrement, nitrogen in excrement, percentage of nitrogen in dry excrement, fat in excrement, percentage of ash in dry excrement). The last two lines are contents that were not digested: Nitrogen, fat.

Footnote 5 (p. 658) mentions exhibitions of dried plants, including soybeans and other beans, at a museum in St. Petersburg, Russia.

Footnote 7 (p. 658) states that the label on a container of coffee, made in Russia, fails to reveal that this coffee is actually made from soybeans.

Nikitin (1900) states that Lipskii found, in his investigations on the digestibility of soybeans, that in a diet consisting exclusively of mashed soybeans, 19.5% of the nitrogen and 19.2% of the fat remained undigested.

Horvath (1927) says that “Lipsky” mentioned use of baking soda for cooking whole dry soybeans. Address: USSR.

261. Dammer, Otto. 1885. *Illustriertes Lexikon der Verfaelschungen und Verunreinigungen der Nahrungs- und Genussmittel... Unter Mitwirkung von Fachgelehrten und Sachsverstaendigen herausgegeben* [Illustrated lexicon of adulterations and contaminations of foods and food adjuncts (stimulants / enjoyables)... Published with the assistance of specialists and experts]. Leipzig, Germany: Verlagsbuchhandlung von J.J. Weber. 1208 p. Illust. 25 cm. [Ger]

• **Summary:** The section on “Coffee” states (p. 396) that the soybean (*die Sojabohne, Dolichos Soya, Soya hispida*) is presently a coffee substitute that is not unimportant, and

according to Count Attems, it is the only type of coffee served to the workers on many estates in Austria. Soybean seeds are yellow, brown, black, shiny, 8-10 mm long, 5-6 mm wide, and they generally contain aleurone grains, among which are also small starches and rather much fat. The *Saulen / Spulen* cells are elongated, with the top and bottom the same except a little thickened. Additional microscopic details of the cells are given. On a dry-weight basis, the soybean contains 31.26 to 33.26% protein, and 16.21 to 18.25% fat. In its homeland (Japan, China, and India) the soybean is widely used as food and in salty seasonings. A Japanese preparation is called Miszo [sic, miso].

Also discusses: Oilseed meals and cakes with many illustrations (p. 671-85): Linseed meal, rapeseed meal, Leindotter meal (camelina, cameline), poppyseed meal, hempseed meal, beech-nut cake. Ground-nut cake, cottonseed cake, sesame cake, palm kernel cake, coconut cake, sunflowerseed cake, Madia cake, Niger cake, candlenut cake. Soy is not mentioned at oilseeds, cakes or meals. Sesame oil (p. 830, 672).

Note 1. Otto Dammer lived 1839-1916.

Note 2. Moeller (1905, p. xiii) says: Vol. 1 is 1885. Vol. II, with five color plates and 734 in-text illustrations, is 1887. Address: Germany.

262. Mene, Édouard. 1885. *Des productions végétales du Japon* [The vegetable products of Japan]. Paris: Au Siège de la Société Nationale d'Acclimatation. 592 p. Index. 24 cm. [34 soy ref. Fre]

• **Summary:** The title page states in small letters: *Extrait du Bulletin de la Société Nationale d'Acclimatation*, indicating that much of the material in this book is based on articles previously published in this French-language Bulletin. However many other early books on Japanese agriculture have also been consulted and are carefully cited.

In the Introduction, the author explains that he was appointed by the Society for Acclimatization to prepare this report on the vegetable products of Japan which had been exhibited at the Universal Exposition of Paris in 1878—in two parts. Those displayed by the Japanese firm Trocadero, and those displayed in the galleries of the palace at Champ-de-Mars. The author and many others were deeply impressed by this exhibition.

Grains (class 69, p. 31): Wheat or rice are mixed with beans or peas and fermented to make shoyu and miso. Shoyu is one of the most widely used condiments in Japanese cuisine. The method of production is described briefly. Among the condiments displayed in class 74 were a number of flasks of shoyu from Tokyo.

Legumes (p. 40-47): Discusses soybeans, tofu, azuki beans (*Phaseolus radiatus* var. *subtrilobata*, p. 42-44; incl. yayanari, red, white, black, and yellowish azuki, Dainagon azuki, azuki flour, an, yokan), shoyu, soybeans (*Pois*

oléagineux, Soja hispida, p. 45-46; incl. Kuro-mame {Black soybeans}, various colors and shapes of dry soybeans {green, yellowish, large yellowish, greenish black, brownish red, white, large red}).

There is also a special, long section on soybeans (*Soja hispida*. *O mame: Daizu*; p. 270-83) and soyfoods. In the Japanese exposition, the display of useful products (*tableau des productions utiles*) designates: No. 24. *Kuro-mame*. Black-seeded soybeans, the size of an average sized haricot bean. No. 25. *Shiro-mame*. White-seeded soybeans, spotted / flecked / speckled / mottled (*tachetées*) with gray. No. 26. *Ao-mame*. Greenish-seeded soybeans. No. 34. *Gankui-mame*. Black-seeded soybeans, flecked with white.

The soybean (*Le Soja*) is cultivated in Japan, India, Ceylon, the Malacca peninsula [today's Malaysia], the Philippine islands, Borneo, Java, the kingdom of Siam, Cochin China, Tongkin (*Tong-King*), and throughout China, primarily in Mongolia and in the provinces of Henan / Honan, Liaoning (*Shenking*), Shandong / Shantung, and Shanxi / Shansi (*Chan-si*).

Note 1. This is the earliest document seen concerning soybeans in Malaysia, or the cultivation of soybeans in Malaysia. This document contains the earliest date seen for soybeans in Malaysia, or the cultivation of soybeans in Malaysia (1885). The source of these soybeans is unknown.

Note 2. This is the earliest document seen concerning soybeans in the Philippines, or the cultivation of soybeans in the Philippines. This document contains the earliest date seen for soybeans in the Philippines, or the cultivation of soybeans in the Philippines (1885). The source of these soybeans is unknown.

Note 3. This is the earliest document seen concerning soybeans in Siam (renamed Thailand in 1938), or the cultivation of soybeans in Siam. This document contains the earliest date seen for soybeans in Siam, or the cultivation of soybeans in Siam (1885). The source of these soybeans is unknown.

The Chinese exposition (class 73) contained samples of all the varieties of soya cultivated in all the provinces of the empire. Nos. 2991 to 3000. Green, white, black, yellow, striped or variegated, and reddish soybeans, provided by the Chinese customs office at Newchwang. Nos. 3014-16. Yellow, black, and green soybeans from the customs office at Tientsin. Nos. 3058-61. Yellow, green, and black soybeans from customs at Yantai / Chefoo. No. 3091. Yellow soybean from customs at Chinkiang. Nos. 3013-19. White, red, black, and yellow soybeans from customs at Shanghai. Nos. 3125-28. White, black, red, and green soybeans from customs at Wenzhou / Wenchow. Nos. 3152-56. White, green, and black soybeans from customs at Kao-hsiung (*Takow*).

The soybean is one of the plants most widely used in Japan and China for both food and industrial purposes. As indicated previously, shoyu, miso, and tofu are

indispensable to the Japanese diet. Samples of these products were displayed in the Japanese exhibit in class 74 (condiments and stimulants); they came from Tokyo and from the province of Hizen, mainly from the town of Nagasaki. In the Chinese exhibit, also in class 74, were samples of (*soye*) or (*soya*) which are similar to Japanese shoyu but are called *Chiang-yu* (*Tsiang-yeou*) in China. They were provided by the customs offices at Yantai / Chefoo, Ning-po, Wenzhou / Wenchow, and Canton. For aroma, the Chinese often add star anise, green anise, and orange peel. Chinese soy sauce is made from yellow soybeans (*Houang-téou*).

Note 4. This is the earliest document seen (Jan. 2006) describing a soy sauce made with star anise, green anise, orange peel or other spices or herbs outside of Indonesia.

A detailed description of the method for making Japanese shoyu is given, excerpted from the book *Le Japon à l'Exposition universelle de 1878* [Japan at the Universal Exposition of 1878] (1878, vol. II, p. 124). Additional excerpts concerning shoyu, miso, and tofu are taken from: Simon 1862, Kaempfer 1712, *Bulletin of the Society for Acclimatization* 1880 (p. 248), and Champoin 1866.

In France, Mr. Vilmorin and Dr. Adrien Sicard (of Marseilles), who are both involved with soybean cultivation, have prepared soy cheese (*fromage de Soja*) numerous times. Dr. Sicard has made both the white cheese and the red cheese; the latter is rolled in a powder made by grinding red sandalwood (*santal; Pterocarpus santalinus*), mace, and cinnamon (p. 276).

One of the most important soy products is the oil, which is obtained from the seeds—especially the large yellow soybeans that the Chinese call *Houang-téou*. The Japanese do not make soy oil (*huile de Soja*) but in China manufacture of this product gives rise to considerable commerce. Fremy (1855) found that soybean seeds contain 18% oil. The oil is a drying oil, yellow in color and with a special odor and a taste of dried legumes, similar to that of peas. It is used in cooking and illumination. In China, quite a few soy oil factories are found at Calfond in Henan, at Tsinan in Shantung, and at Tayeurn in Shanxi. But the center of soy oil production in China is Ning-po in Zhejiang / Chekiang. From the port of Ning-po and from a port on the island of *Tcheou-chan* [*Zhoushan?*] a large number of junks, carrying only soy oil, depart. Two other manufacturing centers are Newchwang and Chefoo. There follows a detailed description (p. 276-77) of how soy oil is obtained from soybeans.

Another common use is as soy nuggets (*Chi*) which (according to Stanislas Julien) contain soybeans mixed with ginger and salt. Kiu-tsee is a fermented soy product made in Canton; it contains red rice, soybeans, and the leaves of *Glycosmis citrifolia*. The Chinese also make a pasta and a sort of vermicelli from soybean seeds named *Hou-mi-téou*.

The stems and leaves make excellent forage. Black soybean seeds are often mixed with chopped soybean hay and fed to horses and mules in northern China and Manchuria.

In Japanese and Chinese medicine, black soybean seeds, ground and made into a decoction, are used to combat asthma attacks.

There follows a long history (p. 277-83) of the introduction of the soybean to Europe (starting at the Jardin des Plantes in Paris, in 1740 or 1779) and its acclimatization, based largely on articles from the *Bulletin of the Society for Acclimatization*. It includes a summary of the work of Prof. Haberlandt in central Europe.

Also discusses: Japanese plum trees (*Prunus mume*) and umeboshi salt plums (p. 52-54, 466-67). Sesame seeds and sesame oil (p. 54-55). Amaranths (p. 63-64). Job's tears (*Coix lacryma*; p. 214-15). Kudzu, kuzu powder, and kuzu cloth (*Pueraria Thunbergiana*; p. 283-85). Peanuts and peanut oil (*Arachis hypogaea*, *Tojin-mame*; p. 286-87). Sesame seeds and sesame oil (*Sesamum indicum*, *Goma*; p. 518-20). Hemp and hemp oil (*Cannabis sativa*, *Asa*; p. 558-59). Address: Médecin de la Maison de Santé de Saint-John de Dieu [Paris, France].

263. Welch, Adonijah Strong. 1885. Report on the organization and management of seven agricultural schools in Germany, Belgium, and England. Washington, DC: Government Printing Office. 107 p. See p. 73-77. Made to Hon. George B. Loring, U.S. Commissioner of Agriculture. • **Summary:** The last section is titled "The Royal Agricultural College at Cirencester, England," where the author visited on 8 Feb. 1884. The subsection titled "Work of the laboratory" (p. 73) describes seven types of current original research, including: "7. On the soy bean (*Soja hispida*), its chemical composition and value as a food.

"The following is a detailed account of Prof. Edward Kinch's description and analyses of the soy bean of China. I append his entire report of the results of this interesting investigation, because it not only shows the character of the work done in his laboratory, but indicates that this bean may be profitably grown in some parts of the Western States. Indeed, the same bean was grown on the experimental grounds of the Iowa Agricultural College last year, and showed a very large yield."

Prof. Kinch's report, titled "The Soy bean," states: "This bean, sometimes known as the Japan pea and China bean, is the seed of the *Soja hispida*, Miquel (*Glycine hispida*, Moench; *Dolichos Soja*, Linné; *Glycine Soja*, Jaquin), a plant of the natural order Leguminosae,..." suborder Papilionaceae, and tribe Phaseolæ. Its natural habitat appears to be China and Japan; it also grows in Mongolia and in India, in the Himalayas, and within the last few years it has been cultivated experimentally in several European countries. This bean is worth more than a passing notice, as

it is the vegetable which approaches most nearly in its proximate chemical composition to animal food. This will be seen later on. There are a great number of varieties of the soy bean known, which differ to some extent in the shape, size, and especially in the color of the seed, and in a few minor particulars, but which seem to vary comparatively little in chemical composition. Dr. C.O. Harz has classified the principal varieties as follows:

"Group I.—*S. hispida platycarpa*. 1. *olivacea*. 2. *punctata*. 3. *melanosperma* (a. *vulgans*. b. *nigra*. c. *renisperma*. d. *rubro-cincta*). 4. *platysperma*. 5. *parvula*.

"Group II.—*S. hispida tumida*. 6. *pallida* (Roxburgh). 7. *castanea*. 8. *atrosperma*.

"These names sufficiently indicate the nature of the variety as far as the seed is concerned. The soy bean is extensively cultivated in the north of China, whence it is exported, to the southern provinces; it is here pressed for the sake of its oil and the residual cake largely used as a food for man and beast, and also as a manure.

"In Japan it is known by names signifying the bean, and from it are made not only soy [sauce] but a paste known as *miso*, which is in constant request at nearly every meal, *tofu*, or bean cheese, and other foods used to a less extent. This bean cheese is also well known in China, and is obtained by extracting the legumin from the beans with water and precipitating it with brine. An analysis of it is given below.

"These foods are most valuable additions to the dietary of the Oriental nations, and especially of the Japanese, who use so little animal food; they tend to supply the deficiencies of the staple food, rice, in nitrogenous matter, fat, and also in mineral constituents.

"The Buddhist priests, who are strictly forbidden to use animal food, consume considerable quantities of these beans, principally in the form of *miso*. The soy bean first attracted attention in Europe in 1873, when specimens from Japan, from China, and from India were shown at the Vienna International Exhibition. Dr. Forbes Watson, reporter on the products of India, called attention to it in the Catalogue of the Exhibits of the Indian Museum. Since then numerous experiments have been made on the European Continent on its growth, and also feeding experiments with the bean and its straw on different kinds of domestic animals have been prosecuted. Such experiments have been carried on by Wolling and Wein, at Munich; by Haberlandt, Lehman, Harz, Stahel, Zimmerman, Siewert, Wieski, and others, at various stations in Germany, Austria, and Hungary, and experiments have also been made in France and in Italy.

"The proximate chemical composition of some of the different varieties, grown in different places, is now given and compared with some other foods of vegetable and animal origin."

Table 1, titled "Percentage composition of the soy bean," gives the percentage of six constituents (water, nitrogenous

matter [protein], fat, carbohydrates, fiber, and ash) in seven different types of soy beans: Pale yellow (from Japan, China, Germany &c., India), brown, round black, and long black.

“It has been shown by Levallois (*Comptes-Rendus*) that the soybean contains a special variety of sugar, many of its properties resembling mellitose; this constitutes about 10 per cent, of the soluble carbohydrates. Of the nitrogenous matters nearly all is in the form of albumenoids; a small quantity, about 1 per cent., appears as a peptone-like body, and about one-tenth to two-tenths per cent. is non-albuminoid.”

Table 2, titled “Percentage composition,” compares the percentage content of the six constituents listed above for six foodstuffs: Peas, [common] beans, lupins, lentils, lean beef, and fat mutton.

“These analyses show the greater richness of the soy beans in nitrogenous matter and in fat than the common bean and pea, and that, when the water is equalized, it more nearly approaches meat in proximate composition. The only leguminous seed of common occurrence, which contains more oil than this bean, is the earth-nut or ground-nut, *Arachis hypogaea*, which is now so largely cultivated abroad for its oil and its cake. In order to compare the soy bean straw with hay and with other straws of like nature, the following average analyses are given:

Table 3 (untitled) compares the percentage content of the six constituents listed above for six feeds: Meadow hay, bean straw, pea straw, lentil straw, soy bean straw, soy bean hulls.

“A special variety of *Soja hispida* is cultivated in some parts of Japan as a fodder crop and cut just as the pods are fully formed. The hay made from this is much relished by horses, cattle, and sheep. A sample of a crop grown on the Imperial College of Agriculture Farm, Komaba, Tokiyo, gave on analysis: Water 15.0%, nitrogenous matter 19.8%, fiber 35.9%, ash 6.8%, carbohydrates and fat 22.5%. Total 100.0%.

“It will be seen that this hay exceeds even lentil straw in the amount of nitrogenous matter it contains.” Continued. Address: LL.D., Ames, Iowa.

264. Welch, Adonijah Strong. 1885. Report on the organization and management of seven agricultural schools in Germany, Belgium, and England (Continued—Document part II). Washington, DC: Government Printing Office. 107 p. See p. 73-77. Made to Hon. George B. Loring, U.S. Commissioner of Agriculture.

• **Summary:** Continued from page 76: “The following are means of various analyses made in Japan of food products obtained from the soy bean, and which are largely consumed there:”

Table 4, titled “Percentage composition,” shows the percentage content of the six constituents listed above in

four Japanese food products: White miso, red miso, bean cheese [tofu], and frozen bean cheese [dried frozen tofu].

“The ash of miso consists mainly of common salt, which is added in the process of manufacture.

“The ash of the soy bean was found, as a mean of several samples, to have the following percentage composition. The composition of that of the straw is also given: Table 5 (untitled) lists the percentage composition of each of the following constituents in soy bean ash and soy bean straw ash: Potash, soda, lime, magnesia, ferric oxide, chlorine, phosphoric pentoxide, sulphur trioxide, and silica.

“The crop takes from the soil a large amount of valuable mineral constituents, phosphoric acid and potash, as well as a large amount of nitrogen.

“The results of the German and Austrian experiments show that where temperature is not too low, the result of the harvest as compared with that of ordinary beans or peas is exceedingly satisfactory.

“The kinds most suited for cultivation there are the yellow, brown, round black, and long black varieties, i. e., *pallida*, *castanea*, *atroserma*, and *melanosperma*, especially the first three named. They require a vegetation time of about one hundred and fifty days, during which the average temperature must be about 58° F. (14.3 C.), and number of heat units (the average temperature multiplied by the number of days) [*Wärmesummen*] about 2,100 C. They may be sown the beginning of May and harvested the end of September or even the beginning of October.

“The seeds should not be sown deeply, not more than 1 to 1½ inches deep, and about eighteen plants to the square yard may be left after weeding and thinning out. The plants grow to a small bush about 2½ feet high, and produce pods with two to five seeds. The most suitable soil is a peaty soil, or one containing a good deal of organic matter, and the next most favorable is a calcareous soil. Nitrate of soda has been found to be a good manure for the crop in Germany and also potash salts, especially potassium sulphate. Ammonium sulphate did not give as good a return as the same amount of nitrogen in the form of nitrate; on soils poor in organic matter it would probably be better to supply the nitrogen in some organic combination, such as rape-cake, shoddy, and the like. Phosphoric acid, especially as a dicalcic phosphate was a help on some soils.

“Field experiments made by myself on this crop in Japan showed that wood ashes had a good effect, and that anything like an excess of nitrogen was very harmful to the yield of grain. In that country the plants are often sown on the dividing ridges between the plots of paddy and without any manure. The yield of seed and straw in the German experiments compares very favorably with that of peas and beans grown under the same conditions; from 2,000 to 3,000 pounds of seed and from 5,000 to 10,000 pounds of straw per acre have been obtained.

“Feeding experiments with the produce have been made with pigs, sheep, oxen, and milch cows, and with very good results. The bean is a most excellent addition to other foods, especially such as are deficient in nitrogenous matter and fat. The digestion co-efficients of the nitrogenous matters of the fat and of the non-nitrogenous matter of the soy bean, and also in the cake left after its pressure for oil, closely approximate to 90 in each case. As a mean of two direct experiments with soy bean straw, the digestion coefficients were found to be as follows: Nitrogenous matter 60.8, fat 6.2, fiber 33.6, and non-nitrogenous extractive matters 69.0. The hulls are rather less digestible.

“The albuminoid ratio in the bean is about 1 to 2.3, in the straw 1 to 8.1, in the hulls about 1 to 20, and in the cake 1 to 1.3. An analysis of the cake shows: Water 13.4%, nitrogenous matter 40.3%, fiber 5.5%, carbohydrates 28.1%, fat 7.5%, ash 5.2%. Total: 100.0%.

“In good condition it would be a valuable addition to our feeding cakes, but it is too highly valued in the East to enable it to be imported to any extent at a profit.

“The soy bean plant has considerable power of resisting unfavorable climatic influences, as cold, drought, and wet; and appears to be particularly free from insect attacks, and, indeed, from all parasites; this last, if it continues, is by no means a slight advantage. The soy beans are eagerly bought by the natives of Southern Italy, an almost vegetarian race; that they are easily digested I can speak from experience, having frequently used them on my table, cooked after the manner of haricots. Taking into account the great richness of these beans in valuable food constituents, their easy digestibility, the value of the straw, and the great probability of some variety being able to be acclimatized without great trouble, this *Soja hispida* is worth consideration. The bean would form an exceedingly useful addition to the food of the poorer classes, as a substitute for a portion of the animal food which in the kitchens of the laboring classes is so wastefully cooked. One use it has already found, not altogether to be commended, viz., after roasting, as an adulterant of and substitute for coffee.

“We have procured seeds of several varieties direct from Japan, and of one variety from Germany, and these are now being cultivated in the botanic garden. They were sown rather late, and the month of June has not been favorable to their growth, but some of the varieties promise fairly.”

Address: LL.D., Ames, Iowa.

265. Church, Arthur Henry. 1886. Food-grains of India. London: Published for the Committee of Council on Education by Chapman and Hall, Ltd. 180 p. See p. 140-44. Illust. Index. 27 cm. 35 plates, with Fig. 26 being of the soybean. South Kensington Museum science handbooks. With 23-page supplement, 1901. Reprinted in New Delhi, India in 1983 by Ajay Book Service. [17 ref]

• **Summary:** “The soy-bean. *Glycine Soja*, Sieb. and Zucc. *Synonyms*—*Soja hispida* (Moench.); *Dolichos Soja* (Linn.); *Soja angustifolia* (Miq.). *Hind.* [Hindi]—Bhat, Bhatwan. *Punjab* [Panjabi]—Bhút. *Beng.* [Bengali]—Gari-kulay. *Naga*—Tsu-dza.

“This important bean is the seed of *Glycine Soja*, a small, sub-erect, trifoliate, hairy annual, with pods generally 3 to 4-seeded. It belongs to the natural order Leguminosae, sub-order Papilionaceae, tribe Phaseoleae, and sub-tribe Glycineae; 5 genera are included in this sub-tribe. *Glycine* contains about 12 species, chiefly Australian, but 3 are Indian, namely *G. javanica*, *G. pentaphylla*, and our present species.

“The soy-bean forms a considerable article of food in China and Japan. Since 1873 it has been successfully grown, as an experiment, in some of the warmer parts of Europe. It is widely spread in the outer Himalaya, and tropical regions from Kumaun to Sikkim, and the Khasir, and the Naga Hills to Upper Burma. It is often cultivated, rather largely in Busti and Gorakhpur [in today’s Uttar Pradesh], Patna, and Purniah [Purnea] Districts [both in today’s northeast India].

“This crop is generally grown by itself; the seeds are sown from June to September; the harvesting takes place between November and January. It is consequently a kharif crop. The seeds should be placed at a depth not exceeding 1 to 1½ inch; 18 plants may be left, after weeding and thinning, to the square yard. A peaty soil, or one rich in organic matter, suits the plants best; a calcareous soil is also favourable to its growth. Sulphate of potash is a good manure, nitrogen may be supplied either as nitrate of soda or, in the case of soils poor in organic matter, in the form of rape or mustard cake, but it is rarely needed, while large applications of nitrogenous manure exert a distinctly injurious effect upon the yield of beans. So far as we know, this very important, vigorous, and productive pulse is not attacked by any insect or parasitic fungus.”

A full-page illustration (p. 141) shows the upper part of a soy-bean plant, with flowers and a lengthwise cross section of one of the pods.



“Very few vegetable products are so rich as this bean at once in albuminoids and in fat and oil, the former constituent amounting to 35 per cent., and the latter to 19. The cultivation of the pale large-seeded varieties should be extended.”

A table titled “Composition of soy-beans” (p. 143) shows that the seeds contain 35.3% protein, 18.9% fat, 4.6% ash, 11.0% moisture. “The nutrient-ratio is here about 1:2, while the nutrient-value is 105. Potash forms nearly one-half, and phosphorus-pentoxide one-third of the ash of the soy-bean. Ripe soy-beans require long soaking, preferably in warm water, in order to render them soft.

“In China and Japan three preparations are extensively made from the soy-bean. Soy sauce is the best known of these, but more important are the soy or bean cheeses, and a kind of paste. The beans are sometimes pressed for the sake of the oil they yield; the residual cake forms an extremely rich cattle food, containing as it does 40 per cent. of flesh-formers and 7 per cent. of oil. The soy-bean may also be grown as a fodder plant. If cut just when the pods are fully formed it makes an excellent hay, superior to that of the lentil.”

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the word “cheeses” or the term “bean cheeses” or (by implication) “soy cheeses” to refer to tofu.

Note 2. This is the earliest document seen (Feb. 2004) concerning soybeans in Bengal (and therefore probably in today’s Bangladesh). *Webster’s New Geographical Dictionary* (1988) defines Bengal (earlier Bengal Presidency) as a former province in northeast British India, and now a region encompassing West Bengal, India, and Bangladesh. The capital was Calcutta, located on the Hooghly River about 90 miles from its mouth. Calcutta is now the capital of West Bengal, India. Dhaka (Dacca) is the capital of Bangladesh. Bangladesh was formerly East Bengal (part of India, 1700s-1947), then East Pakistan, 1947-1971. It became Bangladesh in 1971.

This one of the earliest document seen (March 2001) that clearly refers to soybeans growing in Burma, but it is not clear whether these are cultivated or wild soybeans.

Page 127 discusses “The Pea-Nut. *Arachis hypogaea*, L.” Six local vernacular names are given. “This plant is probably of American origin, although it has long been cultivated in India, on the West Coast of Africa, and in many other tropical countries. There is a similar plant, *Voandzeia subterranea* [Bambara groundnut], allied to *Vigna*, which grows under the same conditions.” The composition of pea-nuts (in 100 parts and in 1 pound) is given. “Half the weight of pea-nuts is oil... Pea-nuts, after the greater part of the oil has been extracted by pressure, yield a cake well adapted for feeding cattle.” An excellent full-page illustration (line drawing, p. 126) shows the pea-

nut plant with seeds growing under ground and details of flowers and seeds.

Note 3. This is the earliest document seen (March 2001) that mentions *Voandzeia subterranea*. *Webster’s Third New International Dictionary* has an entry for “voandzeia: [NL, from Malagasy *voandzou*]. A genus of tropical creeping herbs (family Leguminosae) with trifoliolate leaves and small axillary flowers.” We later learn that one species, *Voandzeia subterranea* (L.) Thouras, is called the Bambara groundnut. The Bambara are a Negroid people of Upper Niger.

Note 4. This is the earliest English-language document seen (Oct. 1999) that contains the term “nitrate of soda” (as a fertilizer) in connection with soy-beans. It was later renamed “sodium nitrate.”

This is the earliest document seen (Oct. 2002) that uses the word “kharif” to refer to the rainy season in South Asia. Address: Prof. of Chemistry, Royal Academy of Arts, London.

266. Hepburn, James Curtis. 1886. A Japanese-English and English-Japanese dictionary. 3rd ed. Tokyo: Z.P. Maruya & Co., Limited. Yokohama, Shanghai, Hongkong & Singapore: Kelly & Walsh, Limited. London: Trübner & Co. 962 p. 22 cm.

• **Summary:** “During the fourteen years which have elapsed since the publication of the last edition of this Dictionary [in 1867], the Author has kept it constantly before him, correcting errors, improving and enlarging the definitions, and adding new words and illustrations, according as his time and other important engagements allowed him. But owing to the amazing changes and rapid advancement of the Japanese in every department, he has found it difficult to keep pace with the corresponding advance of the language in the increase of its vocabulary. He has endeavored, however, to collect these words, examine, classify and define them. Many, no doubt, have escaped his notice. Still there is an addition of more than ten thousand words to the Japanese and English part.”

New soy-related definitions in this edition, not found in or changed from the 1867 edition: Aburage: Anything fried in oil or grease, especially fried *tofu*. Amazake: Sweet *sake*, a kind of drink made of fermented rice.

Azuki: A small red bean, *Phaseolus radiatus*. Daizu: A kind of large white bean, *Soja hispida*.

Hiriôzu: A kind of food made of *tôfu* fried in oil.

Kinako: A flour made of beans.

Kirazu: The refuse of beans left in making *tofu* [okara].

Koji: Barm or yeast made by the fermentation of rice or barley in the process of making *sake* or *soy*.

Miso: A kind of sauce made of beans, wheat and salt.

Miso wo suru: To rub miso in a mortar.

Sake: A fermented liquor brewed from rice. Sake wo kamosu: To brew sake. Sake ni yô: To be drunk. Sake no

uye ga warui hito: One who behaves disorderly because of drink. Sake ni oboreru: To be addicted to drink [alcohol].

Shoyu: Soy, a kind of sauce made of fermented wheat and beans. Syn. [Synonym]: Shitaji.

Tamari: Soy, shōyu. Tofu: A kind of food made of beans, bean curd.

Unohana: The *Deutzia scabra*; also refuse of beans from making tofu. Yuba: A kind of food made of beans, the skin of bean curd.

Terms listed unchanged from the 1867 edition include Natto, and Yu-dofu.

No listing is given for: Daitokuji natto, Edamame [Yedamame], Hamanatto, or Okara.

The “English and Japanese dictionary,” which starts on page 771-73, contains the most important English words with numerous examples. Included are: Bean: Mame. Spec. Azuki, sora-mame, daizu, endo, ingen, sasage. Bean pod: Mame no saya. Bean curd: Tōfu.

Soy: Shōyu.

Note 1. This is the earliest English-language document seen (Oct. 2001) that uses the word *Unohana* to refer to okara. Address: M.D., LL.D., Yokohama, Japan.

267. Rein, Johann Justus. 1886. Japan: Nach Reisen und Studien, im Auftrage der Koeniglich Preussischen Regierung dargestellt [Japan: Travels and researches undertaken at the cost of the Prussian government. Vol. II.]. Leipzig, Germany: Verlag von Wilhelm Engelmann. 679 p. See p. 5, 65-70, 123-27, 185, 649. Illust. Indexes (1 German and Latin, 1 Japanese). 2nd ed. 1905. [9 ref. Ger]

• **Summary:** A superb book, showing the high German art of studying other cultures. The many illustrations are either beautiful wood engravings (*Holzschnitte*), real photographs, or actual samples of paper or textiles (glued in). In the chapter on “Food plants” (*Nährpflanzen*), the following is a partial contents of the section on “Pulse or leguminous plants” (*Hülsenfrüchte oder Leguminosen*, p. 65-71):

Introduction to crops cultivated in Japan. 1. The ground-nut and ground-nut oil. 2. The soybean: “Among the pulse of Japan (and not the less of China), the soy-bean ranks first in extent, variety of use, and value; and chemical analyses prove the empirical judgment is well founded. In point of nutriment, the soy-bean is of all vegetables the nearest to meat. It contains nearly two-fifths of its weight in legumin rich in nitrogen, and nearly one-sixth in fat. The soy-bean is to the inhabitants of Japan what their *garbanzos* (chick-peas) are to the Spanish, and their *feijao preto* (black beans) to the Brazilians. The author then describes the characteristics of the soy-bean, the work of Haberlandt with soy-beans in Austria, and the yields that he and his co-workers obtained.

“In Japan the varieties of soy-bean are distinguished—according to colour, as white (more properly yellowish), black, brownish red, green, and spotted; according to

duration of growth [maturity] as early-ripening, middle-ripening, and late-ripening; according to form, as spherical, ellipsoidal, kidney-shaped, and compressed laterally; and according to use, as to those which serve primarily in making Shōyu (soy), Tōfu (bean-cheese), and Miso (a sort of sauce), and those eaten in any plain shape.”

Soy-bean varieties in Japan include: 1. “White (pea-yellow) soy-beans, Japanese Shiro-mame or Haku-daidzu. To this division belongs an early-ripening sort with very small seeds, called Goguwatsu-mame [Go-gatsu], or ‘five-months-kind,’ because it ripens in the fifth month of the old Japanese calendar, our July; also another small-seeded, early-ripening variety, the Wase-mame or Natsu-mame, that is, early and summer-bean. These two are also called Tōfu-mame, because they are used chiefly in making Tōfu.

Another sort serves to produce Miso. It is called Nakate-mame, ‘middle-late bean,’ its time of maturity occurring half-way between that of the early and late kinds. Its seeds are round and somewhat larger. The late ripening varieties, Okute-mame (late-bean), Maru-mame (bullet-bean), and Teppō-mame (gun-bean), or Aki-mame (autumn-bean) have, as their names indicate, mostly bullet-shaped seeds, which become harder and larger than the early ones. The variety last named is used in making Shōyu, while Maru-mame is valuable as horse-feed.

2. Black soy-beans, Japanese Kuro-mame or Koku-daidzu. These are eaten boiled with sugar, as an entrée, or as a relish to rice. There is a middle-late sub-species, with round, elliptical seeds, Kuro-mame, in short, and another like it with big, bullet-shaped beans is called Kuro-teppō-mame. And again there is a late-ripening sort with flat, elliptical seeds under several names.

3. Brown soy-beans, Japanese Katsu-daizu (thirsty soy-bean) are much less grown than the white and black sub-species, and are used like the latter. They are distinguished as Aka-mame, red soy-beans, round, reddish-brown in colour, in different varieties, and Cha-mame, tea beans, three light-brown sorts of small extent and significance.

4. Greenish or bluish green soy-beans, Japanese Ao-mame or Sei-daizu, are eaten mostly boiled and with sugar, like the black and brown-red varieties. And, with the brownish sorts, they are much less widely grown than the black and yellowish. The Japanese distinguish the following sub-species of Aō-mame [sic, Ao-mame]:—(a) Sei-hito,—epidermis green, inside a whitish yellow. (b) Nikuri-sei,—greenish throughout. Both sub-varieties run from roundish-ellipsoidal to a bullet roundness, are of medium size, and remind one of green peas. (c) Kage-mame, with pale green, round beans. 5. Speckled soy-beans, Japanese Fui-ri-mame or Han-daidzu. This group is not important. Its cultivation is confined to a small area, in a few provinces. Its sub-varieties are known as:—(a) Kuro-kura-kake-mame, with a black spot on the saddle (eye), otherwise greenish; flat and with the outline of an egg. (b) Aka-kura-kake-mame, with a

brown spot on the saddle (eye), otherwise yellowish-green, flat and drawn out long. (c) Furi-mame or Udzura-mame, speckled or spotted soy-bean, yellowish-green with many dark flecks. A rare variety, grown only in a few places, especially in Harima.

“Early-ripening soy-beans are sown as early as April in Southern Japan, in Central Japan during May. Those that ripen in autumn need much more warmth, and are sown, as a rule, one month later... Late-ripening Daidzu is also a favourite for planting along the edge of fields and on the new-built dykes of rice-fields.”

“At the end of his above-mentioned treatise, Haberlandt summed up in five noteworthy propositions, the results of his experiments with the soy-bean and of its chemical analysis. His conclusions are as follows:

“(a) The acclimatization of the early-ripening sorts, particularly those with yellow and reddish brown seeds, appeared to have fully succeeded in Central Europe.

“(b) The seeds obtained were larger, heavier, and handsomer than those from Eastern Asia, the chemical composition, however, remaining unchanged.

“(c) The soy-plant resists light spring frosts better than our young beans, and endures greater dryness in summer than most leguminous plants, though otherwise much like other kinds of beans.

“(d) It is distinguished by heavy crops, besides furnishing, in its stems and leaves, either green or dried, a nourishing feed, of which cattle are very fond.

“(e) In their high percentage of protein and fat, they far excel all other pulse in nutritive quality; and when properly prepared are second to none in flavour.

“After such favourable judgments, it might have been expected that the soy-bean, at least in the warmer regions of the Austro-Hungarian monarchy, would soon become popular and generally cultivated. The result, however, was quite otherwise. The hopes which he had aroused in behalf of this plant seem to have disappeared with Haberlandt, who died in 1878.

3. Azuki beans (many varieties are named and described).

Two tables (p. 73-74) show the following: (1) Analysis of 10 different numbered samples of soybeans, empty pods, and straw and leaves. Eight are from Haberlandt's book *Die Sojabohne* [The Soybean] (1878), two are from Caplan, and one each from Mach, Senff, Levallois, and Kinch. (2) Comparative composition of 9 different legumes, including soybeans, azuki beans, common peas, broad beans / faba beans, lentils, yellow lupins, and peanuts. The soybean has by far the most crude protein, is second in fat (after peanuts), and is average in (minerals).

Foods made from soybeans (p. 123-27): Shoyu (*Shôyû*, *die japanische Bohnensauce*, *auch Soja*). Miso (made with rice koji). Tofu (*Tôfu*, *Bohnenkäse*), incl. dried-frozen tofu (*Kori-tôfu*, *gefrorener oder Eis-Tôfu*).

“Kori-tôfu, frozen or ice-Tôfu, is the spongy, horn-like substance that remains when common Tôfu is allowed to freeze and then thawed and dried in the sun, thus getting rid of most of its water. By Yuba [Yuba] is meant a third preparation, consisting of brownish, tough skins (*Häuten*), made by boiling the dissolved legumine of the Tôfu-process, with the addition of some wood-ashes, and then taking away in succession the skins that rise” (p. 126-27; see Rein 1889).

Note 1. This is the earliest German-language document seen (Oct. 2008) that contains the word Yuba.

The section on “Oil plants and their products” (p. 176-89) gives details on 13 plants and the oil obtained from them, including: 1. Rapeseed oil. 2. Mustard oil. 3. Camellia oil. 4. Cottonseed oil. 5. Peanut oil. 6. Sesame oil. 7. Perilla oil (*Perilla ocymoides*). 11. Hempseed oil. Soybean oil is not one of these. However a table (p. 185) gives the average composition of various Japanese oilseeds (Source: E. Wolff et al.; Ollech 1884): Rapeseed, peanuts, cottonseed, sesame (brown and white), hemp seeds, shelled beech-nuts, and soybeans.

Note 2. Volume 1 was published in 1881. The title of volume 2 is Land-und Forstwirtschaft, Industrie und Handel. Johann Justus Rein lived 1835-1918.

Note 3. This is the earliest German-language document seen (Feb. 2004) that uses the term “kori-tôfu,” or “gefrorener Tôfu,” or “Eis Tôfu” to refer to dried-frozen tofu.

Note 4. Also discusses: Ame, midzu-ame, and barley malt syrup (p. 121-22). Fu, or baked wheat gluten cakes. Hemp, hempseed, and hempseed oil (p. 88, 177, 184-85). Kudzu (p. 75, 199, 217). Peanuts and peanut oil (p. 176-81, 185). Sea-weeds—especially marine algae (p. 93-96). Sesame seeds and oil (p. 88, 176-78, 181-82, 185). Address: Prof. of Geography, Univ. of Bonn, Germany.

268. Kellner, O.J.; Mori, Y[ôtârô]. 1887. Beitrage zur Kenntnis der Ernaehrung der Japaner [Contributions to an understanding of the nutrition of Japanese]. *Mittheilungen der Deutschen Gesellschaft fuer Natur- und Voelkerkunde Ostasiens in Tokio (Yokohama)* 4(37):305-21. Aug. [37 ref. Ger]

• **Summary:** *Vegetarian Messenger* (May 1888, p. 127-28) states that the staple diet of the Japanese “is almost wholly Vegetarian... As to beef, however (there is no mutton in Japan), there can be no question that its consumption is very small. In 1882, only 36,288 beasts were slaughtered, or about one kilogramme of meat per head of population, and it must be borne in mind that a large consumption takes place at the open ports amongst Europeans, and in the proximity of vessels... It would appear that the flesh of mammals is almost entirely excluded from that diet.” Address: Tokyo.

269. Kellner, O.J. 1887. Zusammensetzung Japanischer landwirtschaftlicher und technischer Producte und Materialien [Composition of Japanese agricultural and technical products and materials]. *Mittheilungen der Deutschen Gesellschaft fuer Natur- und Voelkerkunde Ostasiens in Tokio (Yokohama)* 4(35):205-22. Sept. See p. 205, 208-09. [Ger]

• **Summary:** The introduction (p. 1) contains a list of publications on agricultural chemistry and chemical nutritional physiology published by this laboratory under Dr. Kellner's direction. These include investigations of seeds, hay, straw, manures, and technical products (alcoholic drinks and shoyu).

A large table (p. 8, probably based on Kellner's research) gives the German name, botanical name, Japanese name, and nutritional composition of 12 leguminous seeds and oilseeds (on a dry-weight basis, plus their ash), including soybeans (*Sojabohne*, *Soja hispida*, *daizu*), shelled peanuts (*Erdnuss*, *Arachis hypogaea*, *Nankin mame*), and sesame seeds (*Sesam*, *Sesamum orientale*, *goma*).

A discussion of the soybean (p. 209) notes that it is widely cultivated in Japan and also used to make a variety of other products that resemble those made from milk. Soybeans are not often consumed directly, but are used in the preparation of tofu (*Bohnenkäse*), miso, and shoyu sauce. A small table gives the nutritional composition of three additional soybean varieties that are used for shoyu production. They all contain less protein and more fat than the soybean from the previous large table.

Another large table (p. 215) gives the German name, botanical name, Japanese name, and nutritional composition of 12 plants purchased at a market in Tokyo, including: kuzu (-, *Pueraria Thunbergiana*, *kudzu*), peanuts (*Erdnuss*, *Arachis hypogaea*, *Tojin-mame*), and soybeans (*Sojabohne*, *Soja hispida*, *kari mame*). The soybeans contain 13.67% water. Their dry matter contains 18.11% raw protein, 3.07% ether extract [crude oil], 39.16% crude fiber, etc.

Other large tables gives the composition of kudzu (p. 217), kombu (*Laminaria japonica*, p. 219), okara (*Tofukuchen*, *Tofurückstände*, p. 221), and various alcoholic beverages (p. 221, including sake {made from koji}, mirin, shirosake (white sake), white Kofu wine, and Sakurada beer brewed in Tokyo). A small table (p. 221) gives a nutritional analysis of three samples of shoyu, including the specific gravity (density relative to water), dry matter, organic matter, ash, and acid (as acetic acid). Address: PhD, Tokyo.

270. Tawara, R. 1887. Nihon shoku no chôsa (Zen kôno tsuzuki). Shoku sen chôsa [Investigation of Japanese foods. Part II]. *Tokyo Kagaku Kaishi (J. of the Tokyo Chemical Society)* 8:53-76, 77-101. [Jap]

• **Summary:** Discusses miso, natto, tofu, and yuba.

271. Hepburn, James C. 1887. A Japanese-English and English-Japanese dictionary. Abridged by the author. Second edition. Revised and enlarged. Tokyo: Z.P. Maruya & Co., Limited. Yokohama: Kelly & Walsh, Limited. London: Truebner & Co. vi + 330 + 962 p. 16 cm.

• **Summary:** James Curtis Hepburn lived 1815-1911. Address: M.D., LL.D., Tokyo, Japan.

272. Smithsonian Institution Board of Regents. 1887. Annual report of the Board of Regents of the Smithsonian Institution. Part II. Washington, DC: The Institution. xviii + 771 p. See p. 73-74. Illust. Index.

• **Summary:** Part II is "United States National Museum." Otis T. Mason is curator of this museum (p. 63). Under "Report of the Department of Ethnology," accessions are listed by country. Under "Japan," is a list of 304 "Japanese articles used chiefly in the former times. (Following mainly Dr. Klemm's classification, Smithsonian Report, 1873.)." Both the Japanese name of these items and a translation of that name are enumerated. These include various kitchen utensils:

"113. Saji, wooden spoon... 125. Suribachi, a bowl for rubbing Miso, (fermented mixture of soy beans, wheat, and salt)... Misokoshi, a [bamboo] sieve for filtering miso. 154. Misoshiru wan, Miso soup bowl. 155. Hira, flat wooden bowl for fish and vegetables... 167. Shoyutsugi, Shoyu pourer... 182. Misoshiruwan (see No. 154)." Address: Rev. and author [England].

273. Kellner, O.J. 1888. Researches on the composition and digestibility of Japanese feeding stuffs. *Bulletin of the College of Agriculture, Tokyo Imperial University* 1(2):1-45. July. See p. 25-29, 39-45. [3 ref. Eng]

• **Summary:** Section "V. Hay of soy beans (karimame)" (p. 25-29) describes experiments feeding soy bean hay to sheep (rams). "This hay is considered the best coarse fodder in this country. It is usually cured, when the pods have developed their normal size but the leaves are still green. A specimen of such hay was examined in 1883 by Mr. *M. Ota*."

In part "II. Soy bean (daizu)" (p. 39-45), Kellner notes: "Although the soy beans are somewhat expensive owing to their principal utilization as human food (tofu, miso and shoyu), it may happen that small proportions of them are resorted to in the feeding of the live-stock, for the purpose of supplementing the protein of a ration otherwise too poor in that nutrient." Soy beans, apparently raw, were fed to sheep. Feces ejected, water drunk, and live weights were measured. The article concluded: "The specimen of soy beans examined by us contains the following proportions of digestible nutrients, percent of the dry matter: Crude protein 34.30, fat 18.25, fiber 9.09; nitrogen-free extract 19.65; the last 2 total 28.74.

“Of all raw vegetable products, earth nuts perhaps excepted, the soy beans are the richest in the most valuable nutrients, protein and fat, and contain them in a highly digestible form.”

Note 1. This is the earliest English-language document seen (April 2008) that uses the term “human food” in connection with soy beans.

Note 2. This is the earliest English-language document seen (Aug. 2003) that contains the term “crude protein” (or “crude-protein” or “crude proteins”) (one of two documents). Address: Dr., Prof. of Agricultural Chemistry, Imperial College of Agriculture and Dendrology, Komaba, Tokyo, Japan.

274. Tsuboi, Jirô. 1888. Miso no gan chitsubutsu [Nitrogenous matter of miso]. *Tokyo Igakkai Zasshi (J. of the Tokyo Medical Society)* 2(18):952-54. Sept. [Jap]*

• **Summary:** The author took 2,508 gm of miso powder (*miso-ko*), added 50 cc of 80% alcohol, and boiled it for 3-2 minutes. He put on a wooden lid or stopper and kept it in a warm water bath at 60°C for several hours. Then he filtered it, added 25 cc of water to the remaining solids, extracted the liquid, and made that extract more concentrated by putting it in a warm water bath. He added oxalic acid (*shû-san*) and evaporated it dry. He then removed the dark brown substances remaining, measured the nitrogen. He calculated the nitrogen extract (*ekisu-sei chisso*) and found that it was 0.204%, while the total nitrogen was 1.158%. Therefore the nitrogen in miso is found mostly in the protein and the amount of nitrogen in the extract (*ekisu-bun*) is very small. The *ekisu-sei chisso* is 17.616% of the total nitrogen. (Tô I Kai 2, 952-954 [Sugi]).

275. Egasse, M. 1888. Le soja et ses applications économiques et thérapeutiques: Matière médicale et thérapeutique [Soja and its economic and therapeutic applications: Medical and therapeutic subject-matter]. *Bulletin General de Therapeutique Medicale, Chirurgicale, Obstetricale et Pharmaceutique* 115:433-48. [28 ref. Fre]

• **Summary:** This is a review of the literature, especially the use of soy in diabetic diets. The author was one of the first Westerners to suggest the therapeutic use of soybeans in diabetic diets. Illustrations show: (1) A soy bean plant (from Vilmorin 1883, p. 434). (2) Two views of a soy bean and a cross section of soy bean seed (both from Blondel, p. 435). Discusses (with 11 tables) the work of Haberlandt in Austria-Hungary, Steuff in Germany, Schroeder (a chemist) in Napagedl [in Mähren / Moravia, a region in today's central Czech Republic], Capan [sic, Caplan] in Vienna, Pellet in France, P. Muntz, A. Levallois, Stingl and Morawski, E. Kaempfer, Eug. Simon, Champion, L'hôte and Champion, Mr. Lecerf, Mr. Dujardin-Beaumetz and Mr. Bourdin at Reims (soy bread), and Mr. Lailleux in Algeria.

Blondel (1888) reports the absence of starch in all parts of the soybean seed (p. 435).

“Soybeans are used above all to prepare foods: in Japan, miso and shoyu (*le soojû*), in China an imitation of milk (*une imitation du lait* [soymilk]) and a cheese (*un fromage* [tofu]) greatly appreciated by the common people” (p. 441).

“Throughout China, soybeans (*les graines du soja*) are also used to prepare a milklike / lacteal emulsion (*une émulsion leiteuse*) which replaces milk and which is obtained by crushing the seeds, soaking them in water, and simply passing the liquid through a fine sieve. The [soy] milk, this liquor (*liqueur*), only looks like [dairy] milk, but since [dairy] milk is extremely rare, this liquor supplements the milk [i.e., soymilk supplements dairy milk] from the alimentary point of view” (p. 443). Note: This is the earliest French-language document seen (Oct. 2003) that uses the term *une imitation du lait* or *une émulsion leiteuse* to refer to soymilk.

“The applications of soybean seeds for the feeding of diabetics is not numerous. Yet we know, via an oral communication from Mr. Lailleux, former intern at the hospital in Algiers, that a certain number of diabetic Arabs under treatment at the hospital of Dey, in Algiers, have seen, under the influence of a dietary regimen based on soybean pap, that not only did the content of sugar in their urine diminish by a considerable proportion, but also the condition of their sores was improved, a condition which like all of its type had resisted other treatments employed. If this fact can be verified again, either with soy pap or soy bread, the therapy would have found in soybeans an aid of great utility in the ordinary treatment of diabetes mellitus, which is so difficult for most patients to stand, especially because they must abstain from starches for which they generally show such a strong appetite” (p. 447). Address: France.

276. Kellner, O.J.; Mori, Y.; Nagaoka, M. 1889. Researches on the manufacture, composition, and properties of “koji.” *Bulletin of the College of Agriculture, Tokyo Imperial University* 1(5):9-33. July. [10 ref. Eng]

• **Summary:** A detailed analysis. “*Koji* i.e. steamed rice or barley upon which is developed the mycelium of special fungus plays an essential part in various manufacturing processes peculiar to Japan and China. It is used as a saccharifying substance in the preparation of rice wine (*sake*) and alcohol (*shochiu*) and seems likewise to be the chief active ingredient which brings about the slow fermentation as well in the manufacture of *miso*, a food adjunct very common in Japan, as in the preparation of *shoyu*, a peculiar sauce also largely consumed in the country.

“... we prepared koji from rice and barley in the following way, which is generally adopted in the koji works, and which has already been described by O.

Korschelt (1878), and R.W. Atkinson (1881).” Address: Dr., Prof. of Agricultural Chemistry, Imperial College of Agriculture and Dendrology, Komaba, Tokyo, Japan.

277. Kellner, O. [Oskar Johann]; Nagaoka, M.; Kurashima, Y. 1889. Researches on the manufacture and composition of “miso.” *Bulletin of the College of Agriculture, Tokyo Imperial University* 1(6):1-24. Dec. [12 ref. Eng]

• **Summary:** Contents: Introduction. Raw material and preparation of miso: Soy beans, koji from rice or barley, common salt. The chemical processes during the ripening of miso (incl. chemical composition of fresh substance and dry matter, which include nitrogenous substances or albuminoids, ether extract [crude fat], carbohydrates, crude fibre, ash, solubility, water). Varieties, composition, and nutritive properties of miso: (1) “Shiro miso, white miso, is characterized not only by its white colour but also by its low content of salt and by the short time it will keep good”—no longer than 10 days; 4 days fermentation time. (2) “Yedo miso, so called from the former name of the metropolis” [Yedo/Edo, now Tokyo]; 20 days. (3) “Inaka miso, country miso, is the richest in salt and is prepared with the help of barley koji”; 11-12 months. (4) “Sendai miso derives its name from the city of Sendai in Miyagi prefecture where it is widely prepared, but is frequently also termed *Aka miso* (red miso)”; 8-15 months. (5) Other sorts of miso which are only of local importance. Four are consumed mostly in miso soup: Sano miso, Nagaseyama miso, Mikawa or Sanshiu miso [Sanshu miso]. Four others can be consumed uncooked and used as condiments: Kinzanji miso (“named after a Buddhist temple and prepared by fermenting a mixture of soy beans, barley koji, salt, starch-sugar [*amé*], slices of egg plant [*Solanum melongena*], and ginger roots”), Sakura miso (“quite similar to the preceding, but sweeter on account of an admixture of large quantities of starch-sugar or raw cane sugar”), Tetsuka miso [Tekka miso] (“is common miso with the addition of sesamum oil, roasted soy beans, and slices of the roots of burdock [*Arctium Lappa*]”), Kogo miso (“is prepared like common miso but with an addition of rice bran”).

The introduction begins: “Miso, e.g. a food prepared from a mixture of soy beans, rice or barley, common salt, and water, by slow fermentation, seems to have been known in Japan since remote times. Its manufacture, like so many other useful processes, appears to have been taught to the Japanese by Chinese or Koreans. At least the *Sandai jitsu roku*, tells us, that a Chinese priest named *Jingo* transmitted more than 1000 years ago a small quantity of miso to the then Emperor of Japan, and the name ‘*Korei shiwo*’ sometimes, though not frequently used instead of the word ‘miso,’ points to its introduction from Korea, where indeed, as well as in China, miso is still a favorite food.

“In Japan miso is very widely consumed, especially by the lower classes, who enjoy it as a sort of food adjunct to

the vegetables of which their daily diet consists. Although it is eaten throughout the whole country, it seems to be especially favoured in the north-eastern provinces. Statistics on its consumption do not exist at present and may also be difficult to compile, as in the countryside it is made by families themselves [at home], and only in large communities are special miso works [factories] established. Assuming, however, 10 monme (37.5 grms.) to be the lowest quantity daily consumed per head, and 20 millions out of the 39 [million] of the whole population to eat miso every day, a yearly amount of nearly 30 million kilograms of miso is arrived at, for the preparation of which more than half the yearly produce of soy beans (2.3 million koku [335,000 tonnes] in 1883) is needed. Although these figures are certainly too low, they surely indicate the importance of this food in the nutrition of the Japanese people.”

Tables show: (1) The composition of three different types of soy beans that make good shoyu and good miso, and the weight of 1000 grains/seeds of each (p. 3). (2) The composition of four different types of sea salt: Ajino from Bizen, Ako from Harima, Mitajiri from Suwo, and Giotoku from Shimosa [Shimōsa] (p. 4). (3) The composition of soy beans and of barley, and amount of each used in making miso (p. 6). (4) The composition of the fermenting miso after 50, 85, 120, and 150 days, on a fresh (as-is) basis (p. 7) and a dry-matter basis (p. 8). (5) Changes in nutrients in the soy beans and in the barley during fermentation (p. 11). (6) Changes in the miso during fermentation (p. 13). (7) Temperature of the original mixture and length of fermentation for four types of miso: Shiro miso, Yedo miso, Inaka miso, and Sendai miso (p. 15). (8) Composition of five types of miso (p. 19). (9) Proportion of raw materials, age, temperature of the beans when mixing them with the other ingredients, and price per *kin* (=0.601 kg) of the same four types of miso.

Note 1. Dr. Kellner published three subsequent articles in this journal but none concerned soybeans: (1) “Manuring experiments with paddy rice” (Bulletin No. 8, June 1890); (2) “Manuring experiments with paddy rice. (Third year)” (Bulletin No. 11, July 1892); (3) “Comparative experiments on the effects of various phosphatic fertilizers on upland soil, and analysis of rice grain” (Bulletin No. 12, March 1893).

Note 2. This is the earliest English-language document seen (Sept. 2002) that contains statistics on the production or consumption of soyfoods (in this case miso), in Japan.

Note 3. This is the earliest document seen (Sept. 2002) that contains statistics on miso by geographical area.

Note 4. This is the earliest English-language document seen (Aug. 2001) that mentions the word “nutrition” in connection with soy.

Note 5. This is the earliest document seen (March 2009) that mentions “Inaka miso” [made at home in the countryside], or “Tetsuka miso” [Tekka miso], or “Yedo

miso" [Edo miso], or "Sendai miso" [a dark rice miso made in and around the city of Sendai], or "Kinzanji miso," or "Sanshu miso" [Sanshu miso, a soybean miso made in central Japan].

Note 6. The parallel Japanese title of this English-language periodical is *Tôkyô Nôrin Gakkô. Gakujutsu hôkoku*. Address: Dr., Prof. of Agricultural Chemistry, Imperial College of Agriculture and Dendrology, Komaba, Tokyo, Japan.

278. Kellner, O.J.; Mori, Y[ôtârô]. 1889. Untersuchungen ueber die Ernaehrung der Japaner [Investigations on the nutrition of the Japanese]. *Zeitschrift fuer Biologie* 25:102-22. [16 ref. Ger]

• **Summary:** The Japanese practice a near-vegetarian diet and consume very little meat. In 1882 only 36,288 cattle were slaughtered and the 37 million inhabitants consumed less than 1 kg per capita each year. The authors found that rice constitutes about 50% of the total vegetable food of the Japanese, followed by barley and wheat (27%), other small grains such as millet and buckwheat (13.9%), with green vegetables, roots, tubers, etc. making up the remainder. Soybeans, which are rich in protein and fat, are not widely consumed as such directly, but are made into other unique foods such as tofu and miso, and a tasty sauce, shoyu. Miso is made in almost every household in Japan. The process for making miso, tofu (*Bohnenkäese*), and shoyu is described (p. 103-04).

A table (p. 121) gives the chemical composition of various Japanese foods (on a moisture-free basis), including soybeans cooked with shoyu, and tofu (*Bohnenkäese*). Address: Tokyo, Japan.

279. Koenig, Franz Joseph. ed. 1889. *Chemische Zusammensetzung der menschlichen Nahrungs- und Genussmittel*. Vol 1. *Chemische Zusammensetzung...* Ed. 3 [Chemical composition of human foods and food adjuncts (stimulants / enjoyables). Vol. 1. Chemical composition... 3d ed.]. Berlin: Verlag von Julius Springer. 1161 p. See p. 241-42, 595-600, 625, 631-32, 1041. See also Vol. 2, 1893. [21 ref. Ger]

• **Summary:** Summaries of early studies on chemical composition of soybean seed and of miso. The long and interesting section titled "Commercial sauces and food seasonings" (p. 241) is discussed in a separate record.

A table (p. 389) gives numerical data on the oil from various oilseeds, including the soybean: Melting point, saponification number, neutral fat (*neutralfett*), free fatty acids, total fatty acids, molecular weight of the fatty acids, lecithin, stearic acid from lecithin, phosphorus, unsaponifiable components.

Pages 486-90 give a good review of the literature on soybeans, discussing the various types, composition, shoyu or soy sauce, koji, Japanese miso, and tofu. A table (p. 489)

gives the composition of 5 soy products analyzed by Edward Kinch: White miso, red miso, fresh tofu, frozen tofu, and soybean cake. König notes that some of these foods are not suited for the German palate, however E. Wein makes several good-tasting dishes from soybeans, used in a soup like beans or peas, in a salad like green beans, or cooked with potatoes or rice and pureed to resemble the Italian 'Polenta'—called 'Sojenta' by Haberlandt. The taste of these soybean preparations reminds one somewhat of almonds or chestnuts. See also soy flour under "Meal" (*Mehl*) (p. 625).

Pages 595-600 give detailed nutritional analyses of soybeans based on studies by various authors: Black oblong soybeans (based on E. Wein 1881, and Edw. Kinch 1882). Yellow soybeans (Anderson, Senff, Fr. Schwackhoefer and Joh. Stua, Zulkowski, E. Mach and K. Portele [of Vers.-Stat St. Michele, original communication; harvested in Tirol, Austria, in 1877], R. Ulbricht and von Koritsánsky [Koritsansky, of Acad. Laborat. of Hungarian Altenburg, original communication; harvested in Hungarian Altenburg in 1878], E. Wildt [of Vers.-Stat. Posen, original communication; harvested in Posen], Schroeder-Napagedl, Blaskovics, Wein, Weiske, Kinch). Brown soybeans (Schwackhoefer, Zulkowski, E. Mach and K. Portele, Ulbricht, E. Wein, Schroeder, Weiske, Kinch). Black round soybeans (Senff, Mach, Wein, Kinch). Other soybeans (Caplan, Mach, Wagner, H. Pellet, Carriere, Kinch, Meissl, Kellner, Jenkins). Soybeans grown with fertilizer / manure (*Gedüngte Sojabohnen*, E. Wein).

Page 625 contains one analysis of whole soybean flour (Sojabohnenmeal) conducted in 1882 by C.H. Knorr in Heilbronn; the analyst was *v. d. Becke und Cosack*. This flour contained 10.23% water, 25.69% nitrogenous substances, and 18.83% fat, etc.

Pages 631-32 give detailed nutritional analyses of soybean products based on studies by various authors: Leguminose-Maggi (18 brands made by Jul. Maggi & Co. in Kempthal, Switzerland; sampled from 1885-1888; studies by E. Schumacher-Kopp, M. Wesener [personal communication]). Soybean preparation named "miso" (Made by Jul. Maggi & Co. in Kempthal; sampled in 1888; Study by W. Kisch [personal communication]). Miso (red or white, 1882; by Edw. Kirch [sic, Kinch]). Tofu (fresh or frozen; E. Kirch [sic, Kinch]). Address: Prof. and Head, Agricultural-Chemical Experiment Station, Muenster in Westphalia, Germany (Professor und Vorsteher der Agric.-Chem. Versuchsstation Muenster i. W., Germany).

280. Rein, Johann J. 1889. *The industries of Japan*. Together with an account of its agriculture, forestry, arts, and commerce. London: Hodder and Stoughton. xii + 570 p. See p. 6, 55-59, 62-63, 105-08, 157. Illust. Indexes (English and Latin; Japanese). 26 cm. [3 ref. Eng]

• **Summary:** This book is a translation of volume II of his superb book *Japan nach Reisen und Studien*, published in 1886. The result of many years of study, including a stay in Japan, it is based on travels and researches undertaken at the cost of the Prussian government. On page 6, the author discusses the *Gokoku* (five chief cereals) and the introduction of agriculture to Japan. “As Tokugawa Ieyasu, the founder of the last Shōgun [shogun] dynasty, emphasizes in the twelfth of his ‘Eighteen Laws,’ the introduction of agriculture into Japan is ascribed to the sun-goddess *Tenshō Daijin* (Amaterasu). She was, to the old Japanese, Janus and Ceres in one. Her temple, at Yamada, in Ise, was the great national sanctuary, which had to be cared for according to law, and built anew every twenty-one years out of consecrated Hinoki-wood (*Chamaecyparis obtusa* S. and Z.) ‘in order that the land might have peace and thrive.’ By *Gokoku* (five chief cereals) were meant rice, barley and wheat, Italian millet, other kinds of millet, and beans—in fact, the principal *Kokurui*, that is, cereals and pulse. The term *Go-koku*, however, did not mean the same thing in all ages. Thus we find in Kaempfer, *Amoenitatum exoticarum* (1712, p. 834), *Kome* (*Oryza*), *O-mugi* (*Hordeum*), *Ko-mugi* (*Triticum*), *Daidzu* (*Dolichos soja*, L.), and *Adzuki* (*Phaseolus radiatus*, L.) mentioned as *Gokoku*. Later the idea was extended farther, and included all important food-plants belonging to the group of cereals and pulse.”

“The Emperor Shinnung [Shen Nung] had introduced and spread the practice of agriculture in China, about the year 2700 B.C. For this he was deified after death, and a temple was dedicated to him in Peking. In the park-like surroundings of this temple, the emperor of China since then, at the time of the spring equinox, annually ploughs a piece of land and sows it with *go-koku*.” Note 1. This is the second earliest document seen (Dec. 2000) that gives an early date (2700 B.C.) for Shen Nung. It is the earliest document seen (Dec. 2000) that weakly links Shen Nung with soybeans, which were probably one of the *Gokoku*.

Soy-bean is described in the chapter on “Food Plants,” under “Pulse or Leguminous Plants.” “Among the pulse of Japan (and not the less of China), the soy-bean ranks first in extent, variety of use, and value; and chemical analyses prove the empirical judgment is well founded. In point of nutriment, the soy-bean is of all vegetables the nearest to meat. It contains nearly two-fifths of its weight in legumin rich in nitrogen, and nearly one-sixth in fat. The soy-bean is to the inhabitants of Japan what their *garbanzos* (chick-peas) are to the Spanish, and their *feijao preto* (black beans) to the Brazilians. The author then describes the characteristics of the soy-bean, the work of Haberlandt with soy-beans in Austria, and the yields that he and his co-workers obtained. Note 2. This is the earliest English-language document seen (June 2008) that uses the word “*garbanzos*” (or “*garbanzo*”) to refer chick peas.

“In Japan the varieties of soy-bean are distinguished—according to colour, as white (more properly yellowish), black, brownish red, green, and spotted; according to duration of growth [maturity] as early-ripening, middle-ripening, and late-ripening; according to form, as spherical, ellipsoidal, kidney-shaped, and compressed laterally; and according to use, as to those which serve primarily in making *Shōyu* (soy), *Tōfu* (bean-cheese), and *Miso* (a sort of sauce), and those eaten in any plain shape.” Soy-bean varieties in Japan include: 1. “White (pea-yellow) soy-beans, Japanese *Shiro-mame* or *Haku-daidzu*. To this division belongs an early-ripening sort with very small seeds, called *Goguwatsu-mame* [*Go-gatsu*], or ‘five-months-kind,’ because it ripens in the fifth month of the old Japanese calendar, our July; also another small-seeded, early-ripening variety, the *Wase-mame* or *Natsu-mame*, that is, early and summer-bean. These two are also called *Tōfu-mame*, because they are used chiefly in making *Tōfu*. Another sort serves to produce *Miso*. It is called *Nakate-mame*, ‘middle-late bean,’ its time of maturity occurring half-way between that of the early and late kinds. Its seeds are round and somewhat larger. The late ripening varieties, *Okute-mame* (late-bean), *Maru-mame* (bullet-bean), and *Teppō-mame* (gun-bean), or *Aki-mame* (autumn-bean) have, as their names indicate, mostly bullet-shaped seeds, which become harder and larger than the early ones. The variety last named is used in making *Shōyu*, while *Maru-mame* is valuable as horse-feed.

2. Black soy-beans, Japanese *Kuro-mame* or *Koku-daidzu*. These are eaten boiled with sugar, as an entrée, or as a relish to rice. A species like it with big, bullet-shaped beans is called *Kuro-teppō-mame*. 3. Brown soy-beans, Japanese *Katsu-daizu* (thirsty soy-bean) are much less grown than the white and black sub-species, and are used like the latter. They are distinguished as *Aka-mame*, red soy-beans, round, of red-brown colour, in different varieties, and *Cha-mame*, tea beans, three light-brown sorts of small extent and significance. 4. Greenish or bluish green soy-beans, Japanese *Ao-mame* or *Sei-daizu*, are eaten mostly boiled and with sugar, like the black and brown-red varieties. And, with the brownish sorts, they are much less widely grown than the black and yellowish. The Japanese distinguish the following sub-species of *Aō-mame*:—(a) *Sei-hito*,—epidermis green, inside a whitish yellow. (b) *Nikuri-sei*,—greenish throughout. Both sub-varieties run from roundish-ellipsoidal to a bullet roundness, are of medium size, and remind one of green peas. (c) *Kage-mame*, with pale green, round beans. 5. Speckled soy-beans, Japanese *Fuiri-mame* or *Han-daidzu*. This group is not important. Its cultivation is confined to a small area, in a few provinces. Its sub-varieties are known as:—(a) *Kuro-kura-kake-mame*, with a black spot on the saddle (eye), otherwise greenish; flat and with the outline of an egg. (b) *Aka-kura-kake-mame*, with a brown spot on the saddle (eye), otherwise

yellowish-green, flat and drawn out long. (c) Fuiiri-mame or Udzura-mame, speckled or spotted soy-bean, yellowish-green with many dark flecks. A rare variety, grown only in a few places, especially in Harima. Note 3. This is the earliest English-language document seen (Sept. 2004) that uses the word “speckled” (or “speckling” or “specks”), or the word “flecks,” or the term “light-brown” to describe the color of soybean seeds.

“Early-ripening soy-beans are sown as early as April in Southern Japan, in Central Japan during May. Those that ripen in autumn need much more warmth, and are sown, as a rule, one month later... Late-ripening Daidzu is also a favourite for planting along the edge of fields and on the new-built dykes of rice-fields.”

“At the end of his above-mentioned treatise, Haberlandt summed up in five noteworthy propositions, the results of his experiments with the soy-bean and of its chemical analysis. His conclusions are as follows:

“(a) The acclimatization of the early-ripening sorts, particularly those with yellow and reddish brown seeds, appeared to have fully succeeded in Central Europe.

“(b) The seeds obtained were larger, heavier, and handsomer than those from Eastern Asia, the chemical composition, however, remaining unchanged.

“(c) The soy-plant resists light spring frosts better than our young beans, and endures greater dryness in summer than most leguminous plants, though otherwise much like other kinds of beans.

“(d) It is distinguished by heavy crops, besides furnishing, in its stems and leaves, either green or dried, a nourishing feed, of which cattle are very fond.

“(e) In their high percentage of protein and fat, they far excel all other pulse in nutritive quality; and when properly prepared are second to none in flavour.

“After such favourable judgments, it might have been expected that the soy-bean, at least in the warmer regions of Austro-Hungary, would soon become popular and generally cultivated. The result, however, was quite otherwise. The hopes which he had aroused in behalf of this plant seem to have disappeared with Haberlandt, who died in 1878.

“As I know from a reliable source, people soon became convinced that it was possible to cultivate with certainty the early-ripening yellow sorts. The crops from these, however, are unsatisfactory. It is so difficult to boil them soft that they have no sale and cannot be turned to due account.”

The seeds of certain wild kinds of beans also serve for food, incl. Tsuru-mame or No-mame (*Glycine soja*, S. and Z.) and No-adzuki (*Atylosia subrhombica*, Miq.). (p. 62).

Tables (both based on other sources) show: (1) Analyses of soy-beans (*Glycine hispida*, Moench) (p. 62). Gives the nutritional composition of 8 varieties, plus the empty pods, and the straw and leaves. (2) Comparative “analyses of various pulse” (p. 63), including *Glycine hispida* (Daidzu—soy-beans), *Phaseolus radiatus* (adzuki), *Pisum sativum*

(Yendo—peas), *Vicia faba* (Sora-mame), lentil, yellow lupine, and ground-nut.

Pages 105-08 contain detailed discussions of shoyu, miso (which “does not spoil, and is said to be at its best when three years old”), and tofu.

A table titled “Average composition of various Japanese oil-seeds according to E. Wolff and others” (p. 157) includes the composition of ground-nut [peanut], sesame (brown, or white), hemp-seed, and soy-beans.

Also discusses: Adzuki (*Phaseolus radiatus*, p. 60, 108). Algae, marine, used as food [sea vegetables] (p. 77, 80-82). Ame, midzu-ame, and barley malt (p. 103-04). Arachis hypogaea (p. 56, 153-54). Fu (wheat gluten, p. 108). Hemp (*Cannabis sativa*, p. 75, 157, 165-66). Kudzu (p. 65, 160, 184). Sesame seeds (Benni-seed, gingeli, p. 154-55). Address: Prof. of Geography, Univ. of Bonn [Germany].

281. Kellner, O[skar Johann]; Mori, Y[ōtarō]; Nagaoka, M[uneshige]. 1890. Beitrage zur Kenntniss der invertirenden Fermente [Contributions to the knowledge of inverting enzymes]. *Hoppe-Seyler's Zeitschrift fuer Physiologische Chemie* 14(3):297-317. [13 ref. Ger]

• **Summary:** This article contains a long analysis of the role of koji and its enzymes (*Koji-Ferment*) in the fermentation process that creates rice wine (saké). The process of making koji from spores is described, as well as the quantitative changes which take place with the development of the mycelium on two substrate (rice or barley) at various temperatures. The work of Prof. Atkinson is discussed at length.

On pages 306-08 Kellner gives the results of his experiments on the effects of koji extracts on various carbohydrates: cane-sugar, milk sugar (lactose), maltose, inulin (a tasteless white polysaccharide), and starch. (Note: In chemistry, inversion, is the conversion of dextrorotary sucrose into a levorotary mixture of glucose and fructose). Before the inversion, there is 4.04% reducing sugar, expressed as dextrose (optical rotation 20.9°); after the inversion there is 7.46% (optical rotation 8.4°). Kellner summarizes these results on p. 310 as follows: “From our investigations, one can conclude that koji contains a powerful inverting ferment [enzyme], which transforms cane sugar into dextrose and levulose, maltose into dextrose, and starch into dextrin, maltose, and dextrose. However milk sugar and probably also inulin are not transformed. Therefore the koji enzyme (*Koji-Ferment*) is entirely different from the diastase of malt; it is also probably different from the invertin (*Invertin* = invertase) of beer yeasts, which easily inverts cane sugar to dextrin and maltose—according to Mr. J. Kjeldahl. Kellner then repeats the experiments on carbohydrates using yeast extracts (p. 311-13) and confirms that the latter give different results than koji extracts. He then coins the term “Invertase” (p.

313) to refer to the inverting enzyme in *Eurotium Oryzae* Ahlb. (later renamed *Aspergillus oryzae*, the koji mold).

On p. 316 Kellner explains: In addition, koji is frequently used in a mixture with considerable amounts of table salt (*Kochsalz* = NaCl), steamed soybeans, and other materials (*Stoffen*) for the preparation of miso (a food [*Nahrungsmittel*] very widely found throughout Japan) and shoyu (a sauce which is also known in Europe); it seems to be used here mainly as the carrier of a slow, often years long fermentation. "Since miso contains only 6-12% salt and shoyu contains about 150-160 grams of salt per liter, and since this salt limits the action of soluble ferments, we have investigated how the transformation of soluble starch takes place through invertase the presence of various amounts of salt." A table (p. 317) shows two experiments. The percentage of table salt in the mixture is increased from zero to 20% in five or six steps. As the percentage of salt increases, the reducing sugar (expressed as dextrose) decreases moderately, while the relative activity of the invertase decreases dramatically. Fehling's solution is used in the experiment. Address: Japan.

282. Watt, George. 1890. A dictionary of the economic products of India. Vol. 3. London: W.H. Allen & Co.; Calcutta, India: Office of the Superintendent of Government Printing. 534 p. See p. 509-11. Index (in Vol. 7). 25 cm. [14 ref]

• **Summary:** Contents related to the soy bean: *Glycine* (p. 509-10). *Glycine hispida*, Maxim. (p. 510-11): Synonyms, vernacular, references, habitat, oil, medicine, food and fodder, chemistry, the bean, oil.

Under *Glycine*: "Reference having been made to the authorities of the Calcutta Herbarium on the subject of *G. soja*, Sieb. et Zucc., being, as shown in the Flora of British India, a native of this country, Dr. Prain kindly went into the subject very carefully. He writes: 'We have not, from any part of India, any specimens of *G. soja* proper. The Khasi Hills plant is more erect, more hispid, and has larger legumes than the Himalayan, and indeed resembles *G. hispida*, Maxim., quite as much as it does the Indian cultivated "*G. soja*," which, indeed, it connects with *G. hispida*. It is, in fact, the plant most like the wild *G. soja*, S. et Z., which no one ever professes to have found wild in India, while it is also the one most like *G. hispida*, Maxim. (which has never been found wild anywhere). It is the plant collected by Dr. Watt and myself in the Naga Hills.'

"The writer noted on his Naga Hill specimens that they were found in a semiwild state, and that the plant was known to the Angami Nagas as *Tsu Dza*, a name not unlike *soja*. Throughout India, the soy bean is cultivated, black and white seeded forms being met with, which vary to some extent, but all preserve the specific characters of *G. hispida*. Plants raised at Saharanpur from Japanese seed have larger and broader leaves than the usual Indian forms. The fact

that this cultivated plant possesses, even among the aboriginal tribes, names which are original, i.e., in no way modern derivatives, points to an ancient cultivation, if, indeed, it may not be accepted as an indication of its indigenous nature. (Editor.)"

"Vern[acular]–Bhat, bhatwan, ram kurthi (Hind. [=Hindi or Hindoostanee]); Bhut (Punj. [= Panjabi]); Gari-kulay (Beng. [=Bengali]); Hendedisom horec (black-seeded), Pond disom, horec (white-seeded variety) (Santal); Tzu-dza (Naga); Bhatnas, bhatwas (Nepal); Seta, kala botmas (Parbat.); Musa, gya (Newar); Khajuwa (Eastern Terai); Bhut (Kumaun).

References: The author cites 17 early references concerning soya and, using information from these. : This brief bibliography on soya is one of the best and worst seen. Its is good in that it cites a host of previously uncited publications. It is bad in that the references are so abbreviated as to often be incomprehensible; and some of them are incomplete or incorrect.

Habitat: "Extensively cultivated throughout India and in Eastern Bengal, Khasia hills, Manipur, the Naga hills, and Burma, often found as a weed on fields or near cultivation."

Medicine: "A decoction of the root is said to possess astringent properties." Food and fodder: "The Soy-bean forms an important article of food in China and Japan. Since 1873, it has been successfully grown in the warmer parts of Europe. It is also widely spread, in a cultivated state, over a great part of the Himálaya [Himalaya] and the plains and lower hills of India. On the plains the crop is generally grown by itself, as a *kharif* crop; the seeds are sown from June to September, and the harvesting takes place from November to January.

"The bean is eaten in India in the localities where cultivated. The Rev. A. Campbell states that in Chutia Nagpur it is generally used roasted and ground as *satu*, or simply roasted in the form of *atá*. In other parts of the country it is also eaten in the form of *dal*. In China and Japan three preparations are made from the soy-bean, namely soy-sauce, soy-cheese, and a kind of paste. The last two of which are manufactured by crushing and pressing the seeds."

Note 1. An extensive "List of works consulted" (bibliography) appears in Vol. I (1889, p. xiii-xxii), followed by a list of contributors (p. xxiii-xxvi) and list of abbreviations (p. xxvii-xxxiii).

Note 2. This is one of earliest documents seen (March 2005) that clearly refers to the cultivation of soybeans in Burma.

Sir George Watt lived 1851-1930. This 7-volume work, published from 1889 to 1896, is arranged alphabetically by product. An extensive bibliography is in vol. 1, and the index comprises vol. 7. Address: M.B., C.M., C.I.E., Reporter on Economic Products with the Government of India.

283. Turner, Fred. 1891. New commercial crops for N.S. Wales: The cultivation of the soy bean (*Soja hispida*, Moench.). *Agricultural Gazette of New South Wales* 2(11):648-50. Nov.

• **Summary:** “The soy bean is indigenous in India, Japan and China. There are numerous varieties of the plant cultivated in those countries, including both tall and dwarf-growing kinds, but it is the large-seeded varieties of the latter which I would particularly recommend for cultivation in this Colony, because they are not only more easily managed, but, generally speaking, are more productive to any given area than the tall growing kinds. The dwarf soy is an annual hairy growing plant, growing about 2 feet high, with trifoliate leaves, and small flowers borne in short axillary racemes. These are succeeded by oblong three or four seeded hairy pods. As will be seen from the engraving of the plant, it is a good deal like the ordinary dwarf kidney bean in its habit of growth, but differs materially in the superior quality of the pulse which it yields. The very productive and pulse yielding plant has been cultivated in Asiatic countries probably from time immemorial, but only within the past twenty years or so has it attracted the attention of European cultivators. In the southern parts of Europe, the cultivation of the dwarf kinds have proved a great success, and in France they are said to be an important crop.

“Some of our leading seedsmen have now become aware of the value of the soy bean, and seeds are now obtainable in Sydney. The plant has already been grown in a small way in a few places in this Colony, and has proved itself well adapted to our climate, so that there is no risk in attempting its cultivation here, in suitable places, on a large scale.”

Note 1. This is the earliest document seen (July 2008) that clearly refers to soybeans in Australia or Oceania, or the cultivation of soybeans in Australia or Oceania. This document contains the earliest clear date seen for soybeans in Australia or Oceania, or the cultivation of soybeans in Australia or Oceania (Nov. 1891). The source of these soybeans unknown.

“Moreover it is not only a vigorous growing and a heavy yielding pulse plant, but it appears to keep remarkably free from both insects and fungoid pests.” Note 2. This is the earliest English-language document seen (Aug. 2007) that uses the word “fungoid” to refer to fungal.

“Having eaten the seeds of the soy bean, I can say that they are an excellent addition to the pulse yielding plants we have already under cultivation. As regards their chemical composition I cannot do better than quote the analyses of Professor Church and Dr. Forbes Watson. ‘Although there are a number of varieties of the soy bean, the chief differences between them lying in the size, shape, and colour of the seeds, yet these varieties are not distinguished by definite differences in chemical composition. That

composition entitles the soy bean to the highest place, even amongst the pulses, as a food capable of supplementing the deficiencies of rice, and of other eminently starchy grains. Very few vegetable products are so rich as the bean at once in albuminoids and in fat or oil, the former constituent amounting on the average to 35 per cent, and the latter to 19 per cent. The cultivation of the pale large seeded varieties should be extended.”

Facing this first page is a full page illustration of a soy bean plant, titled *Soja hispida*, Moench. “Soy Bean.” with an enlarged pod (A) and seed (B). It has been copied from an 1882 issue of *The Garden* (July 29, p. 93) then modified slightly.

Two tables are titled “Composition of soy bean.” The first, by Professor Church, shows the composition in 100 parts [percentage] and in 1 lb. The second by Dr. Forbes Watson, shows the composition with husk and husked.

“The nutrient ratio here is about 1.2 while the nutrient value is 105. Potash forms early one-half and phosphorus pentoxide one-third of the ash of the soy bean. The beans are sometimes pressed for the sake of the oil they yield; the residual cake forms an extremely rich cattle food, containing as it does 40 per cent. of flesh-formers [albuminoids = proteins], and 7 per cent of oil.”

“The soy bean can be grown nearly all over that portion of the Colony where late spring or early autumn frosts do not occur, and with irrigation it might prove a valuable plant to grow in the interior. A good guide to go by is to cultivate the plant in those parts where the kidney bean will flourish, and this is over an immense area of New South Wales. The soybean is rather an exhausting crop, therefore it should be an alternating one. It would do very well to follow after a root crop. To obtain the best results it should be grown on a moderately light, well drained, and well worked soil that is rich in organic matter. The plant will grow well enough on other kinds of soil provided that they are drained, and well worked, and, if not naturally fertile, some suitable manures are applied. If well rotted farm-yard manure is not available, then sulphate of potash, or nitrate of soda, might be used with advantage. If farm yard manure is applied to the land, it should be ploughed in some time previous to sowing the crop, or it might have a tendency to cause a too rank growth of the plants, at the expense of the yield of beans. Commercial manures may be used on the land when it is prepared to receive the crop.

“Sowing the seed. From the Hunter to the Tweed Rivers, it would be possible to obtain two crops in the year by sowing in October, then again in December if there is a sufficient amount of moisture in the soil. South of the Hunter River, however, it will be hardly likely that more than one crop can be harvested during the year. The seed for this should not be sown before the middle of October, or the beginning of November, according to situation. It would perhaps be as well to state that the young plants are very

susceptible to frost, 2° Fahr. being quite enough to blacken them.” Gives more details on sowing, then a paragraph on harvesting.

The last section is titled “Uses: The beans can be picked from the plants whilst green, and cooked and eaten without previous preparation. Ripe soy beans should, however, be steeped in warm water for some time before they are cooked, otherwise they will remain almost as hard as they were before cooking. In China and Japan the soy bean cheese [tofu] and a kind of paste [miso] are important articles of food. In those countries also soy sauce is made from the beans, which is not unknown to European palates. The sauce is said to be made in the following way. Boil the beans with equal quantities of wheat or barley, and leave it for three months to ferment, after which salt and water are added, and the liquid strained. Soy sauce is extensively used in Asia, and to some extent in Europe for flavouring certain dishes, especially beef, and it is supposed to favour digestion.”

284. Rathgen, Karl. 1891. *Japans Volkswirtschaft und Staatshaushalt* [Japan’s economy and national budget]. Leipzig: Duncker & Humblot. xx + 785 p. See p. 328, 331, 397, 445, 611-12. In: *Staats- und Socialwissenschaftliche Forschungen*. Vol. 10. No. 4. [2 ref. Ger]

• **Summary:** Wheat flour is an important component in the production of shoyu (p. 328).

“Production of soybeans by year was as follows. (Note 1. 1 cho = 2.45 acres and 1 koku = 180 liters or 47.6 gallons): 1878 was 414,961 cho and 1,642,183 koku. 1881 was 427,557 cho and 2,175,337 koku. 1884 was 440,647 cho and 2,323,435 koku. 1887 was 466,315 cho and 3,253,790 koku (p. 330). The large increase in numbers is due mainly to a 76% increase in yields during this 9 year period. This must be difficult since most soybeans are grown around the edges of fields, on paddy bunds and in very small plots.

“Soybeans are grown throughout Japan, but they are concentrated in Tokyo plain and the prefectures bordering on its north. In 1887 the following 12 prefectures accounted for 56% of Japan’s total production: Kanagawa, Saitama, Chiba, Ibaraki, Tochigi, Gunma, Nagano, Niigata, Yamagata, Fukushima, Miyagi, and Iwate. Note 2. This is the earliest document seen (Jan. 2005) that gives soybean production or area statistics for Japan.

“This exceptionally nutritious bean appears in all possible forms in Japanese cooking, as a vegetable, boiled in sugar, as tofu (“als Tofu (Bohnenkäse)” = bean cheese), and as the main component of fermented miso soup (*Miso-Suppe*) and of soy sauce (*Soja-Sauce*).

“During the period 1870-74, the price of soybeans averaged 3.015 yen/koku. In 1875 it was 4.46 yen and in 1886 3.98 yen, with a high of 7.11 yen/koku in 1882.”

“Since 1885, with the introduction of use taxes, new production statistics have begun to be kept on the shoyu industry. In 1887/881 some 1,180,188 koku of shoyu was taxed from 11,687 businesses, averaging 101 koku per factory. By comparison, the amount of shoyu taxed in 1888-89 was 1,304,551 koku from 10,634 businesses, averaging koku per factory. As with sake breweries, the number of plants has diminished from 13,682 in fiscal year 1885/86 to 10,634 in the fiscal year 1888/89. Although shoyu factories are found throughout Japan, there are certain regions of concentration. Chief among these is Chiba prefecture, which in 1887/88 had 689 factories and a production of 121,816 koku, averaging 177 koku/factory. The capital of the industry is the city of Choshi. Other major shoyu producing prefectures are Ehime (555 plants, 73,525 koku), Hyogo (544 plants, 73,168 koku), Okayama (580 plants, 64,389 koku), Fukuoka (381 plants, 58,022 koku), Ibaraki, Aichi, Kanagawa, and Saitama.

On p. 611-12 is a detailed discussion of Japan’s shoyu tax. Shoyu production was already being taxed in 1875. Then law 10, enacted on 8 May 1885, which went into effect of 1 July 1885, reinstated the tax. This tax is similar to the sake tax. A yearly license costing 5 yen is required and a tax of 1 yen/koku of shoyu produced is levied. Government tax revenues from shoyu grew from 640,379 yen during the partial year 1885/86 to 1,215,254 in 1889/90.

Rathgen lived 1856-1921. Address: Leipzig, Germany.

285. Wigmore, J.H. 1891. Notes on the eiraku-sen. *Transactions of the Asiatic Society of Japan* 19:501-04. See p. 502. Read 17 March 1891. [1 ref]

• **Summary:** The eiraku-sen was an important Japanese coin. “In the 10th year of Oyei (1403), says the story, the greatest typhoon ever known in Japan drove a Chinese ship [off course] to Misaki village in Izu, now Sôshû.” The people on the ship requested harbor. Mitsukane “confiscated the ship’s cargo, and after provisioning the crew with miso, salt, fuel, and rice, sent them back to China.” The author of *Denyen Jikata Kigen* gives three reasons for believing that this story is not true.

286. Giles, Herbert Allen. 1892. A Chinese-English dictionary. London: Bernard Quaritch; Shanghai, Hongkong, Yokohama & Singapore: Kelly and Walsh, Ltd. xlvi + 1416 p. 31 cm. [4 ref. Eng; chi]

• **Summary:** This massive volume, weighing almost 12 lb, contains more than 1,450 pages and 13,848 Chinese characters. Contents: Dedication (to the Honourable C.P. Chater). By the same author (17 books). Preface: Number of characters, the characters numbering, duplicate characters, phonetic arrangement, orthography, the tones, the dialects (Beneath the number attached to each character will be found its rhyme (R) as given in the *P’ei-wên-yün-fu*. The romanization of each character is given in Cantonese,

Hakka, Foochow, Wênchow, Ningpo, Peking, Mid-China, Yangchow, and Ssuch'uan {Szechwan} dialects, as well as in Korean, Japanese, and Annamese, each being distinguished by its initial letter), the definitions, the entries, etymology, grammar, difficulty of Chinese, personal. Philological essay (incl. tones, ranging from 4 to 9, in ten dialects). Table of sounds.

Examples of soy-related characters:

Chiang (p. 122, No. 1220). “A soy made by mixing salt with bean-flour. Sauce. Pickled food.” Fourteen compounds using this character are given, including: Bean sauce, soy. Pickled bean curd [fermented tofu]. Bean sauce. Soy is of two kinds, the clear and the thick. Dry relishes. Soy colour—a dark reddish drab. He won’t use money for vinegar to buy soy.

Ch’ih (p. 205, No. 1996). “Salted fruits, etc., dried and used as relishes.” Four compounds incl.: Salted beans. Soy, sauce.

Fu (p. 458, No. 3686). “Rotten; putrid; worthless.” Eleven compounds and sayings include: Bean curd, see No. 11,417. Bean curd officials—a term of contempt applied to certain of the poorer classes of official servants who are compelled to feed largely on this cheap food. Also explained as flabby or unenergetic officials. A Mongol name for cheese. A kind of milk made from beans (*rufu* = milk + fu) [Note: Probably fermented tofu, *not* soymilk].

Huang (p. 522, No. 5124). Yellow. Compounds: Yellow beans [soja].

Mao (p. 778, No. 7,679). “Hair, down, feathers.” But the word “Hairy beans” = edamame does not appear here.

Shih (p. 988, No. 9999). See No. 1996.

Ta (p. 1,036-37, No. 10,470). “Great.” But the word “Great bean” = soybean does not appear here.

Tou (p. 1,127, No. 11,417). “Beans; pulse.” See also No. 11,412. Thirty compounds, incl.: Bean-sprouts. Bean-curd. A cheap restaurant (a bean-curd restaurant). Bean-cake. Bean oil. Big bean, black bean, or yellow bean = the soja bean (*Glycine hispida*, Max.), used for making bean-curd, soy, oil, etc. Ground-nuts.

Yu (p. 1,316-17, No. 13,409). “Oil, fat, grease.” 45 compounds incl. Sesamum-seed oil. Linseed. Wood oil. An oil factory. Oil dregs. But “bean-oil” = soybean oil does not appear here.

Note 1. This is the earliest English-language document seen (Aug. 2007) that contains the term “sesamum-seed oil.” Note 2. Herbert Giles lived 1845-1935.

Note 3. Unfortunately, the pronunciation of the compounds is not given (as in Mandarin).

Note 4. This is the earliest English-language document seen (April 2001) that uses the term “Bean sauce” to refer to soy sauce.

Note 5. This is the earliest English-language document seen (Oct. 2001) that uses the term “bean-flour” to refer to soy bean flour.

Note 6. This is the earliest English-language document seen (Feb. 2007) that uses the term “pickled bean curd” to refer to fermented tofu.

Note 7. This is the earliest English-language document seen (Oct. 2002) that uses the term “Wood oil” to refer to what would later be called “China wood oil” or “tung oil,” a pale yellow drying oil obtained from the seeds of tung trees (any of several trees of the genus *Aleurites*), and used mainly in quick-drying varnishes and paints, and for waterproofing. Address: H.B.M. [Her Britannic Majesty’s] Consul at Ningpo [Zhejiang province, China].

287. Paillieux, Auguste; Bois, D. 1892. *Le potager d’un curieux: Histoire, culture et usages de 250 plantes comestibles, peu connues ou inconnues*. Deuxième édition [The inquisitive person’s kitchen garden: History, culture, and uses of 200 edible, little-known or unknown plants. 2nd ed.]. Paris: Librairie Agricole de la Maison Rustique. xii + 589 p. See p. 502-49. Illust. Index. 24 cm. [2 ref. Fre]

• **Summary:** Contents of section on soy: Introduction: Work of the Society for Acclimatization with soy, structure of this book, excerpts on soy from past issues of the *Bulletin the Society for Acclimatization*. Botany of the soybean. 1. Soy in Japan: Kaempfer’s writings, including miso and shoyu, Japan at the World’s Fair of 1878, miso, shoyu, tofu. 2. Soy in Cochin China: Black soybeans, various foods. 3. Soy in China: Soy oil, tofu and fermented tofu, soy sauce, other uses. 4. Soy in Austria-Hungary. 5. Soy in France: Historical, varieties, cultivation, utilization.

The author’s full name is Nicolas-Auguste Paillieux (lived 1812-1898; he died on 8 Feb. 1898 at age 85). An illustration (non-original line drawing; p. 503) shows a mature soybean plant bearing many pods, plus a close-up of three pods to the lower right of the plant (from an original in J.R.F. 1882). Note: Desire Bois lived 1856-1946.

Also discusses (listed alphabetically): arachide (peanuts, p. 26-28), haricot mungo (azuki, p. 201-09), kudzu or ko (p. 271-84), quinoa (p. 460-66), souchet comestible (chufa, p. 498-502, with illustration). Address: 1. Member of the Societe Nationale d’Acclimatation 2. Asst. de la Chaire de Culture, Museum d’Histoire naturelle de Paris.

288. *Natuur (De)*. 1893. Soja [Soya]. 42(20):233-34. May 13. [Dut]

• **Summary:** This Dutch-language periodical appears inside a German-language periodical titled *Die Natur* (Halle). The author of this article (whose initials “CKN” appear at the end) discusses: The soybean plant, named *Glycine Soya* or *Dolichos Soja* or (in Dutch) *de Sojaboon*, which is widely used for food in Japan (where it is called *Mame* or *Daizu*) and China. Food products made from the soybean in Japan: Miso, shoyu (soy sauce), to-fu [tofu] or “kaas van Daizu;” a brief description is given of how each is made. Soybeans in China, where it is called “Yeou-teou,” and where they make

a cheese (*Soja kaas*), oil (*eigen olie*), and milk (*melk*) which resembles cow's milk. Black soybeans (*zwarte Soja*) are widely used. Proteins in the soybean, including legumine. In Europe, by 1881, the soybean was known in Italy, Austria, Hungary, and France (especially at Etampes and Montpellier); from the seeds, people learned to obtain oil, milk, cheese, an excellent cattle feed, and a vegetable for humans—similar to the French bean but much better (*en een groente voor den mensch, gelijkende op onze spersiebonen, maar veel beter*). Soybeans are used by doctors to treat people suffering from diabetes.

In France, the seeds are roasted like coffee beans; the result is a good-tasting coffee substitute (*dure koffie, ... een even goed smakend surrogaat verkrijgen*).

A large illustration (engraving) shows a soybean plant bearing many pods. In the lower left corner is one large pod. In the lower right is written "Al Clement," which appears to be the artist's name.



Note 1. This is the earliest Dutch-language document seen (March 2001) that mentions soy coffee.

Note 2. This is the earliest Dutch-language document seen (July 2001) that mentions green vegetable soybeans, which it calls "*een groente voor den mensch, ...*"

Note 3. This is the earliest Dutch-language document seen (Oct. 2003) that mentions soymilk, which it calls *melk*.

Note 4. This is the earliest Dutch-language document seen (Oct. 2003) that mentions oil from the soybean, which it calls *olie*.

289. Bretschneider, Emil V. 1893. *Botanicon sinicum. Notes on Chinese botany from native and Western sources. II. J. of the Royal Asiatic Society, North China Branch. Series 2.* 25:i-ii, 1-468. For the year 1890-91. See pages 35-36, 137-39, 162-65. [200+* ref. Eng]

• **Summary:** The single most important early work on Chinese botany written by a Westerner. Bretschneider, an M.D., lived 1833-1901. Contents: Corrigenda and addenda to Part I. Introduction (p. 1). Notes on Chinese, Japanese and European works consulted (p. 4). Plants mentioned in the *Rh ya* (p. 20). Plants mentioned in the *Shi king*, the *Shu king*, the *Li ki*, the *Chou li* and other Chinese classical works (p. 137). General remarks by Dr. E. Faber (p. 402). Classification of Chinese names of plants (p. 411). Index of Chinese names (p. 435). Index of European names (p. 461).

Pages 35-36 state: "29.—*Jung shu* is the same as *Jen shu*.

Kuo P'o:—This is the plant called *Hu tou* (foreign bean).

"Hing Ping:—Fan Kuang as well as She Jen and Li Sün all explain the above names of the *Rh ya* by *hu tou*. But they were mistaken. As *jung* is likewise a term for foreigners [western barbarians] they concluded that *jung shu* and *hu tou* are the same. Cheng Hüan and Sun Yen identified the *jung shu* correctly with the *ta tou* or great bean. [Comp. infra, 355, *Shi king*.]

"The *ta tou* is the *Soja hispida*, Moench, or soy bean. The *hu tou*, or foreign bean, is the *Faba sativa* [sic, *Vicia faba*], or common bean [sic, broad bean], one of the cultivated plants introduced from Western Asia into China, in the second century B.C., by the famous general Chang K'ien [Chang Ch'ien, traveled 139-115 B.C.].

Chapter 2, "Plants Mentioned in the *Shi King*, the *Shu King*, the *Li Ki*, the *Chou Li* and Other Chinese Classical Works," begins with a discussion of cereals or grains (*ku*). "The term *wu ku* [*wugu*] (Cc = Chinese characters given) or five kinds of grain seems to be the oldest classification of grain. It is attributed to the Emperor Shen Nung. The ancient commentators enumerated these five kinds as follows (Cc): 1. *tao*, Rice. 2. *mai*, comprising Wheat and Barley. 3. *tsi*, *Panicum miliaceum*, the common Millet. 4. *shu*, *Panicum miliaceum*, the glutinous variety [of Millet]. 5. *shu*, the Soy bean, *Soja hispida*. Note 1. This is the earliest English-language document seen (Aug. 2002) which mentions the *wu ku* ("five grains") and states that the soy bean (*shu*) is one of them. Since the classification of the *wu ku* are attributed to Shen-Nung, it is the earliest English-language document that links him with the soy bean.

"Some commentators have *liang*, *Setaria italica*, instead of *tsi*, others substitute *ma*, hemp, *Cannabis sativa*, for *tao*, rice." Mencius and the *Li ki* both use the term *wu ku*.

“The ancient Chinese term ‘the five kinds of grain’ is also usual in Japan. We read in [Kaempfer’s] *Amoen. exot.*, 834, under *come* [rice]...” The soy bean is included. The *Chou li* mentions the six kinds of grain, or *liu ku*, which did not include the soy bean, and the nine kinds of grain, or *kiu ku*, which listed the soy bean, *ta tou*, as number six and the adzuki bean as number 7.

Pages 164-65 state: “355.—In the *Shi king* we have the term *jen shu*, which Legge translates as ‘large beans,’ 468:—Hou Tsi planted large beans [dadou = soy beans] which grew luxuriantly. Note: This is the earliest English-language document seen (June 2003) that mentions Hou Tsi in connection with soy beans.

“In the *Rh ya* [29] *jen shu* is given as a synonym of *jung shu*. Sun Yen identifies it with the *ta tou* or great bean, which latter name seems to appear first in Fang Cheng-chi’s book on husbandry [1st century B.C.] This is the soy bean, *Soja hispida*, Moench [See *Pên ts’ao kang mu*, XXIV, 1.] A good drawing of the plant is found in *Chi wu ming shi l’u k’ao*, I, 8. This bean has always been considered by the Chinese as the most important of the cultivated leguminous plants. It is grown in numerous varieties all over the Empire, especially in the north, and is much esteemed for the oil yielded by its seeds. The name great bean refers to the plant, not to the seeds, which are small, of the size of a pea.

“The soy bean is also largely cultivated in Japan. It is described and figured under the Chinese characters meaning “great bean” in *Amoen. exot.*, 838, and *So moku*, XIII, 18-21.

“The soy bean is much employed in China and Japan for preparing the so-called ‘bean-curd’ and the sauce called ‘soy.’ The first is prepared by macerating the beans in water and milling them together with the water. The liquid pap is filtered. To this fluid is added gypsum, in order to coagulate the casein, and also chloride of magnesium. The coagulated casein or bean-curd is of a jelly-like appearance. Soy is made by boiling the beans, adding water, salt and wheat, and producing fermentation by yeast.

“Bean-curd and soy were most probably known to the Chinese in the classical period, although no distinct mention is made of these condiments in the classical writings. The ancient term *tsiang*, which Legge translates by ‘sauce,’ includes, we may suppose, soy. [See *Li ki*, I, 459-461 ‘Diet of the Ancient Chinese.’] Confucius *Analects*, 96. Biot translates the *tsiang* mentioned in the *Chou li* by ‘mets delicats.’ I, 70:—Pour les mets delicats on emploie cent vingt objects differents. Compare *Pên ts’ao kang mu*, XXV, 26, on the preparation of the *tsiang*. At Peking the common name for soy is *tsiang yu* (*tsiang* oil). [S.W.] Williams [*Dictionary* (1874), 764] states that the English word soy is probably derived from *shi yu*, in Japanese *si yu*. [I should think rather from the characters pronounced *sho yu* in Japanese. See Hepburn’s *Dictionary* (1867).] The character

shi written with another radical replacing the “bean” radical to the left of the main character, in the *Shuo wen* is explained there by 5 characters, made of salt and beans [I cannot understand what the third character here is intended to mean]. See also *Pên ts’ao kang mu*, XXV, 2, under *ta tou shi*.

“As to the bean-curd, *tou fu*, it appears from the quotations in *Pên ts’ao kang mu*, XXV, 7, that this term and the mode of making bean-curd are first mentioned in the *Huai nan tsz’* [2nd century B.C.], but it was no doubt much earlier known in China.” Address: China.

290. Duthie, John F. 1893. Field and garden crops of the North-Western Provinces and Oudh, with illustrations. Part (volume) III. Roorkee: Dep. of Land Records and Agriculture, N-W. Provinces and Oudh (India). Printed at the Thomason Civil Engineering College Press. x + 65 + xix p. + unnumbered plates. See p. 3, 45 and plate LXXXV. [6 soy ref]

• **Summary:** “*Glycine hispida*, Maxim. See plate LXXXV. Soy bean or Japan pea; bhat (N.-W. Himalaya); kajuwa (Tarai); bhatnas, bhatwas (Nepal and N. Tirhoot).

“Natural order *Leguminosæ*. An annual clothed with ferruginous [rust-colored] hairs. Stems stout, suberect, or climbing. Leaves trifoliolate, on long petioles. Flowers small, reddish. Pods 2-3 seeded, axillary, linear oblong, recurved, and densely pubescent.

“The *Glycine Soja*, under which name the soy bean is described in the Flora of British India, is another species, and has been identified with *G. ussuriensis* of Regel, which grows quite wild in Manchuria [Manchuria], whereas this plant has nowhere been found as unmistakably wild...

“In these provinces its cultivation is confined to the lower slopes of the Himalaya and to a few of the neighboring plains districts. It is grown in poor soils during the rainy season, and represents a very inferior variety of the Japan pea, which under proper cultivation is a much more robust plant, with broader leaves and larger pods and seeds...

“The plant affords excellent fodder for all kinds of stock, if harvested before it is fully matured. From the seed a preparation called *miso* is largely used in China and Japan; and the green pods yield the well known sauce” [sic].

Plate LXXXV, drawn by H. Hormusii, is an excellent illustration of the cultivated soy bean plant (*Glycine hispida*, Maxim.) showing young and old leaves, flowers, and slightly hairy stems. An inset shows five different views and parts of the flower.

The author acknowledges his indebtedness to Dr. Watt’s most useful “Dictionary of the Economic Products of India” and Prof. Church’s “Food Grains of India.” Address: Director, Botanical Dep., Northern India.

291. Fesca, Max. 1893. Beitrage zur Kenntniss der japanischen Landwirtschaft. II. Spezieller theil [Contributions to an understanding of Japanese agriculture. II. Special part]. Berlin: Paul Parey. ix + 929 p. See 187-203, 872-73. Also published as vol. 2 of 2 volumes bound in one (Paul Parey, 1893). [7 ref. Ger]

• **Summary:** The chapter on the legumes (*Die Huelsenfruechte*, p. 187-203) is partly a review of the literature, with emphasis on soybeans (*Daizu, Omame, Sojabohne*). He begins by noting that for a nation like Japanese, where the people live predominantly on plant foods (*Pflanzenkost* = vegan diet), legumes are of major importance for the nutrition of the people, in that they offer a substitute for meat. They also supply important nitrogen to the soil. A table (p. 188) shows soybean production and yield in Japan from 1879 to 1887. The area increased from 441,699 *cho* to 466,315. Note: 1 *cho* = 2.45 acres. Production increased from 2,280,135 *koku* to 3,253,790. Note: 1 *koku* = 180 liters or 47.6 gallons. Yield increased from 5.1 *cho/koku* to 7.69. Soybeans like the climate of northeastern *Yezzo* [Hokkaido]. A table (p. 190) gives the date of planting, date of harvest, and days to maturity at Hakodate, Sapporo, and Nemuro (all on Hokkaido). Also discusses: Soy sauce (*Shoyusauce*; p. 190), dates for other locations, and fertilizer (*Diingung*) needs (p. 191-92, incl. phosphoric acid, potash, wood ashes, straw, and superphosphate). A table (p. 193) shows soybean area (in *cho*), production, and yield in 1887 in 6 parts of Japan (*Yezzo*, northern Japan, central Japan [which had by far the greatest planted area and production], western Japan, *Shikoku*, *Kyushu*).

Also discusses: The extraordinarily high nutritional value of the soybean (p. 196), yellow lupins (p. 196), defatted soybean cake (*Daizukasu*, p. 196), shoyu or soy sauce, *Shoyubohne*, and koji (p. 197-99), tofu, *Bohnenkaese*, and *Tofumame* (p. 199), Kori-Tofu and E. Kinch (p. 199).

His analysis of shoyu presscake (*Shoyukasu*) and okara (*Tofukasu*) showed that they contained respectively: Water 53.6 and 85.7%. Ash: 6.7 and 0.5%. Crude protein: 12.6 and 3.8%. Crude fat: 13.7 and 1.4%. Nitrogen-free extract: 6.7% and 5.4%. Crude fiber (*Rohfaser*): 6.7 and 3.2%. *Tofukasu* is a rather good livestock feed, and it is also eaten by poor people. The shoyu presscake, although richer in nutrients than okara, is used, at most, only in small amounts in feeds and then it must be cooked. Living yeast cells in the koji can easily cause stomach diseases and problems, and the presscake also has a high salt content. Note: This is the earliest German-language document seen that mentions okara (Oct. 2001), which it calls *Tofukasu*.

Miso (4 types; p. 200-02): (1) White miso (*Shiro-Miso*: Low salt content and short shelf life; keeps for 10 days); made with rice koji. Fermented for 3-4 days. (2) Edo Miso (*Yedo-Miso*): Higher salt content, shelf 5-4 months up to 1 year. Made with rice koji. Fermented for 10 days in

summer, 30 days in winter. (3) Farmhouse miso (*Inaka-Miso*): Very high salt content. Shelf life: About a year; made with barley koji. Fermented for about 11-12 months. (4) Sendai miso, also known as Red miso (*Sendai-miso: auch Aka-Miso genannt*): Red color and high salt content. Shelf life: several years. Made mostly with barley koji. Fermented for 1½ to 2 years.

Azuki (*Phaseolus radiatus*, with planted area, production and yield for 1883 and 1884, p. 203).

A table (p. 873) shows a valuation of Japan's agricultural production for about 17 major crops (Source: *Japan's Volkswirtschaft und Staatshaushalt*). For each crop, the annual production (in *koku*), the worth per unit, and the value of the total crop in yen are given. The most valuable crops are: Rice: 40 million *koku*, 200 million yen. Dehulled barley (*beschalte Gerste*): 7 million *koku*, 14 million yen. Naked barley (*nakte Gerste*): 5 million *koku*, 12.5 million yen. Soybeans (*Sojabohnen*): 3 million *koku*, 12 million yen. Wheat (*Weizen*): 3 million *koku*, 12 million yen. Address: Prof., Dr., Germany.

292. Japan, Dep. of Agriculture and Commerce, Agricultural Bureau. 1893. A descriptive catalogue of the agricultural products exhibited in the World's Columbian Exposition. Tokyo: Printed at the Seishibunsha. 115 p.

• **Summary:** Discusses 38 commercial products, with most divided into basic information and products made from the crop. Includes: Rice ("The manures applied to rice fields" include "green manures, farm yard manures, composts, ordures, fish manures, Sake kasu, Shoyu kasu, rape seed cake, and soy bean [cake] {p. 11}), barley ("It is much used as the material for making miso. Miso is prepared by pounding together boiled soy bean, salt, and the Koji {yeast}* prepared from common barley or naked barley; and is one of the most common articles of food in Japan." It is also used for making *ame* {p. 23}), wheat ("Wheat is used principally for preparing soy, vermicelli, onmen [sic, somen?], undon [sic, udon], and several kinds of confectionary" {p. 27}). It is also used for making *fu* or wheat gluten; "Roast 'fu' is used as food by boiling it with soup, soy, mirin, etc." {p. 29}), naked barley (*Hordeum nudum; hadakamugi*), Job's tears (*Coix lacryma; hatomugi*), soy bean (*Soja hispida; daidzu*), adzuki (*Phaseolus Radiatus, [azuki]*), sasage (*Dolichos Umbellatus*), haricot bean (*Phaseolus vulgaris*), peas, buckwheat ("Sobakiri" and "Kôri-soba" are both seasoned with soy sauce {p. 46}), rape seed (*Brassica chinensis, natane*) and rape seed oil (*natane abura*), sesame seeds (yellow {*kigoma*}, white {*shirogoma*}, and black {*kurogoma*} are displayed) and sesame oil (made from only yellow and white sesame), yegoma (*Perilla occimoides*), hemp, shiitake, chilli (*Capsicum Longum; tôgarashi*); "The fresh unripe fruit and leaves of certain varieties are eaten by cooking them with soy, sugar, "Katsuobushi" [katsuobushi],* etc." {p. 103}). Also

discusses: Dried daikon (p. 109-11), konjak flour (*Conophallus konjak*; *konniak-ko*, *konnyaku*; “For cooking, it is cut into small pieces and boiled with soy, soup, mirin, sugar etc.” {p. 112}), kampo (*Lagenaria vulgaris*; *kampio* [*kampyo*]; “It is used as an article of food by boiling with water, soy, sugar, mirin etc.” {p. 113}), wine.

Concerning the soy bean: In 1887, the total area of arable land devoted to soy bean cultivation is 4,633,152 *tan* (1 *tan* = 0.245 acre; thus 1,142,472.2 acres or 462,352.16 hectares). The total production of soy bean in the Empire was estimated to be 3,253,790 *koku* (1 *koku* = 180 liters, and 1 bushel = 35.2390 liters; thus 585,682,200 liters = 16,620,284 bushels).

Note: From the above figures, a yield of 14.53 bushels per acre can be calculated.

From 1887 to 1891 the price of soybeans per *koku* ranged from 4.180 yen in 1888 to 5.319 yen in 1890. Four specimens of soybeans were exhibited: Green soy bean (*awo-daidzu*). Black soy bean (*kuro-daidzu*). Common soy bean.

“Daidzu or soy bean is extensively used in Japan to prepare various kinds of foods indispensable for the daily meal, such as ‘soy’ or ‘shōyu,’ ‘tamari’ (a kind of soy), tofu, and miso. It is also largely used as a food for horses and manure [bean cake].

A analysis of the percentage composition of 3 kinds of soy beans analyzed by the Sanitary Experiment Station at Tokio is given; Green soy beans have the highest crude protein content (42.85% with 12.28% water). White soy beans (*shiro-daidzu*) have the highest ash content (5.00% with 13.46% water). Black soy beans have the highest fat content (18.26%, and the 2nd highest crude protein content 40.25%, with 11.09% water). Soy bean (*Itachi-daidzu*) from Saitama prefecture.

Although daizu is abundantly produced in Japan, since its daily consumption by all classes of people is great, it is now imported from China and Korea in large quantity. However imported soy bean is never used to make first class shoyu or soy, since the imported beans are inferior to those produced in Japan.

A table shows the quantity (in *kin*) and value (in *yen*) of soy bean exported from Japan from 1887 to 1891; 2.1 million *kin* were exported in 1889.

Four specimens of soy sauce are on display. Two brands (the trade marks are shown) are made by Mr. Mogi Shichiroemon, and two are made by Mr. Mogi Saheiji. All are made at Noda-machi, Chiba prefecture, Japan. Brands (a) and (c) are of the first quality; brands (b) and (d) are of the second quality.

A table shows the amount of shoyu made in Japan each year from 1887 to 1891; the amount ranges from 1,304,551 *koku* in 1888 to 1,157,982 *koku* in 1890. Since 1 *koku* = 180 liters, the amount made in 1888 is 234,819,180 liters. The total number of shoyu manufacturers in 1889 was 10,682. A

table shows the price (in yen) of various brands and quantities of shoyu from 1887 to 1892. A brief description of the process for making shoyu is given. The word “barm” is used instead of koji. Either barley or wheat can be used with daizu to make the barm. The “mixture is kept for about 25 months, stirring it occasionally with a paddle, say twice a day during winter and three times in summer, and when it is fermented to the required degree, soy is extracted by means of a soy press. The clear liquid thus obtained is pasteurized by heating to about 130° F. and when entirely cooled, it is transferred into casks.”

As shoyu is manufactured from daizu, wheat, etc., “it naturally contains a large quantity of albuminous matter. Shoyu is used in Japan as table salt is in Europe and America; consequently it is indispensable for daily use for cooking fish, meat, vegetables. etc. It has a remarkable merit when applying it in the place of sauces (like ‘worcestershire’) for beefsteak, fry, stew, etc. It answers better than salt when used with cold meat.

“Japanese soy or ‘Shoyu’ has long been exported to various parts of Europe where those who once taste it never fail in extolling its flavour. It is said that in Holland, Japanese soy has been used by many people from long years ago and highly esteemed by them.” A table shows the chemical composition of shoyu.

“Since the fine flavour of Japanese soy has recently become known to people abroad, several trial consignments were made both to Europe and America, and the result, though it has obtained a high reputation among them, still it has not yet become a leading article of export.” A table shows the annual amount and value of shoyu exported from Japan from 1887 to 1891. It ranges from 1,302.71 *koku* worth 11,091 in 1887 to 3,749.01 *koku* worth 41,028 yen in 1891. Thus the exports are growing rapidly.

Three specimens of tamari are on display, one dilute and one concentrated. The first two are made and sold by Mr. Ishima Mosaku. The 3rd (regular tamari) is made and sold by Mr. Morimoto Chōhachi. All are made at Yokkaichi in Miye [Mie] prefecture. Tamari is made chiefly in the prefectures of Miye, Aichi and Gifu [in central Japan]. Tamari is very similar to shoyu except that no wheat is used in manufacturing tamari.

Tofu (bean curd): “Tofu is one of the most favourite foods of Japanese and sold in all places both in towns and villages. The specimen here exhibited is called Yakidofu and is prepared by roasting partially dried ‘Tofu’ over a charcoal fire.” “As ‘Tofu,’ sometimes called bean curd, being a coagulated vegetable albumen of soy beans, it contains a large proportion of nutritious matter, most important to human life, especially, to those who subsist mainly upon vegetables.” The price of this Yakidofu is 18 yen per 10 dozen.

A specimen of Kōri-tōfu or frozen bean curd is displayed; it is made in Minami Adzumi-gun, Nagano

prefecture. “As it can be preserved for many years it is a suitable for provision for vessels undertaking long voyages.”

Concerning adzuki: There are both red adzuki and white adzuki. Early varieties are sown in the spring; late varieties {called aki-adzuki in the autumn}. “It is mostly used for preparing “An”—a pulpy mixture of boiled Adzuki flour and sugar, and in that state is largely used for making various kinds of confectionary.” It is also used to make “Sarashi-an or refined flour of ‘adzuki,” and “shiruko—a juice prepared by boiling the flour with a suitable quantity of water and adding sugar...” Note: Shiruko could be described as adzuki bean soup with mochi (rice cake).

Concerning rape seed: “Rape was formerly cultivated to a great extent but since the introduction of Kerosene Oil, the acreage of its cultivation has been much diminished, yet it is grown in nearly all parts of Japan and forms one of the important farm crops.”

293. Japan. Dep. of Agriculture and Commerce, Bureau of Commerce (Nôshômushô Shôkôkyoku). 1893. General view of commerce & industry in the empire of Japan. Tokyo: Printed by M. Onuki. ii + 491 p. See p. 22, 37, 67, 247, 324, 345, 349-51, 429-30, 440-41, 469-70, 474. Index. • **Summary:** Name of organization with diacritics is: Nôshômushô Shôkôkyoku. Pages 21-22: A list of all the 71 commodities exported from the port of Kobe in 1891 whose value exceeded ¥10,000. The largest by far was rice (5.5 million yen), followed by tea, matches, and camphor. Also: Kanten or colle vegetable [agar] 408,615. Rape seed oil 114,572. Sea weeds 22,372. Cut sea-weeds 17,765. Soy 11,483 yen.

Page 37: After the “Restoration of Meiji,” a new port was opened at Kobe, near Osaka. Its principal articles of merchandise were “rice, salt, sugar, tea, soy,...”

On pages 61-67 are tables of Japanese weights and measures and comparative tables with those of the empire of Great Britain, including both troy and avoirdupois. These show Japanese units for length (9 units; the standard is the shaku), area of land (6), capacity (5), and weight (6; the standard is the kwan). In 1885 the Government of Japan joined the Universal Metric Convention, and in 1891 established the present system of weights and measures.

Page 67: Industrial pursuits can be classified into original ones (that existed from ancient times, having first been introduced from China and Korea [Korea]) and those introduced from the West. Original industries include “salt making, sugar making, Sake brewing, soy brewing, oil producing,...”

Page 247: Exports (Class 22) include “Soy. The total value of the latest export is 41,029 yen, and chiefly exported to Hawaii.”

Page 324: A table shows imports (both weight and value) of “Oil-cake” from 1887 to 1891, from China, Korea,

and Other.

Page 345: Class II—Duty free goods includes “Oil cake.”

Page 349: Class II—Duty free goods, includes “All kinds of Mush-rooms, excepting Shiitake, Confectionaries, all kinds of Liquors, Vinegars, Soy [sauce], Oils, and Prepared Tobacco... Sea-weeds excepting Kobu [Kombu, seaweed],...”

Pages 429-30: “Table of the total quantity [weight in picul or catty] and value [in yen] of the commodities exported from Japan to the United States.” Soy [sauce] rose from 7,862 cattles worth 261 yen in 1887 to 9,744 cattles worth 1,146 in 1891.

Page 440-41: Chapter 7, “Commercial and industrial unions in Japan,” lists the 2,013 “trade unions” of businesses in the same general field. One of these, “Liquor and soy,” has 106 members.

Pages 469-70, 474: Table III lists “Industrial corporations.” One class, “Soy and miso,” has 4 members and capital of 75,500 yen. Address: Tokyo, Japan.

294. Koenig, Franz Joseph. ed. 1893. *Chemie der menschlichen Nahrungs- und Genussmittel. Zweiter Theil. Ihre Herstellung, Zusammensetzung und Beschaffenheit, ihre Verfaelschungen und deren Nachweis. Dritte Auflage* [The chemistry of human foods and food adjuncts (stimulants / enjoyables). Vol. 2. Their production, composition and properties, their falsification and proof of that. 3rd ed.]. Berlin: Verlag von Julius Springer. xvi + 1385 p. See p. 194-95, 389, 486-90, 529-30, 1044-53, 1071. Illust. Index. 24 cm. [12 ref. Ger]

• **Summary:** Summaries of early studies on the chemical composition of soybeans and various soyfoods, including some original studies. Discusses (p. 194-95) commercial sauces, including Japanese shoyu (“*Japanisch Soya oder Shoya oder Soy*”). See separate entry.

Discusses (p. 1044-51) adulteration of coffee and coffee substitutes. Under “Coffee made from legumes” (p. 1051) we read: “The soybean (compare p. 486) is also used for the preparation of a coffee substitute.” A table (p. 1053, based on Kornauth) compares the composition of 12 roasted seeds and fruits used to make coffee substitutes, including chicory, barley, figs, soybeans, white lupins, and chufa.

An illustration (p. 1071) shows different cellular layers of the soy bean sprout leaves (*Keimblättele*)—after an illustration by J. Moeller.

Also discusses: Peanuts (*Erdnusse, Arachis*, p. 322, 373, 385, 389, 494, 621, 686, 1051). Sesame seeds (p. 322, 385, 372, 389, 408, 494). Almonds (p. 322). Hemp (p. 322, 385, 493). Lupins (p. 372, 385, 389, 490-91, 1050, 1053, 1068-69). Chufa (*Erdmandel, Cyperus esculentus*, p. 1051, 1053). Address: PhD, Prof. (who teaches but does not have a faculty seat or voting rights) at the Royal Academy and Head of the Agricultural-Chemical Experiment Station at Muenster, in Westphalia, Germany (ordentlich)

Honorary professor der Koeniglichen Akademie und Vorsteher der agric.-chemischen Versuchsstation Muenster i. W.).

295. Sagot, Paul Antoine; Raoul, Edouard François Armand. 1893. *Manuel pratique des cultures tropicales et des plantations des pays chauds* [Practical manual for tropical crops]. Paris: Augustin Challamel. xxxii + 734 p. See p. 151-55. [Fre]

• **Summary:** In the chapter titled *Légumes et Culture Potagère*, there is a section on soybeans and soyfoods written by Edouard Raoul titled “Soja hispida Moench, Pois Soja, Pois oléagineux de Chine. Daïzou des Japonais.” It discusses the widespread culture of soybeans in southern Asia, China, and Japan. “The seed is very rich in oil and in casein soluble in water. Its consistency, especially before maturation, is very tender and fine. Unfortunately it does not have much taste of its own. The pod is very small and contains only 2-3 seeds. It is not easily opened. I prefer soybean seeds having a color that is clear fawn-colored or tawny (*fauve*) or greenish, to those which are black.”

“The plant must be sown from very fresh seeds. The germination (in Europe) is often very unequal, and many of the seeds don’t develop... Some seeds sent by me to French Guiana (*la Guyane*) have been cultivated by Mr. Bar au Maroni, and have borne fruit, but I don’t have precise details on their vegetation or ease of utilization.”

Brief descriptions are then given of miso, shoyu, tofou (tofu), *kouri-tofou* [dried-frozen tofu], “which is nothing but tofu dried using heat” [sic], and *uba* (yuba, “a product very rich in nitrogenous materials {proteins} and fats”), followed by a list of the names of the best-known Japanese soybean varieties, and a discussion of the difference between *Glycine hispida* Moench (*Kuro mame* [black soybeans], *no mame*, *kuzu*, *yama-daizou* [wild soybeans]), and *Glycine soja* Siebold et Zuccar. (*kiu mame* and *tsourou-mame*). Typical analyses of the stems and leaves, seeds, and entire plants are given based on research conducted by M. Joulie. A comparison of the nutritional value of soya and wheat is given based on the research of Wechler in Austria and Messrs. Fremy, Muentz, and Pellet in France. Dr. Menudier uses soy flour in diabetic diets.

Also discusses: Winged beans (p. 149-50; *Psophocarpus tetragonolobus* Dec., *Dolichos tetragonolobus* L., *Pois carré*). Peanuts (p. 150-51; *Arachide*, *Arachis hypogaea*). Bambarra groundnuts (p. 151; *Voandzou*, *Voandzeia subterranea* Dup. Th.).

Note 1. This is the earliest document seen (Jan. 2001) concerning soybeans in French Guiana, or the cultivation of soybeans in French Guiana. This document contains the earliest date seen for soybeans in French Guiana, or the cultivation of soybeans in French Guiana (1893). The source of these soybeans was Prof. E. Raoul, who was apparently in France.

Note 2. This is the earliest French-language document seen (Feb. 2004) that mentions dried-frozen tofu, which it calls “kouri-tofou.” Note 3. Sagot lived 1821-1888.

Note 4: This is the earliest document seen (Nov. 2003) concerning general information on soybean production in the tropics.

Note 5. Notice that “kuzu” is given as a name for the wild soybean in Japan. Address: 1. Docteur en Médecine, Ancien Chirurgien de la Marine, Ancien Professeur d’Histoire Naturelle a l’École Normale Speciale de Cluny; 2. Pharmacien en Chef du Corps de Santé des Colonies. Professeur du Cours de Productions et Cultures Tropicales a l’École Coloniale.

296. *Age (The) (Melbourne, Australia)*. 1894.

[Vegetarianism in Japan]. Dec. 29. p. 4. [1 ref]

• **Summary:** This untitled article begins: “Japan is moving. The *Sei-i-kwai*, a medical journal published in Tokio, has a number of original articles in the English language, and while the tone and treatment are clearly imitative, there is nevertheless evidence of a certain originality of thought. The following of an extract from an article by Dr. Ishizuka on the Natural Food of Man affords a good example of the peculiar style and treatment.” Observes that the teeth of men or closer in structure and movement to those of herbivorous, than of carnivorous animals. “Now, among the foods which are fitted to the normal teeth of men, there is nothing better than the cereals.” “It is the general opinion at present that meat and vegetables are necessary articles for animal nutrition, but it is contrary to the principal purpose of creation... Consequently Shaka, the founder of Buddhism, separated days for abstaining from meat and fish in order to regulate the use of them, and Confucius also gave an instruction against the excessive use of meat. It will be clear then that meat is not an article of daily use.”

“It is a well known fact that Buddhist monks never eat meat and fish, but they eat beans more than most people in various forms, *miso*, *natto*, etc.”

297. Cavendish, Alfred Edward John; Goold-Adams, Henry Edward. 1894. *Korea and the sacred white mountain: Being a brief account of a journey in Korea in 1891*. London: George Philip & Son. 224 p. Illust. (40 original, many color). Maps. Index.

• **Summary:** This book is an amplification of the author’s diary kept during a stay of a few weeks in Korea. Soy is mentioned as follows: Page 12: “Chefoo is the watering-place for Korea, Pekin, Tientsin, and Shanghai, but the foreign portion of it is very small, with three indifferent boarding-houses, but good pears and good bathing, if you do not mind a naked fisherman or two about. The chief exports appear to be straw plait for hats and bean-cake for manure.”

Page 33-34: Korean ponies, which carry foreign travelers and their belongings, are very small. The forage ration consists of about 2 lbs. of beans and millet boiled in water, and the whole poured hot into a trough; the average feed is two gallons of this mixture, given three times a day, and supplemented by 2 lbs. of chopped straw (rice or millet). "Other means of transport are found in donkeys, cattle, and coolies."

Page 48: Beans are becoming largely grown in Korea, for the demand for them in Japan is increasing, as they are used in the manufacture of Bean-curd, Miso, and Soy, while the Japanese are growing instead mulberries for sericulture. Wheat, barley, and rice, the latter of two kinds, one of which grows in dry soil, are also increasing, the export of these in 1890 being—barley, 5,260,533 lbs., value \$50,341; beans, 87,950,800 lbs., value \$1,004,762; wheat, 5,869,466 lbs., value \$60,381; rice, 116,622,000 lbs., value \$2,057,868." Page 54. "Besides flax, maize, and cotton, there were fields of the small millet (*Setaria italica*), substitute for porridge, and of the tall millet, Susu or Kaoliang (*Holcus Sorghum*), with stems 8 to 12 feet high and as thick as a man's thumb, turning to golden yellow or bright mahogany colour; from the latter kind the Koreans make the coarse cloth of which their rough garments are composed, when they do not use Manchester shirtings; also fields of beans, food for cattle and men, and the foundation of Japanese soy [sauce] and our Worcestershire sauce."

Pages 146-47: "He produced some samshu, a muddy fluid which smelt and tasted like Kaffir beer, with strong spirit in it; this peculiar taste is due to the bean-water [water in which soy beans have been boiled] which they mix with the spirit distilled from rice or millet. We were given a bottle of this liquor by the head-man, and the cook bought another of Chinese make, which was quite clear and less diluted with bean-water."

Pages 195-96: "Whilst waiting in the inn to-day, I had plenty of opportunities of observing the nauseous smell of the food greedily devoured by the Koreans. Five or six little dishes, containing various preparations of meat or fish, chillies, [soy] beans, cabbage, rice, &c., were ranged on a little table a foot high, and gave forth a most evil odour. A Korean likes his viands very highly seasoned, and in eating takes a little of every dish into his mouth, that he may enjoy the pleasant mingling of the different flavours." Note: At least one of these dishes probably contained Korean-style soy sauce or miso—but we cannot be sure.

Bean or beans (usually noted in passing as a crop with other crops) are mentioned on pages 66, 67, 68, 134, 138, 150, 191, 194, 199. Address: 1. Captain, F.R.G.S., 1st Argyll and Southern Highlanders, now in Edinburgh; 2. Captain, R.A..

298. Kellner, O.J. 1895. Ueber die Bereitung von Sake, Shoyu, und Miso [On the preparation of sake, shoyu, and

miso]. *Chemiker-Zeitung* 19(6):97-98; 19(7):120-21. Jan. 19. [6 ref. Ger]

• **Summary:** The first installment of this article gives details on the production of sake in Japan. The process can be divided into 4 steps: The production of a diastatic ferment (koji), the culturing of the yeast (*Hefezüchtung*), the main fermentation, and separation of the fermented liquid (sake). A detailed description is given of the preparation of both koji starter (the ash of camellia wood is used) and koji. The koji, made in koji cellars, contains a very powerful, inverting ferment (*ein sehr kräftiges, invertirendes Ferment*), whose effect goes further than the diastase of malt. The finished sake, which contains 11-14% alcohol, is consumed hot. Sake makers in Japan, like beer makers in earlier times in Germany, are very conservative and will hardly allow the introduction of a thermometer into their operations.

Shoyu or "Bohnen-Sauce" is called Soja or Shoja in Germany. About one-fourth of the wheat is finely pulverized. It is fermented in vats for various times ranging from 8 months to 5 years. Then the liquid is pressed out in cotton sacks. Finally the press-cake is mixed with salt water, and re-pressed to yield a lower quality product. The finished product consists of a mixture of soy sauces of different ages to improve the flavor and aroma. The best soy sauce is made from equal parts of 3-year and 5-year soy sauce. The press-cake is used for fertilizer.

A nutritional analysis of shoyu is given. Its relative density ranges from 1.182 to 1.193. In 1888-89 in Japan 10,634 shoyu plants produced 1.3 million koku [1 koku = 180 liters or 47.6 gallons, so 1.3 million koku = 234 million liters or 61.88 million gallons]. Per capita consumption was about 5.5 liters per year.

Concerning miso, the author discusses rice miso first, then barley miso, implying that the former is more widely used. He notes that miso can be made in only 4 days by incubating it hot. He then gives nutritional analyses of 5 types of miso that he made in 1889. "According to my estimation, at least 30 million kg, over half of the yearly soybean harvest, is used in miso production... Those soybeans that are not used for shoyu and miso production, serve largely for the production of tofu (*Bohnenkäse*)." The tofu is coagulated with a solution obtained from sea salt that is rich in magnesium chloride [i.e. nigari]. Address: Privy Councillor (Hofrath), Japan.

299. Hanausek, T.F. 1895. Correspondenz: Mittheilungen aus Japan [Correspondence: Communications from Japan. Enquiry on miso to Dr. Kellner]. *Chemiker-Zeitung* 19(11):222. Feb. 6. Letter dated 26 Jan. 1895. [Ger] Address: Vienna, Austria.

300. Kellner, O.J. 1895. Die Bereitung von Miso in Japan [The preparation of miso in Japan]. *Chemiker-Zeitung*

19(13):265. Feb. 13. [3 ref. Ger]

• **Summary:** This is an answer to questions from Dr. Hanausek to *Chemiker-Zeitung*. Kellner wrote his first major article on miso in 1893. There are 4 basic types of miso in Japan: 1. Shiro miso (white miso) is made from large-seeded soybeans (*grosskörnigen Sojabohnen*), rice koji, and salt. The ingredients are mixed at 70-90°C, and the product is ready after 3-4 days of fermentation. It will not keep longer than 10 days. Note 1. This is the earliest document seen (Oct. 2001) worldwide that mentions “large-seeded soybeans.” The next document to use that term appeared in 1936 in the USA.

2. Yedo miso (named after the early name for Tokyo) is made from the same ingredients as Shiro miso. The ingredients are mixed at 35-45°C, and a part of the salt is added in a cooled solution after the mixing. The fermentation takes about 10 days in summer, 30 days in winter. The miso will keep for 4 to 15 months at room temperature.

3. Inaka miso (countryside or peasant’s miso). Less expensive barley koji is used in place of rice koji. The soybeans are steamed for a very long time until they attain the desired reddish color. The fermentation takes 11-12 months, and the finished miso will keep for about 1 year. This type contains the most salt. To accelerate the fermentation, mix the ingredients while the soybeans are still hot.

4. Sendai miso (named after the city of Sendai) is substantially different in preparation from the other types. The cooked beans are rubbed to a paste, formed into prismatic pieces [*prismatische Stuecke*], and hung up with straw cords to dry for 1 to 1½ months. Then they are washed with lukewarm water, pulverized, sifted through a fine sieve, mixed with barley koji, salt, and cold water, and mashed in a mortar. The mass is put in the fermentation vat and roughly every 2 months reworked in the mortar. The fermentation, for which a cool room is used, is first ended after 1 to 1½ years, and the finished miso has a fine aroma, sweet taste, and reddish color. Because of the latter it is widely referred to as “red miso.”

In the production of special types of miso, the following ingredients may be added to the basic ingredients before the fermentation: Glucose or cane sugar, gingerroot, slices of eggplant, Japanese burdock, roasted soybeans (*geröstete Sojabohnen*), rice bran, sesame oil. Moreover, many families, for use in their homes, prepare a miso using the press-cake that is left over after making shoyu and that has not been washed with salt water. It is used in place of steamed soybeans, and it is permeated with a fermentation-instigating power. In place of koji, dehulled barley may be used. In commercial miso production, only rice- or barley koji is used.

Note 2. This is the earliest German-language document seen that refers to soynuts, which it calls (*geröstete*

Sojabohnen). Address: Prof., Dr., Moeckern [near Leipzig], Germany.

301. Wehmer, Carl. 1895. *Aspergillus oryzae*, der Pilz der japanischen Saké-Brauerei [*Aspergillus oryzae*, the mold of Japanese sake breweries]. *Zentralblatt fuer Bakteriologie. Series 2*. 1(4/5):150-60. Feb. 23; 1(6):209-20. March 11. [40 ref. Ger]

• **Summary:** The first detailed description of *Aspergillus oryzae*. Address: Privatdozenten an der Technischen Hochschule, Hannover.

302. Went, F.A.F.C.; Prinsen Geerligs, H.C. 1895. Beobachtungen ueber die Hefearten und zuckerbildenden Pilze der Arrakfabrikation [Observations on the yeast varieties and saccharifying fungi used in making arak, rice brandy]. *Zentralblatt fuer Bakteriologie. Series 2*. 1(13/14):501-04. July 10. Extracted from Verhandelingen der Koninklijke Akademie van Wetenschappen. II. 4(2):. [1 ref. Ger]

• **Summary:** Discusses raggi (ragi), tapej (tape, tapeh), and brem. Japanese miso and koji (as described by Kellner) are mentioned in passing. The four new species of microorganisms described are: *Monilia javanica*, *Saccharomyces Vordermanni*, *Chlamydomucor Oryzae*, and *Rhizopus Oryzae*.

303. Inouye, M. 1895. The preparation and chemical composition of tofu. *Bulletin of the College of Agriculture, Tokyo Imperial University* 2(4):209-15. Aug. [6 ref. Eng]

• **Summary:** One of the best early articles on tofu in Japan. Inouye tried to make a product resembling Swiss cheese with tofu, with moderate success.

“The efforts to prepare an easily digestible food from soya beans led to the preparation of *miso* and *natto*, two kinds of vegetable cheese, which were investigated some time ago in the laboratory of this college. (Footnote: On the preparation of *miso*, by O. Kellner, this Bulletin, Vol. 1, No. 6. On *natto*, by Yabe; Bulletin Vol. 2, No. 2).

“But the most interesting preparation is *tofu*, which consists principally of the protein-matter of the soya bean and which, according to the investigation of Prof. Osawa in Tôkyô, is as easily digestible as beef. This preparation is freshly made every day and sold in the form of tablets [cakes] about 10 c.m. broad, 2 c.m. thick, and 25 c.m. long [4 by 10 by 0.8 inches thick], is of snow-white appearance and of the consistency and taste of freshly precipitated casein of milk, but as there is no trace of bacterial action connected with its preparation, the name vegetable cheese is certainly not justified.” A table (p. 211) shows the composition of tofu as determined by Kellner.

“*Tofu* is also sold in another form called *kori-dofu* [dried-frozen tofu]. It is prepared by exposing the fresh *tofu* tablets to the action of frost, under which they shrink

considerably, lose water, and become more compact. While fresh *tofu* contains, on an average, 89.02% of water, *kori-tofu* contains only 15.32% in the air dry condition. The analysis of *kori-dofu* gave me the following results: Water 15.32%. Albuminoids 41.42%. Fat and lecithin 23.65%. Non-nitrogenous extract 15.05%. Cellulose 1.48%. Ash 3.08%.”

The author then describes the tofu manufacturing process, noting that it “is manufactured only on a small scale, by people who sell it in their own shops.” “The beans are first soaked for about twelve hours in water and then crushed between two mill-stones until a uniform pulpy mass is obtained. This is then boiled with about three times its quantity of water for about one hour, whereupon it is filtered through cloth. This liquid is white and opaque, exactly like cow’s milk; while the smell and taste remind one of fresh malt.” “I also analyzed the fresh milky liquid with the following results” for “Soya bean milk” and cow’s milk, respectively (p. 212): Water 92.53% / 86.06%. Albuminoids 3.02% / 4.00%. Fat 2.13% / 3.05% Fibre 0.03% /-. Ash 0.41% / 0.70%. Non-nitrogenous extract, including carbohydrates 1.88% /-. Milk sugar-/ 5.00%.

“The fat contained in this liquid as well as in the *tofu*-tablets was found to consist partly of lecithin. *Tofu* dried at 100° yielded 26.65% fat and 4.83 gr. of this fat yielded, after igniting with carbonate of soda and nitrate of potash in the usual way, 0.280 grm. of magnesium pyrophosphate, which, when multiplied by the lecithin-factor, 7.2703, corresponds to 2.035 grm. lecithin, amounting to 11.2% of dried *tofu*, leaving for the genuine fat 15.4% (Footnote: A portion of this lecithin was probably present in the soya bean as lecithalbumin; comp. Leo Liebermann, J.B. f. Thierchemie, 1893, p. 32, and E. Schulze, *Chemiker Zeitung*, 1894, No. 43); more of the latter, therefore, is left in the refuse than of the former.”

Note 1. This is the earliest English-language document seen (March 2001) that contains the word “lecithin” or “lecithalbumin” in connection with soy—in this case *tofu*.

“In the manufacture of *tofu*-tablets from the freshly prepared milky liquid, about 2% of concentrated brine as it is obtained as mother liquor from the preparation of sea salt, is added with constant stirring, whereupon a flocculent precipitate is soon formed which is separated by means of a cloth filter, slowly pressed, and then cut into tabular shape. I have tried to arrive at a satisfactory explanation of the nature of *tofu*, and have found that the salt-brine does not act by its chloride of sodium, but by the calcium and magnesium salts which are in it; for we can at once obtain precipitate from the milky liquid if we add a little calcium nitrate or magnesium sulphate, while we can not obtain any separation or precipitation by adding even considerable quantities of sodium chloride or sodium sulphate.”

“I have analysed a sample of the salt brine used for *tofu* making and found it to contain, besides chloride of sodium,

27.9% of chloride of magnesium and 7.0% of chloride of calcium.”

Note 2. This is the earliest English-language document seen (Oct. 2003) that contains the term “soya bean milk.”

Note 3. This is the earliest English-language document seen (Oct. 2003) that contains the word “milky” in connection with soymilk, or that uses the term “milky liquid” to refer to soymilk. It is the second earliest English-language document seen (Oct. 2003) that mentions soymilk, and the earliest that mentions it in connection with Japan.

Note 4. This is the earliest English-language document seen (March 2009) that uses the term “vegetable cheese” to refer to miso.

Note 5. This is the earliest English-language document seen (Feb. 2004) that uses the word “kori-dofu” to refer to dried-frozen *tofu*. Address: Nōgaku-shi [Prof. of Agriculture], Japan.

304. Prinsen Geerligs, H.C. 1895. Eenige Chineesche voedingsmiddelen uit Sojaboonen bereid [Some Chinese foods made from soybeans]. *Pharmaceutisch Weekblad voor Nederland* 32(33):1-2. Dec. 14. Summarized in *Teysmannia* (1897) 7:413-15. [5 ref. Dut; eng]

• **Summary:** Contents: Introduction. Tofu or bean cheese (*Tao-hoe of boonenkaas*). Chinese soja or Fao-ijoe (boonenolie; soybean oil). Japanese soya (soy sauce; In Japanese: Shoijoe; in Chinese: Sex-sze-ijve). Taucho or bean paste (*Fao toio of boonenbrei*).

In the section on *tofu*, soymilk is mentioned twice. Note 1. This is the earliest Dutch-language document seen (Oct. 2003) that uses the term *melkachtige, vette vloeistof* (“milky, fatty liquid”) or *gefiltreerde melkachtige vleistof* (“filtered milky liquid”) to refer to soymilk.

Note 2. This is the earliest document seen (March 2009) that mentions Indonesian-style miso, which it calls “Fao toio.”

At the end of the section on *tofu*, the author continues: Another widely used bean preparation is soy sauce (de Soja), of which two kinds exist: the Japanese and the Chinese Soja. The first-mentioned has already been repeatedly described, for example by König (1889, p. 241), further by J.J. Hoffman in his “Contributions to the Knowledge of the Language, Geography, and Ethnology of the Netherlands Indies” (*Bijdragen tot de Taal-, Land- en Volkenkunde van Nederl. Indië*; Vol. V, p. 192), and recently by G. Schlegel in T’oeng pao [T’oung Pao 1894] (Part 5, No. 2) and O. Kellner in *Chemiker Zeitung* (1895, p. 120). While I could not find anything in the literature about the preparation of Chinese soy sauce (*Soja*), I have copied the following from the manufacturers themselves.

Chinese Soja or Fao-ijoe (bean oil). For this, only black varieties of the *Soja hipida* [*sic, hispida*] *humida* β *atrosperma* or *Soja hipida platycarpa* β *melanosperma* have been used. Their seeds are cooked and the water poured off,

after which the beans are left in the sun for half a day to dry. Now they are cooled on big trays of woven bamboo out of the sun, then covered with leaves of a *Hibiscus* variety. On the beans there will always appear a type of mold, the *Aspergillus Oryzae* to be precise, which, at least on Java, appears every time again on moist soybeans exposed to the open air, but strangely enough does not appear on other foods. The beans are allowed to stand until the mold sporulates, which can be seen by the green color of the mold threads (hyphae), then they are dried again for some days and then put in a strong salt solution that has been cooled. This mixture is put in the sun for 8 days and afterwards it is boiled. The salt solution is then poured off from the beans and saved. The beans are boiled again and the water is added to the first salt solution. This process is repeated as many times as it takes to extract the residue completely.

“The decoction is strained through a fine sieve, boiled again, and the sugar from the areng palm, star anise (not the leaves), and some other herbs (which are available from Chinese druggists as “soya herbs”) are added. Finally, this dark brown, pleasantly aromatic liquid is boiled down until salt crystals start to appear on the surface, indicating that the liquid is completely saturated with salt. After cooling, the soy sauce (*soja*) is ready to use. It yields a spice which is used together with all different kinds of foods as a pleasant condiment, and in the Chinese, Javanese, and even the European kitchen on Java it is an irreplaceable ingredient.

Note 3. This is the earliest document seen (Jan. 2006) that describes the preparation of sweet Indonesian-style soy sauce (*kecap manis*).

“Soy sauce is sold in several quality grades, of which the best is a thick sauce with a special aroma. The lesser kinds are thinner and are made by diluting the thick soy sauce with salt water, while in the very low-grade kinds, instead of the pleasantly sweet-tasting palm sugar, the bitter, sour-smelling unassimilated molasses from sugar factories is used.

“The Chinese soy sauce appears as a black colored, thick, clear liquid in which sometimes a viscous sediment can be found. When diluted with water it turns turbid or cloudy, but after adding salt this cloudiness disappears. Here is an analysis of one of the most common varieties: Specific gravity 1.254, saccharose and glucose 15.60%, nitrogen containing substances (*stikstofhoudende stof*) soluble in alcohol 4.87%, nitrogen containing substances not soluble in alcohol 2.62%, nitrogen-free substances soluble in alcohol 0.25%, nitrogen-free substances (*stikstofrije stof*) not soluble in alcohol 0.75%, salt 17.11%, other ash components 1.65%, water 57.12%. Total 100%.

“The substances insoluble in nitrogen consist (except for peptone) mainly of legumin, which is soluble in strong salt solutions (compare Beilstein, *Handbuch Organische Chemie*, III, p. 1275) and will precipitate when diluted. This protein product (*eiwitstof*) has, by repeated precipitation

with alcohol and renewed dilution in water and salt, been cleaned and could be recognized as a legumin. The elementary analyses gave these figures: Carbon 51.6, hydrogen 7.1, nitrogen 15.9.

“Furthermore, the dilution in water was precipitated by ammonium sulfate, magnesium sulfate and sodium sulfate and not by a large quantity of sodium chloride.

“The nitrogen containing substances soluble in alcohol were leucine, tyrosine and aspartic acid, all breakdown products of legumin, plus a little ammonia. Nitrogen-free extraction substances are almost not present and consist of a little pectin and the black coloring agent from the skin of the soybeans, which gives the black color to the soya.

“Just like Kellner (*Chemiker Zeitung* 1895, p. 121) remarks, the composition of the soya is very similar to the one of meat extract, by which the big importance of this condiment in countries, where mainly vegetable type food is consumed, can be readily explained. Very peculiar moreover is the way in which during the preparation of the soya the heavily digestible protein substances, which are locked into the thick skinned cells of the soya, have been converted into an easily digestible, very delicious food.

“One lets the boiled beans mold by means of the *Aspergillus oryzae*, which above all has the quality of changing amyloextrine and starchy substances into sugars followed by carbonic acid and water breakdown. We can say that a microscopic investigation of a molded soybean shows that the mold threads (hyphae) penetrate the cell walls of the complete soybean and partly dissolve them so the contents will be more readily available. When the mold has used up all that food, as shown by its fructification, the beans are put into a strong solution of salt water so that the legumin will dissolve, producing a thick fluid liquid. At the same time, the broken down substances of the legumin will dissolve pepton [peptone], leucine, tyrosine and ammonia, next to the aromatic substance that will start to form in this stage. The continued manipulations, addition of sugar, herbs, etc., are of course of minor importance, but principally the clever way in which the mold is being used to dissolve the cell walls is highly interesting. This, like so many Chinese preparations, is completely empiric and no Chinese would have the slightest notion of what all this molding is about.”

This article describes the first attempt to identify the tempeh mold. In the section on Indonesian miso (taucho), the author notes: “In a similar way, in Java, other molds are used to make leguminous seeds into more digestible foods. Thus the presscake, which remains after making peanut oil and would be indigestible without further preparation, is subjected to the action of molds. In central and eastern Java *Chlamydomucor Oryzae* [now known as *Amylomyces rouxii*] is used, whereas in western Java an orange mold of the family Oospore (*Neurospora*) is used. In the former case, the food is called ‘bongkrek,’ and in the latter

'ontjom.' If soybeans are molded with *Chlamydomucor* the spice is called 'tempets' [sic, tempeh]. In the preparation, the seeds are boiled, spread, mixed with a little molded cake from a former batch, and left alone for a while until the mass is bound into a solid white cake.

"All the aforementioned molds have the ability to break starch and pectin substances down into sugars, by which means the cell walls are opened and the seeds made more easy to digest.

"In the case of the starch-containing peanut presscakes, the breakdown of starch into sugars, followed by the use of the resulting sugars, proceeds so rapidly that the cakes become warm and within 1 day about 5% of their weight will disappear.

Kagok Tegal 28.9.95.

Note 4. This is the earliest document seen (Feb. 2004) written only in Dutch that mentions tofu, which it calls "Tao-hoe" or "boonenkaas." Earlier documents written in Latin and Dutch also mentioned tofu.

Note 5. This is the earliest document seen written only in Dutch that mentions Indonesian miso, which it calls *Fao toio* or *boonenbrei*, and *tao tsioe*.

Note 6. This is the earliest document seen stating that Hibiscus leaves are used in Indonesia to make soyfoods—in this case soy sauce.

Note 7. This is the earliest document seen (Sept. 2003) that mentions "bongkrek"—but the explanation is incorrect. Address: Java, Indonesia.

305. Agricultural Society of Japan (*Dai Nihon Nokai*). 1895. Useful plants of Japan: Described and illustrated. Vol. 1. Tokyo: Agricultural Society of Japan. 233 p. See p. 5-6. 22 cm. [Eng]

• **Summary:** Discusses five varieties of *Glycine hispida* (p. 5-6) including: 21. Black soy-bean, Jap. *Kuro-mame*. "The beans have black skin. They are eaten either boiled or parched and also used to make *miso* (a kind of sauce with solid consistency), cakes, and *natto* (a cooked beans eaten as relish to rice)."

22. White soy bean, Jap. *Shiro-mame*. Similar to No. 21 but the beans have yellowish-white skins. "Numerous varieties as to size, form, or duration of growth occur, and all are eaten either boiled or parched. Many important services are due to this bean. They are used to make malt [koji], *miso* (a kind of sauce), *shōyū* (bean sauce), and *yuba* (a kind of food). The *mamenoko* (bean flour) [probably roasted soy flour or *kinako*] is made of the beans and is eaten with *dango*, etc. It yields a dye called *Mame-no-go*. Oil is also pressed out from these beans. They are used in many other different ways."

Note 6. This is the earliest English-language document seen (Dec. 2005) that uses the word *mamenoko* to refer to roasted soy flour.

23. Green bean, Jap. *Ao-mame*. Similar to No. 21 but with larger seeds of greenish color. "One variety with green colour both of the skin and albumen called *Konrinzai* occurs, and is used to make *Aomame-no-ko* (green bean flour).

24. Jap. *Goishi-mame*. The seed of this variety is flat and black. Eaten boiled.

25. *Gankui-mame*. "Closely allied to the preceding. The beans are larger and thinner in the middle, and eaten principally boiled."

Also discusses: Job's tears (*Coix lachryma*, Jap. *Tōmugi*, *Hatomugi*, p. 5. The grain is pounded in a mortar, cleaned, and "consumed as meal and *mochi*. An infusion of the parched and ground grains is used instead of tea, and is called *Kosen*)." Five varieties of adzuki beans (*Phaseolus radiatus*, p. 7-8). Pea-nut (*Arachis hypogaea*, Jap. *Tōjin-mame*, *Nankin-mame*, p. 9. "They are eaten parched or used in confectionery, or to extract oil. A variety with larger nuts about 3 times bigger was introduced from America in 1873"). Kudzu (*Pueraria thunbergiana*, Jap. *Kudsu*, *Makudsu*, p. 69-70, 92. "The largest roots are about 3-4 ft. and about the thickness of a man's arm. In winter they are taken, and an excellent starch is prepared from them. It is used for food or paste. The vine is used to make baskets, and its fibre is taken for cloth. The leaves are used to feed cattle"). Sesame (*Sesamum indicum*, Jap. *Goma*, p. 84. "There are three varieties, black, white, and brown colored. The latter variety is the best to take oil. The oil is principally used for dressing food. The grilled seeds are used to add to cakes, salads, etc."). Address: Tameike 1, Akasaka, Japan.

306. Atwater, W.O. 1895. Methods and results of investigations on the chemistry and economy of food. *USDA Office of Experiment Stations, Bulletin No. 21*. 222 p. See p. 193-94.

• **Summary:** In the section on "Food Consumption" a subsection titled "Japanese Dietaries" (p. 193-94) states: "The legumes are little eaten in their natural state but form the basis of a number of prepared foods and relishes, such as miso, tofu, and shoyu, all of which are made from the soja bean. The miso is prepared from cooked beans, which are rubbed to a thick paste and fermented with the ferment used in the preparation of the rice wine. Tofu, or bean cheese, is essentially the legumin of the soja bean, which is first extracted with water and then precipitated by the addition of the mother liquor (magnesium chlorid), obtained from the evaporation of sea water in the manufacture of salt. The cheese is eaten fresh. The shoyu sauce is prepared from a mixture of cooked and pulverized soja beans, roasted and pulverized wheat, wheat flour, salt, and water. The mixture is fermented with the above-mentioned rice ferment for 1½ to 5 years in casks. This sauce is used very largely by all classes."

Note: This is the earliest document seen (Jan. 2006) that uses the term “shoyu sauce.” Address: Prof. of Chemistry in Wesleyan Univ. Director of the Storrs (Connecticut) Agric. Exp. Station, and Special Agent of the U.S. Dep. of Agriculture.

307. Bretschneider, Emil V. 1895. *Botanicon sinicum*. Notes on Chinese botany from native and Western sources. III. Botanical investigations into the materia medica of the ancient Chinese. *J. of the Royal Asiatic Society, North China Branch. Series 2.* 29:1-623. See p. 9-13, 385-86, 389. [200+* ref. Eng]

• **Summary:** The single most important early work on Chinese botany written by a Westerner. Bretschneider, an M.D., lived 1833-1901. Contents: Introduction (p. 1-9). Abbreviated references to Chinese, Japanese and European books (p. 9-12). Medicinal plants of the *Shen Nung Pan Ts'ao King* [pinyin: *Shennong Bencao Jing*] and the *Pie Lu* [pinyin: *Mingyi Bielu*] (p. 13-). Pages 385-86: Section “229.–ta tou, Soy-bean, *Soja hispida*, Moench. P., XXIV, 1. T., XXXV.

“Comp. *Rh ya*, 29, *Classics*, 355.

Pen King:–*Ta tou*. The seed of the CC *hei dadou* [black soy bean] is used in medicine. Taste sweet. Nature uniform. Non-poisonous. When eaten it causes the body to become heavy.

Pie lu:–The ta tou is produced in T'ai shan [in Shan tung, App. 322] in marshes. It is gathered in the 9th month.

Su Sung [11th cent.]:–The ta tou is now generally cultivated in two varieties–the white and the black. The latter is used in medicine.

Li Shi-Chen:–There are many sorts of the ta tou–the black, white, yellow, gray, green and spotted [according to the colour of the seeds]. The black sort is used in medicine, is also a valuable food, and is employed in making CC shi (Soy [nuggets]. V. infra, 234, and Bot. sin., II, 355). From the yellow sort oil is expressed and CC tsiang [jiang] (sauces) and CC fu (beancurd [tofu]. See I.c.) are prepared. These beans are also eaten roasted. Besides the seeds of the ta tou, and the oil expressed from them, other parts of the plant are likewise officinal, viz. the CC ta tou p'i (the valves of the legume), the leaves, the carbonized straw and the flowers.

“See P. Smith, 88, *Dolichos soja*. -

“230.- CC [yellow soybean sprouts] *ta tou huang kuan*. P., XXIV, 7.

This drug is noticed in the *Pen king*. As T'ao Hung-King and Li Shi-Chen explain, this consists of the germs of the black Soy bean, produced by steeping the beans in water and causing them to germinate. These germs are used as food.

“This is still an article of food at Peking, but produced from the yellow Soy bean and called CC *huang tou ya*.

Pages 389-90: “234.–CC [soy nuggets] *ta tou shi*. P., XXV, 2. Comp. *Bot. sin.*, II, 355:–Soy. It is noticed in the *Pie lu*. Li Shi-Chen says it is prepared from the black soy bean.

“In the *Cust. Med.* the CC *tou shi* is mentioned as an article of import, p. 110 (183) Wu hu,–p. 164 (368) Shang hai,–p. 216 (89) Wen chou. It is said to come from Han kow and Ning po, and is identified there with salted black beans.–See also *Hank. Med.*, 45 [by R. Braun, 1888].

Appendixes. Chinese geographical names (p. 547). Alphabetical index of Chinese names of plants (p. 606). Alphabetical index of genus names of plants (p. 616). Address: Late physician to the Russian Legation at Peking.

308. Matsumura, Jinzô. 1895. *Shokubutsu mei-i*. Enumeration of selected scientific names of both native and foreign plants, with Romanized Japanese names, and in many cases Chinese characters. Tokyo: Z.P. Maruya (Maruzen K.K.). 8 + 26 + 17 + 321 + 62 p. See p. 134. With a 26-page European-language bibliography and a 16-page Japanese bibliography on botany. [606* ref. Eng]

• **Summary:** The author admits two species: *Glycine soja* (tsuru-mame or no-mame, indigenous) and *G. hispida* (of foreign origin).

Note: The National Union Catalog states that two similar editions of this work were published in Tokyo in 1895. The first, published by Maruya, is 321 p. The second, published by “Z.P. Maruya & Co. (Maruzen K.K.),” is 455 p. Address: Rigakuhakushi. Prof. of Botany, Tokyo Imperial Univ.

309. Yabe, Kikuji. 1895. Ueber einen vegetabilischen Kaese aus Sojabohnen [On a vegetable cheese made from soybeans]. *Landwirtschaftlichen Versuchs-Stationen* 45:438-39. [1 ref. Ger]

• **Summary:** This is a German summary of the English-language article by Yabe titled “On the vegetable cheese, natto,” which was published in 1894 in Japan in the *Bulletin of the College of Agric., Tokyo Imperial Univ.* 2(2):68-72. “The Japanese prepare from soybeans (*Sojabohnen*), which are rather rich in proteins, two types of cheese: miso and natto. Miso, made with koji, is consumed in greater quantities than natto (*Natto-Käse*; literally ‘natto cheese’).”

Note: This is the earliest German-language document seen (Feb. 2004) that uses the term *vegetabilischen Kaese* to refer to natto. Address: Japan.

310. Prinsen Geerligs, H.C. 1896. Einige chinesische Sojabohnenpraeparate [Some Chinese soybean preparations]. *Chemiker-Zeitung* 20(9):67-69. Jan. 29. (Exp. Station Record 8:72). [3 ref. Ger]

• **Summary:** This is a German translation of the author's 1895 Dutch article, but with two mistakes concerning tempeh corrected. He changed the name of the mold from *Chlamydomucor Oryzae* to *Rhizopus Oryzae* and he

changed the name of the product from “tempets” to “tempeh.” He added in conclusion that “it was finely sliced and enjoyed, mold and all.” But he continued, apparently mistakenly, to refer to tempeh as a Chinese soyfood.

He also improved his description of Chinese-style soybean paste, which he now calls *Tao-tjiung* (*Bohnenbrei*) [*doujiang*], and says has much similarity with the miso of the Japanese (p. 68 R.7).

Note 1. These two articles by Prinsen Geerligts ushered in the era of scientific research on tempeh by European microbiologists and food scientists.

Note 2. This is the earliest document seen (Dec. 1998) that contains the word “tempeh”—spelled with an “h” on the end. It is also the earliest German-language document seen that mentions tempeh, which it calls “tempeh.”

Note 3. This is the earliest German-language document seen (Oct. 2003) that uses the term *milchweisse Flüssigkeit* (“milk-white liquid”) to refer to soymilk. Address: Java, Indonesia.

311. Wehmer, Carl. 1896. *Aspergillus Wentii*, eine neue technische Pilzart Javas [Aspergillus Wentii, a new type of technical mold from Java]. *Zentralblatt fuer Bakteriologie. Series 2*. 2(5):140-51. March 27. [8 ref. Ger]

• **Summary:** Contents: General and background. The mold. 3. Physiology of the mold. 4. Comparison with similar mold varieties. 5. Diagnosis: *Aspergillus Wentii* [Wehmer] nov. spec.—a new species of mold.

This new species of mold was observed by Went in the preparation of Chinese-style soy sauce (*Tao Yu*, see vol. 1, p. 248) and Chinese-style soybean paste (*Tao-tjiung* or *Bohnenbrei*) according to the method practised in Java, and was described by Wehmer (XIX.) in 1896. It appears spontaneously on the boiled Soja beans that have been covered with *Hibiscus* leaves, and affects a loosening and disintegration of the firm tissue of the bean. Ten illustrations on p. 151 show different stages and parts of the mold.

Note: This is the earliest document seen (Feb. 2009) that contains the term *Tao-tjiung*, a term, and perhaps a product, that appears to be between *doujiang* (Chinese-style miso) and *tao-tjo* (Indonesian-style miso). Address: PhD, Privatdozenten an der Technischen Hochschule, Hannover.

312. Trimble, Henry. 1896. Recent literature on the soja bean. *American J. of Pharmacy* 68:309-13. June. [12 ref]

• **Summary:** One of the best early reviews of the literature, especially the European literature, published in the United States. Contents: Introduction. Nutritional composition of the soja bean based on analyses of 5 samples from China, Hungary, France, and Japan. Diastatic enzyme / ferment “present in the soja beans to a greater extent than in many other leguminous seeds (see Güssmann 1890). Composition of etiolated soja shoots [sprouts]. The oil [of the soja bean]. Starch content. Sugar content. Use of soybeans as food in

Japan. Miso. Natto. Tofu. Kori-dofu. Introduction of the soja bean to the United States in about 1888. Ability to obtain nitrogen from the air.

“The immediate excuse for the appearance of this paper is the fact that a number of contributions have recently appeared on the soja bean, notably from the College of Agriculture, Imperial University of Japan.”

“The oil may be extracted by pressure or by means of solvents [in the laboratory]; it is said to possess some laxative properties, is of a yellowish brown color, and has a slightly aromatic odor; it is intermediate between the drying and non-drying oils.” The following constants, based on Stingl and Morawski (*Chemiker Zeitung*, 1886, p. 140) are given: “Specific gravity at 15°C: 0.924. Point of solidification: 8-15°C. Fusing point of the fatty acids: 27-29°C. Point of solidification of fatty acids: 23-25°C. Temperature rise: 59°C. Iodine number: 121.3. Iodine number of the fatty acids: 122. Saponification number: 192.5. Note: Trimble actually got these constants from *J. of the Society of Chemical Industry*, 31 May 1893, p. 453-54, which summarised an Italian-language article by De Negriss and Fabris (1891), whose values confirmed those obtained by Stingl and Morawski.

Concerning tofu and soymilk: “A still more interesting preparation of the soja bean than either of the preceding [miso and natto] is *tofu*. This has been described and investigated by M. Inouye (*Bulletin Imp. College of Agriculture*, Vol. 2, No. 4 [1895]). The beans are first soaked for about twelve hours in water, and then crushed between two millstones until a uniform pulpy mass is obtained. This is then boiled with about three times its weight of water, and filtered through cloth. The liquid filtrate is white and opaque, very closely resembling cow’s milk, while the odor and taste remind one of fresh malt. On standing, the liquid becomes sour from the formation of lactic acid, and a coagulation of the casein takes place. The freshly boiled and filtered liquid is coagulated either by the addition of a portion of the sour liquid which has been set aside from a previous lot, or it is treated with about 2 per cent of a concentrated brine, such as is obtained as mother liquor from the preparation of sea salt.”

“Somewhere about the year 1888 the soja bean was introduced into the United States. It has been tried in a number of State Experiment Stations, and is gradually working into favor in the Southern States. In Kansas the plant has been found to withstand considerable drought... The plant is valuable for forage or soiling. The beans have been produced in South Carolina to the amount of 10 to 15 bushels per acre. On account of their richness in oil they have been used as a substitute for cotton-seed meal in feeding cattle, with very satisfactory results.

“The plant is believed to have, in common with most leguminosæ, the power of obtaining some of its nitrogen from the air, and hence, of acting as a soil renovator.”

Note 1. This is the earliest document seen (March 2002), published in the USA, that contains the word *tofu*, or *kori-dofu* [dried-frozen tofu], or that discusses soymilk.

Note 2. This is the earliest English-language document seen (March 2003), published in the USA, that uses the word “crushed” or one of its cognates (crushing, crushers, etc.) in connection with soybeans.

Note 3. This is the earliest U.S. document seen (Sept. 2002) that mentions the use of a solvent for extracting the oil from soybeans.

Note 4. This is the earliest English-language document seen (March 2008) that contains the term “iodine number” (regardless of hyphenation or capitalization).

Note 5. This is the earliest English-language document seen (March 2008) that contains the word “drying” in connection with soy oil and its iodine number, or that states that soy oil is intermediate between the drying and non-drying oils. Address: USA.

313. Yabe, Kikuji. 1896. Kaese aus sojabohnen [“Cheese from soybeans”]. *Zentralblatt fuer Bakteriologie. Series 2.* 2(23/24):769. Dec. 24. [2 ref. Ger]

• **Summary:** This is a German-language review of an article from the *Nederlandsch Landbouw Weekblad*. 1896. No. 82— from *Molkerei-Zeitung*. 1896. No 43. The Japanese prepare from the Legumin-rich soybean two types of cheese, which are named miso and natto. Address: Nôgaku-shi, Imperial Univ., College of Agriculture, Tokyo, Japan.

314. Guo Yunsheng. 1896. Jiuhuang jianyishu [Treatise on simple methods of alleviating famine]. China. Passage on soy reprinted in C.N. Li 1958 #344, p. 243-47. [Chi]

• **Summary:** Wade-Giles reference: *Chiu Huan Chien I Shu*, by Kuo Yün-Shêng. Qing dynasty. The major division titled “Monthly ordinances for famine relief” contains the following sections: In the third month, you can plant large-seeded black soybeans (*heidou*). In the third month, plant small-seeded yellow soybeans (*huangdou*): they can be used cooked as a main dish / grain (*fan*) or as a side dish / vegetable (*cai*), or they can be used for making jiang, soy nuggets (*shi*), soy oil, or tofu (*fu*). In the third month, plant large-seeded yellow soybeans (*huangdou*): they can be used in all the same ways as small-seeded yellow soybeans, described above.

In the fourth month, plant large-seeded black soybeans, small-seeded yellow soybeans, and large-seeded yellow soybeans: In the early fall, they young pods can be eaten [as green vegetable soybeans].

In the fifth month, plant the large-seeded black soybean, the small-seeded yellow soybeans, and the large-seeded yellow soybeans: everybody knows what to do with them.

The major division titled “Saving the soil when it is depleted” contains the following sections: Plant large-seeded black soybeans, small-seeded yellow soybeans, or

large-seeded yellow soybeans: Do not till the soil [which could cause erosion]. Note: Planting these legumes will help enrich the soil with nitrogen.

Plant large-seeded black soybeans, small-seeded yellow soybeans, or large-seeded yellow soybeans on land which has been infested by insects: Soybean seedlings contain no sugar, so the insects do not like to eat them.

New beans [those on land that has not been previously planted to beans] should be planted in a shady place: These new beans came from a place named Fanxian in Sichuan province. Note: This is apparently a famous soybean variety from a place where soybeans are apparently grown a lot.

Large-seeded black soybeans, small-seeded yellow soybeans, and large-seeded yellow soybeans should be planted in a shady place.

Barley can use black or yellow soybeans as green manure. Wheat can use black or yellow soybeans as green manure.

Barley can use dried black or yellow soybean leaves as manure. Wheat can use dried black or yellow soybean leaves as manure. Note: In times of famine, recycle all possible crop wastes.

In sandy places, use the dry empty pods of black soybeans or yellow soybeans as manure.

In hard soil, use dried leaves of black or yellow soybeans as manure.

Black soybeans and yellow soybeans should not follow (fears) the red flowered plant [safflower?] in rotations— according to certain old farmers. Note: Safflower has orange-red flowers, which were long used in China as a source of red dye. Southern melons (*nangua*) should not follow black or yellow soybeans in rotations. Bamboo shoot melons (*sungua*) should not follow black or yellow soybeans in rotations. False southern melons (*jianangua*) should not follow black or yellow soybeans in rotations. *Nuogua* melons should not follow black or yellow soybeans in rotations: in the midst of their growth, the melons will wilt. Black soybeans should not follow yellow soybeans in rotations, and vice versa.

The major division titled “Planting for famine relief” [plants which yield a crop quickly] contains two sections: Quick-maturing / early soybeans (*dadou*) or plum soybeans (*meidou*) can be planted any time (and staggered) from the 2nd month to the 5th month: Soybeans planted in the 2nd month will be ready to harvest in the 5th month. Small-seeded yellow soybeans whose seedlings are to be used as a vegetable (*huangdou miaocai*) can be planted for 3 months / three times [meaning unclear]: The grain changes into a vegetable; they are grown everywhere. (Translated by H.T. Huang, PhD, March 2003).

Bray (1984, p. 641): “A treatise on simple methods of alleviating famine.” 1896.

315. Nishimura, Ejuro. 1896. *Miso shōyu jōzōhen* [Miso and shoyu fermentation]. Tokyo: Hakubunkan. 316 p. See p. 18. 20 cm. Series: Tsuzoku nichiyō kagaku zensho, no. 11. [Jap]*

• **Summary:** More than 90% of the protein in soy beans is in the form of albuminoids.

Note: This is the earliest book in WorldCat / OCLC that has miso as a subject or title word.

316. Langworthy, C.F. 1897. Soy beans as food for man. *USDA Farmers' Bulletin* No. 58. p. 20-23. July 7. Revised (very slightly) in 1899. [1 ref]

• **Summary:** Describes and gives the nutritional composition of various Japanese soyfoods, including natto, miso (white, red, or Swiss), tofu, frozen tofu, yuba, shoyu.

“Tofu, or bean cheese, is prepared as follows: The beans are soaked in water for about twelve hours, and crushed between millstones until of a uniform consistency. The ground material is then boiled with about three times its bulk of water for about an hour, and filtered through cloth. The filtrate is white and opaque, having somewhat the appearance of milk. It has, however, the taste and smell of malt. This milky liquid, to some extent, resembles cow's milk in composition, as is shown by the following table:” The table, titled “Comparison of the composition of soy-bean milk and cows' milk,” shows that the two liquids (soy / cow) have the following composition: Water 92.53% / 86.08%, albuminoids 3.02% / 4.00%, fat 2.13% / 3.05%, etc.

“The protein in soy-bean milk is precipitated by adding the mother liquor obtained in the manufacture of salt from sea water, which contains considerable magnesium chloride. The precipitate is filtered off and formed into cakes with the hands. It is eaten in the fresh state or frozen. In the latter case it loses part of its water.”

“Though these soy-bean products are prepared chiefly in Japan and other eastern countries, their manufacture has been attempted to some extent in Switzerland and elsewhere...”

“Bean sausages in considerable variety are prepared in Germany, and formed part of the ration of the German soldier in the Franco-Prussian war. So far as can be learned, these are always made from ordinary varieties of beans and not from soy beans...”

“Under the name of coffee beans, soy beans are eaten to some extent in Switzerland as a vegetable, and dried and roasted are also used as a coffee substitute. Their use for this latter purpose is not unknown in America. The attempt has recently been made by certain dealers to place the soy bean on the market as a new substitute for coffee and to sell it under other names at an exorbitant price.

“Bulletin No. 98 of the North Carolina Experiment Station recommends soy beans as a palatable vegetable when prepared as follows: Soak the beans until the skins

come off and stir in water until the skins rise to the surface and then remove them. Boil the beans with bacon until soft, season with pepper, salt, and butter, and serve hot. If the beans are green the preliminary soaking may be omitted. No other references to the use of soy beans for human food in the United States have been found.”

Note 1. This is the earliest English-language document seen (Oct. 2003) that contains the term “soy-bean milk.” It is also the earliest U.S. government document or USDA document seen (May 2006) that uses the term “soy-bean milk” (or any other term containing the word “milk”) to refer to soymilk.

Note 2. This is the earliest document seen (Jan. 2005) concerning the work of the USDA with nutrition (or home economics) and soybeans. Address: Office of Exp. Stations, USDA, Washington, DC.

317. Trimble, Henry. 1897. The soy bean. *American J. of Pharmacy* 69:584-93. Nov. [11 ref]

• **Summary:** Much of this material is derived from Williams and Langworthy (1897). Illustrations (p. 585, from Williams, p. 5) show: (a) flowering branch of a soy bean plant (reduced 2/3), (b) one of the flowers (enlarged), (c) pods of a soy bean plant (reduced 2/3). One table (p. 588) shows the chemical composition of various kinds of forage made from the soy bean (fresh or air-dry substance, or water-free substance): Fodder (early bloom to early seed), soy-bean hay, straw, straw (hulls and vines after threshing), soy-bean seed, soy-bean meal (18.9% / 21.0% fat), soy-bean ensilage, corn and soy-bean ensilage, millet and soy bean ensilage. Another table (p. 591) shows the composition of the following “Soy-bean food products”: Fresh tofu, frozen tofu, natto, yuba, white miso, red miso, Swiss miso, and two types of shoyu. Address: USA.

318. Angell, Stephen H. 1897. Soya as food and fodder. *Consular Reports [USA]* 55(207):551-52. Dec. [2 ref. Eng]

• **Summary:** A remarkable article about all aspects of soybeans and soyfoods. It begins: “The following is a translation from an article by M. Henri Fortune, the well-known French agriculturist. ‘There exists a plant extensively cultivated throughout China, Japan, Cochin China, and Tonquin, of which the culture on clay and flinty clay lands would be an excellent experiment for agriculturists and persons interested in the progress of agriculture. This plant acclimatizes perfectly in Belgium.

“It is employed in the above countries as a food and for divers other purposes. Transformed by cooking into a pulp, which is mixed with salt and rice, we obtain the ‘miso,’ which constitutes the regulation breakfast of the Japanese. I have eaten this preparation in Yedo [Edo, Tokyo] in 1892, and I found it excellent in taste and very nourishing.

“Mixed with barley, fermented with water and pressed, this product yields a sirup known as the ‘soya,’ which is, so

to speak, the unique sauce for all and every Japanese dish, and is employed in such large quantities that the works in the town of Nagasaki have a yearly production of 2,000 tons. The soya also yields a very superior quality of oil, which advantageously replaces olive oil.”

“The bread made from the flour of the soya is as good as cake without sugar, and is very appetizing, and is not to be compared with gluten bread, which constipates.” Fortune believes that ‘soya bread is twice as nourishing as wheaten bread, five times as poor in starch, and ten times as rich in fatty materials, and, once its qualities are fully known, the soya may be pronounced the bread of the future.’ He recommends the use of soya in bread and biscuits for diabetic diets.

“In China, the soya replaces milk, which the Chinese do not drink at all. To make this milk, the grain must be crushed, put in a sieve, water slowly poured over it, and a product obtained having all the qualities of milk.

“The cheese made from soya is delicious. The grain is softened in water and pounded in a mortar. The pulp compressed in a cloth gives two parts; that which is hard is used to feed poultry, etc., and the other, which passes through the cloth, is albumen, and is put on the fire, the curds separated with the aid of rennet, and, when coagulated, a little salt is added.”

Of green vegetable soybeans he writes: “We have a project in hand to call together the principal Paris restaurant keepers this winter, to allow them to partake of this new vegetable, which will advertise it throughout the world under the patronage of such substantial connoisseurs.

“In a few years hence, one will buy soya at the grocers, as to-day one buys beans. It is an excellent substitute for hay, and keeps horses in good condition, and cows, when fed on it, will yield at least 20 per cent more milk daily than when fed on ordinary hay.

“The soya produces per hectare (2.471 acres) from 2,500 to 3,000 kilograms (5,512 to 6,614 pounds) of seed, especially if phosphate fertilizers are sufficiently employed.”

Note: This is the earliest document seen (Feb. 2001) concerning soybeans in Belgium, or the cultivation of soybeans in Belgium. This document contains the earliest date seen for soybeans in Belgium, or the cultivation of soybeans in Belgium (Dec. 1897). The source of these soybeans is unknown. Address: Commercial Agent, Roubaix, France July 13, 1897.

319. Lafar, Franz. 1897. Technische Mykologie. Ein Handbuch der Gaerungsphysiologie... Erster Band: Schizomyceten-Gaerungen [Technical mycology. A handbook of fermentation physiology... Vol. 1: Schizomycetic fermentations]. Jena: Verlag von Gustav Fischer. xiii + 362 p. See p. 290, 305-15. Illust. No index.

25 cm. Foreword by Prof. Dr. Emil Chr. Hansen (Carlsberg-Laboratorium, Kopenhagen [Copenhagen]). [7 ref. Ger]

• **Summary:** The introduction gives a detailed early history of the discovery of fermentation, microorganisms and *Mikrozymen / Mikrozyma* (microzymes) (including the work of Needham, Spallanzani, Franz Schulze, Theodor Swann, Schröder and Dusch, Louis Pasteur, and Béchamp), its relation to spoilage, the development of fermentation theory, and the nature of the fermentation organisms.

In Chapter 31, “Cheese fermentations and related decompositions,” section #179 is titled “Natto and miso.” These fermented foods are both made from the soybean (*Soja-Bohne*). For natto: The fermentation results in a partial transformation of the proteins into amides, peptones, guanin, xanthin, and tyrosin. The resulting mass is called natto in Japan, and is sold commercially. Note: Even though the word “enzymes” is not used, the author describes their action. This is the earliest document seen (July 2003) describing the action of enzymes produced during a soybean fermentation. At the end of the same section, koji, shoyu, tofu, nukamiso, taohu, and tao-yu (Chinese-style tofu and soy sauce) are mentioned—with 7 partial references.

Chapter 33, titled “The binding of free nitrogen by bacteria” (p. 303-17) discusses this relatively new idea in depth, including the discovery of root nodules on legumes, the origin and function of the nodules, and the nodule bacteria; Soybeans are mentioned on p. 303. Chapter 36, titled “Nitrogen-fixing bacteria” (p. 335-43) gives more details.

Note 1. Although there are many in-text citations, the bibliography for this volume appeared in Vol II, published in 1901-1907. An English-language translation of this volume was published in 1910.

Note: This is the earliest document seen (Sept. 2002) concerning the early history of microbiology and the discovery of enzymes. Address: Unestablished university lecturer (*Privatdozent*) for Fermentation-Physiology, Technical High School. Assistant at the Physiological Laboratory of the Royal Experiment Station for the Fermentation Industry at Hohenheim near Stuttgart [Germany].

320. *Tropical Agriculturist (Ceylon)*. 1898. The soy beans. 17(7):460. Jan. 1. [1 ref]

• **Summary:** “The Madras Government sends us a paper showing how Surgeon-Lieutenant -Colonel W.G. King, Sanitary Commissioner for Madras, addressing the District Medical and Sanitary Officer, Vizagapatam, the Deputy Collector of Bellary and the Tahsildar of [nearby] Saidapet [Tamil Nadu], on 8th September 1897, says:

“I have the honour to forward herewith ___ oz of soy beans, with the request that you will kindly cause them to be sown in any suitable place where they can be carefully watched as to progress of growth, and that you will oblige

me by stating the nature and amount of crop obtained and whether you think the beans can be grown successfully in your district from the experience so obtained. I need not remind you that the 'Soy bean' is probably the most nutritious form of readily assimilable pulse at present known, and that, should it prove possible to introduce it widely in this Presidency, it would prove of great advantage in jail administration and also to the poorer classes generally... In asking you to kindly undertake the experiment, I may state that it was only after long and persistent search in India and Burma that I have ultimately obtained specimen."

"Very few vegetable products are so rich as this bean at once in albuminoids and in fat or oil, the former constituent amounting on the average to 35%, and the latter to 19... In China and Japan three preparations are extensively made from the soy bean. Soy sauce is the best known of these, but more important are the soy or bean cheeses, and a kind of paste. The beans are sometimes pressed for the sake of the oil they yield; the residual cake forms an extremely rich cattle food, containing as it does 40 per cent. of flesh-formers and 7 per cent. of oil. The Soy bean may also be grown as a fodder plant. If cut just when the pods are fully formed, it makes an excellent hay, superior to that of the lentil."

321. *New York Times*. 1898. To stop customs frauds: Unusual instructions for United States consuls at foreign shipping ports. Appraisers to have facts. April 28. p. 4.
 • **Summary:** The U.S. Treasury Department and State Department are working "to stop undervaluations of imports at the Port of New York"

"Consuls at Hongkong and other Chinese ports are directed to forward at frequent intervals price lists or quotations on the following enumerated articles: Birds' nests, lichees preserved in tin, bamboo shoot, shrimp sauce, oyster sauce, plum sauce, bean sauce, soy sauce, preserved ginger, beansticks [yuba], and dried mushrooms."

322. Bishop, Isabella L. Bird (Mrs.) 1898. Korea and her neighbors: A narrative of travel, with an account of the recent vicissitudes and present position of the country. 2 vols. London: John Murray; New York, NY: Fleming H. Revell Co. Vol. 1: x + 261 p. Illust.

• **Summary:** In Vol. 1: Preface, p. vi: It must be evident to all who know anything of Korea, that a condition of tutelage, in some form or another, is now absolutely necessary to her existence as a nation. The nominal independence won for her by the force of Japanese arms is a privilege she is not fitted to enjoy, while she continues to labour under the burden of an administration that is hopelessly and superlatively corrupt."

Page xi: The author made four visits to Korea between Jan. 1894 and March 1897 as part of her larger plan to study

the characteristics of the Mongolian races. Her first journey produced the impression that Korea was the most uninteresting country she ever travelled in.

Soy [sauce] is mentioned—Pages 141-42: If, while traveling, no "clean room" existed in an inn, "I had a room in the women's quarters at the back, remarkable only for its heat and vermin, and the amount of ang-paks, bundles of dirty clothes, beans rotting [fermenting] for soy [sauce and paste], and other plenishings which it contained,..."

Page 177: "A quart of rice, which when cooked is of great bulk, is a labourer's meal, but besides there are other dishes, which render its insipidity palatable. Among them are pounded capsicum, soy [sauce], various native sauces of abominable odours, kimchi, a species of sour kraut [*kimchi*], seaweed, salt fish, and salted seaweed fried in batter. The very poor only take two meals a day, but those who can afford it take three and four."

Page 179: Koreans are omnivorous, and they waste nothing. "Cooking is not always essential. On the Han I saw men taking fish off the hook, and after plunging them into a pot of red pepper sauce, eating them at once with their bones. Wheat, barley, maize, millet, the Irish and sweet potato, oats, peas, beans, rice, radishes, turnips, herbs, and wild leaves and roots innumerable, seaweed, shrimps, pastry made of flour, sugar, and oil, *kimchi*, on the making of which the whole female population of the middle and lower classes is engaged in November, a home-made vermicelli of buckwheat flour and white of egg, largely made up into a broth, soups, dried persimmons, spongecakes, cakes of the edible pine nut and honey, of flour, sugar, and sesamum seeds, onions, garlic, lily bulbs, chestnuts, and very much else are eaten. Oil of sesamum is largely used in cooking, as well as vinegar, soy [sauce], and other sauces of pungent and objectionable odours, the basis of most of them being capsicums and fermented rotten [soy] beans!"

Page 182: The inn, if inn it was, gave me a room 8 feet by 6, and 5 feet 2 inches high. *Ang-paks*, for it was the family granary, iron shoes of ploughs and spades, bundles of foul rags, seaweed, ears of millet hanging in bunches from the roof, pack-saddles, and worse than all else, rotten beans fermenting for soy [sauce and paste], and malodorous half-salted fish, just left room for my camp-bed."

Note: This is the earliest document seen (Feb. 2009) that mentions Korean soy sauce, which it calls simply "soy." The author does not mention Korea's very popular soybean pastes—such as doenjang or kochujang. She may well have used the word "soy" to refer to both soy sauce and soy pastes.

Bean or beans are mentioned: Page 18: "Hides, [soy] beans, dried fish, *bêche de mer*, rice, and whale's flesh are among the principal exports. It was not till 1883 that Fusan was officially opened to general foreign trade, and its rise has been most remarkable."

Page 39: In the market booths are to be seen “rice, millet, maize, peas, beans,...”

Page 85: In 1894 they paid taxes on barley, beans, rice, and cotton.

Page 100: “... they conveniently export their surplus produce, chiefly beans, tobacco, and rice, and receive in return their supplies of salt and foreign goods.”

Page 112: In the Han River valley: “Every valley has its streamlet, and is barred across by dykes of mud from its head down to the Han—rice, with tobacco, beans, hemp, and cotton, being the great articles of export.”

Page 119: “Ma-Kyo is the river port of Che-chön... “It exports rice, beans, and grain from the very rich agricultural country on both sides of the river,...”

Page 123: “When full grown a bull can carry from 350 to 500 lbs. They are fed on boiled beans, cut millet stalks, and cut pea haulm, and the water in which the beans are boiled.”

Page 138: Korean ponies “are fed three times a day on brown slush as hot as they can drink it, composed of beans, chopped millet stalks, rice husks, and bran, with the water in which they have been boiled.”

Page 147: “There is much wet rice along the route, as well as dry rice, with a double line of beans between every two rows,...”

Page 149: “It is a most fertile tract, and could support a large population, but not being suited for rice, is very little cultivated, and grows chiefly oats, millet, and beans, which are not affected by the strong winds.”

Page 150: “There the villagers could not or would not take us in. They said they had neither rice nor beans, which may have been true so late in the spring.”

Page 185: “A smaller valley contains about 3,000 acres of rice land only, and on the slopes surrounding all these are rich lands, bearing heavy crops of wheat, millet, barley, cotton, tobacco, castor oil, sesamum, oats, turnips, peas, beans, and potatoes.”

Page 186: “In wheat, barley, or rye fields the sowing is in October, and the harvest in May or June, after which beans, peas, and other vegetables are sown.”

Page 187: “Grain, peas, and beans are threshed out with flails as often as not in the roadway of a village,...”

Page 189: The village “has several schools, and exchanges rice and beans for foreign cottons at Won-san,...”

Page 217: Newchwang “is a city of 60,000 souls, the growth of its population having kept pace with its rapid advance in commercial importance since it was opened to foreign trade in 1860. Several British steamers with big Chinese characters on their sides were at anchor in the tideway, and the river-sides were closely fringed with up-river boats and sea-going junks, of various picturesque builds and colours, from Southern China, steamers and junks alike waiting not only for cargoes of the small beans for which Manchuria is famous, but for the pressed bean-

cake which is exported in enormous quantities to fertilise the sugar plantations and hungry fields of South China.”

Page 218—Concerning Newchwang: “‘Peas,’ really beans (Footnote: *Glycine hispides* [sic, *Glycine hispida*] {Dr. Morrison}), are its chief *raison d’être*, and their ups and downs in price its mild sensations. ‘Pea-boats,’ long and narrow, with matting roofs and one huge sail, bring down the beans from the interior, and mills working night and day express their oil, which is as good for cooking as for burning.”

Page 235—Muk-den [Mukden] is a busy place, and does a large and lucrative trade, specially in grain, beans, and furs.”

Seaweed is mentioned on pages 38, 140, 142, 177, 179, 182, 198-99. Kimchi: p. 98, 147, 177. Address: F.R.G.S., Geographer, Great Britain.

323. Chamberlain, Basil Hall. 1898. A handbook of colloquial Japanese. 3rd ed. London: Sampson Low, Marston, & Co.; Tokyo: The Shuyeisha, Ichigaya; Yokohama, Shanghai, Hongkong, Singapore: Kelly & Walsh, Ld. ix + 567 p. 19 cm.

• **Summary:** Page 241: Court words, used by the Imperial Family, include: For miso they say “*o mushi* (lit. honourably steamed). English: bean sauce.” For tōfu they say “*o kabe*. English: Bean-curd.” O-kabe belongs also to the language of women.

Page 451: A poem of 31 syllables (5, 7, 5, 7, 7) says: Hototogisu / Jiyū jizai ni / Kiku sato wa,—/ Saka-ya ni san ri, / Tōfu-ya ni ni-ri!” Translation: “The village where one may listen undisturbedly to the cockoo’s song is—three leagues from the grog shop, and two from the bean-curd shop!”

Anglo-Japanese vocabulary: soy, *shōyu*, *shitaji*.

Japanese-English vocabulary: “kabe, (with honorific prefix *o*), the Court word for tōfu, bean-curd.”

Page 517: “miso, a kind of bean sauce.”

Page 520: “mushi, (with honorific prefix *o*), the Court word for miso, bean sauce.”

Page 538: “shōyu, soy (our word comes from the Japanese).”

Page 546: “tōfu, bean-curd: tōfu-ya, a shop for or seller of bean-curd.” Address: Emeritus Prof. of Japanese and Philology in the Imperial Univ. of Tokyo, Tokyo.

324. Fruwirth, Carl. 1898. Anbau der Huelsenfruechte [Cultivation of legumes]. Berlin: Verlagsbuchhandlung Paul Parey. xii + 274 p. See p. 11-13, 19, 47, 214-19 (Die Sojabohne), 264, 272-73. Illust. No index. 19 cm. [5 ref. Ger]

• **Summary:** Contents: Vernacular names in other countries. Botanical characteristics. Varieties, types (*Varietäten*, *Sorten*). Natural history. Uses and significance. Demands placed on the soil and climate (*Wärmesumme* or “heat units”). Use of fertilizers. Preparing the soil. Planting and

seed. Harvest and yields. Animal pests. An illustration (p. 215) shows the leaves and buds of a soybean plant (*Glycine hispida*).

Concerning varieties and types: In addition to the yellow-seeded form, soybeans (*Sojas*) with brown and with black seeds are also cultivated in Europe, and both likewise belong to the *Soja tumida* group. However the distribution of these latter two is insignificant. Haage and Schmidt, the seedsmen in Erfurt, sell a green-seeded form named Bluish-green Soybean (*Blaugrüne Soja*). 100 seeds weigh 8-13 gm. One liter of seeds weighs 712-717 gm. Individual seeds are 7-8.2 mm long, 5-5.5 mm wide, and 3.2-4 mm high.

Yield: The yield obtained in Hungarian Altenburg was 1,600 to 2,100 liters of seed and 1,300 to 1,600 kg of straw per hectare. The yield in Bavaria (*Bayern*), based on many trials, averaged 2,400 kg/ha of seed. Haberlandt calculated the yield, based on trial plots with small areas, at 1,685 kg/ha. The range in yield is considered to be 700 to 3,000 kg/ha of seeds and 1,200 to 3,000 kg/ha of straw.

A table (p. 266-73) gives the composition on an as-is and moisture-free basis of all legumes discussed in this book.

Note: Karl Fruwirth was born in 1862. Address: Professor at the Royal Agricultural Academy (an der Koenigliche Landwirtschaftlichen Akademie), Hohenheim [Württemberg, Germany].

325. *Proceedings of the American Pharmaceutical Assoc.* 1898. Report on the progress of pharmacy. 46:582-1120. See p. 857-60.

• **Summary:** In the section titled "Materia medica," under "Vegetable drugs," we read: "*Soy Bean-Food Value, etc.*—Referring to his paper on the soja bean (see *Proceedings* 1896, 634), in which he gave a summary of the literature on this valuable food product, Prof. Henry Trimble reproduces in the abstract a recent paper entitled "The Soy Bean as a Forage Crop," by Thomas A. Williams, with an appendix on "Soy Beans as Food for Man," by C. F. Langworthy, published in *Farmer's Bulletin*, No. 58, issued by the U. S. Department of Agriculture. While not adding anything new to the knowledge of the digestive ferment, which was prominently discussed in the summary above referred to, there is much valuable information that is of interest to the pharmacist.

Discusses *Glycine hispida*, soy bean, Prof. Haberlandt, yuba, shoyu, tofu, frozen tofu, natto, and miso.

See: Trimble, Henry. 1897. "The soy bean." *American J. of Pharmacy* 69:584-93. Nov.

326. Trabut, Louis. 1898. Le soja [The soybean]. *Algerie, Service Botanique, Informations Agricoles. Bulletin* No. 16. 7 p. [7 ref. Fre]

• **Summary:** The author, who demonstrates a good knowledge of American and European publications on the

soybean, has cultivated soybean varieties at Alger (Algiers) and Rouïba since 1896. The soybean resists dryness well. "Soya (*le Soja*) has remained a curiosity and is not well known among agriculturists. This is explained by the large diversity of soybean races having very different needs, and also by their very varied aptitudes and uses. This is not astonishing, for soya is cultivated in the country of its origin in both temperate and tropical zones, and is used for the feeding of animals, which eat it in the form of grain, hay, and green forage. It plays a major role in the human diet, providing abundant nutrition in the form of sauce, vegetable milk (*lait végétal*) or cheese [tofu], oil, flour, and bread. Soya completes rice, which is lacking in nitrogen. It is very widely used, furnishing, at a low price, a food which replaces meat or fish." Note 1. This is the earliest French-language document seen (Oct. 2003) that uses the term *lait végétal* to refer to soymilk.

"We have made the mistake of presenting soya as a rival to the haricot bean: the comparison turned out to be advantageous for the latter legume (haricot) and soya was rejected.

"In Algeria we think that, for the moment, soya must be looked at primarily as a forage plant. Very remarkable for its richness in nitrogenous materials and fat, it can be very useful in the feeding of animals, for fattening and for the production of dairy milk. Its role in the human diet is less evident, however the indigenous people might find a precious resource in this legume. The soya would perfectly complement 'bechna' [probably a local grain] and barley, which are used to make a flat cake which, is too low in nitrogenous materials."

"At this station the maximum yield has been obtained from a large yellow soybean obtained directly from China. On an area of 10 ares (1,000 square meters or 0.1 hectare) the yield has been 30 tonnes/ha of green forage giving about 70 quintals (7,000 kg) of dry forage." Note 2. This is the earliest document seen (Jan. 2001) that uses the word "quintals" (or quintal) in connection with soybeans. Note: 1 quintal = 100 kg.

"The yield of the seed had been high enough that cultivation of soybeans can be considered profitable. The early varieties have given the following yields in kg/hectare at the Rouïba Station in 1896/1897: Chocolate dwarf 1370 (not watered)/1735 (watered). Compact green 2980/1735. Yellow early 2500/1785. The spring of 1896 was very rainy, while the spring of 1897 was very dry and it was necessary to water the crop.

On page 7 is a brief description of miso, shoyu, and tofu (made by coagulation of soymilk).

Concerning nodulation: "Until this year, the numerous varieties of soya which I have cultivated at the station did not show any trace of nodulation on the roots; it is therefore evident that in our soils the special microbe which determines these nodules or tumors is not present. In Jan.

1897 I contacted Prof. Kirchner (at the School of Agriculture at Hohenheim), who is especially interested in the rhizobium of soya, and I asked him to send me several nodules in order to allow me to introduce to the soya crops here the microbe which assimilates atmospheric nitrogen. All the pots that were inoculated produced soybeans whose roots were covered with nodules the size of peas. It was not formerly possible to appreciate the influence of the nodules on the development of the plant. Field trials concerning this point will be made during 1898." An illustration (non-original, p. 2) shows a soybean plant (from an original in Carrière 1880). Address: Algeria.

327. Blasdale, Walter C. 1899. A description of some Chinese vegetable food materials and their nutritive and economic value. *USDA Office of Experiment Stations, Bulletin No. 68*. 112 p. See p. 32-36. [19 ref]

• **Summary:** "According to Prinsen-Geerligs [*Chemiker-Zeitung*, 20 (1896) 67-69], 'tao hu,' or bean cheese, is prepared from the seeds of the white variety of soy bean. These are allowed to soak for three hours in water, are then reduced to a thick paste, and the mass cooked. The cooked mass is strained through a coarse cloth. The filtrate consists of a milky-white liquid containing protein and fat. As soon as this becomes cool some material is added (for instance, crude salt containing magnesium chlorid [chloride]), which precipitates the proteid material, the fat being inclosed in the coagulated mass. The coagulated material is pressed and kneaded into small cakes. The cakes may be dipped for a few moments into a saline solution of curcuma. Variations in the process give rise to a number of varieties of bean cheese. This is essentially the method used by the Chinese of San Francisco in the preparation of the bean cheese used by them. It is sold either in the form of a freshly precipitated curd or in the form of small square cakes obtained by compressing the former material. It is usually cooked in peanut oil before being eaten and, in the author's opinion, is a palatable food. A partial analysis of one of the cakes gave 81.35 per cent, fat 5.19 per cent, and ash 0.80 per cent.

"The filtrate from the cooked soy beans resembles milk, and, on heating, a skin [yuba], not unlike that formed on milk, rises to the surface of it."

A large number of varieties of the soy bean are in cultivation in China and Japan, but only two were found in the Chinese markets in San Francisco, a yellow and a black variety. Aside from a difference in color, the two forms apparently do not differ materially from each other. The yellow variety is known as 'wong tau,' and is designated by the characters 'yellow' + 'bean,' while the black is known as 'hak tau,' and is designated by the characters 'black' + 'bean.'

"Both varieties obtained from the Chinese market in San Francisco grew readily in Berkeley, attaining a height of about 3 feet, and in spite of a very dry season produced an

abundant crop of seeds... The composition of the seeds of the two varieties is shown in Table 10 (p. 33), the average composition of American-grown soy beans being quoted also for purposes of comparison." On a dry-weight basis, the original black soy beans contained, on average, 0.35% more protein (39.62% vs. 39.27%) and 0.72% less fat (18.77% vs. 19.49%) than the yellow soy beans. The soy beans grown in Berkeley (average of 8 analyses) contained 38.1% protein and 19.00% fat.

Note: This is the earliest document seen (June 2007) concerning the cultivation of soybeans in California. This document contains the earliest date seen for the cultivation of soybeans in California (July 1899).

Photos show: The upper portion of a plant of the black soy bean (p. 33). "Mature plant of yellow soy bean" (showing only the pods and stems, no leaves, p. 35). Address: Instructor in Chemistry, Univ. of California.

328. Haury, Alfred. 1899. Die Schimmelpilze und ihre industrielle Anwendung [Molds and their industrial application]. *Oesterreichische Chemiker-Zeitung* 2(23):605-11. Dec. Series 2. [24 ref. Ger]

• **Summary:** Discusses three genera of molds: *Penicillium*, *Aspergillus*, and *Mucor*. Gives details and a review of the literature on the use of *Aspergillus* species of mold for the production of saké, koji, soy sauce, miso, and various other East-Asian foods. In 1896 a book titled *Les moisissures (The molds)*, by Calmette was published in Brussels, Belgium; he discussed sake, the chemical composition of koji, and the action of its diastase enzyme. "It was a Japanese named Jokichi Takamine who first had the idea of using koji in place of malt in American and European distilleries. In 1889 in the USA he was issued a patent on the process for using koji (or a mixture of koji and moto) in a fermentation to make of product containing 15-18% alcohol. The process was first tested in practice at Peoria, Illinois, is a distillery of the Distilling and Feeding Co., but not with the results that all the world had expected. Both Delbrueck (1894) and Saare (1895) had the opportunity to the process on the spot in 1894; in the opinion of Delbrueck koji is suited for use in place of malt in the saccharification of starches. For the production of koji, Takamine uses an inexpensive wheat bran instead of the typical rice. The process is then described in detail.

Aspergillus oryzae plays a key role in the production of two East-Asian foods: soy sauce (*Shoyu-Sauce*) and miso. The former is made with wheat, soybeans, salt, and water; miso is made from soybeans, koji, salt, and water. For details see Kellner's publication "On Saké, Shoyu and Miso." In Java, another species of *Aspergillus*, namely *A. Wentii* is used to make their soy sauce (*Sojasauce*), according to Prinsen-Geerligs.

Also discusses the use of *Mucor* species, such as *Amylomyces rouxii*, in the production of spirits or brandy

from dehulled rice. In 1892 Calmette was head of the Pasteur Institute in Saigon; today he is director of the Pasteur Institute in Lille, France. He has taken considerable interest in *Mucor* species, and published the results of his research in his 1896 book. Colette has a factory at Seclin near Lille. Colette and Boidin have formed the Amylo Society (*Société d'Amylo*) in Lille. Address: Chemist, Austria.

329. Chamberlain, Basil Hall; Mason, W.B. 1899. A handbook for travellers in Japan: Including the whole empire from Yezo to Formosa. 5th ed., revised and augmented. London: John Murray; Yokohama, Shanghai, Hongkong, Singapore: Kelly & Walsh, Ltd. ix + 577 + 53 p. "With 28 maps and plans and numerous illustrations." Index.

• **Summary:** Contents: Introduction. Routes: 1. Eastern Japan. 2. Routes connecting Tokyo and Kyoto. 3. Central Japan. 4. Western Japan and the Inland Sea. 5. The island of Shikoku. 6. The island of Kyushu. 7. Northern Japan. 8. The island of Yezo [Hokkaido]. 9. Luchu and Formosa. Glossary.

Page 10: Provisions: "Curry-powder will often help to make insipid Japanese dishes palatable, and *shōyu* (soy) adds a zest to soups." "The following Japanese articles of food are considered palatable by most foreigners: *Kaseteira*, sponge cake. *Miso-shiru*, bean-soup [miso soup],... *Sakana no tempura*, fish fritter. *Unagi-mesihhi*, layers of rice with eels done in soy. *Yokan*, sweet bean-paste" [azuki].

Gods and Goddesses (p. 56): Toyo-Uke-Bime, also called Uke-Mochi-no-Kami, is "the Shinto Goddess of Food or of the Earth. The *Nihongi*, one of the two principal sources of Japanese mythology and early history..." The Moon God killed the Goddess of Earth. From the body of the murdered Earth sprang cattle and horses, millet, silkworms, rice, barley, and [soy] beans, which the Sun-Goddess decreed should thenceforth be the food of the human race. In the *Kojiki* version of the myth, it is Susa-no-o who slays the Goddess of Food, and there are other differences of detail."

Eastern Japan (p. 225): "Tenjin-yama or Minato (Inn, Suiryō-kwan). This prettily situated place contains a few sake breweries and soy manufactories, the produce of which is shipped in junks to Tokyo;..."

Mountains of central Japan (p. 281): "Narada (accommodation at a Buddhist temple)" consists of but a few households; the people are isolated and poor. "Rice, sake, and soy [sauce] are with them luxuries to be indulged in on rare occasions, their ordinary food consisting only of millet and potatoes."

Central Japan (p. 334): "Yuasa (Inn, Edo-ya) is a dull town, noted for its manufacture of soy."

Central Japan (p. 336): "There is a current belief to the effect that Koya-san is so precipitous that such luxuries as

bean-curd (*tōfu*) cannot be carried up to it, but that the priests place coppers on the temple balustrade, with which the crows fly off to Kumano and bring back bean-curd in return."

Central Japan (p. 389-90): Kasuga no Miya (a Shinto temple). The oratory "is now used by the townspeople on the evening of the Setsubun (3rd February) for the performance of the ceremony of scattering [roasted soy] beans to expel evil spirits."

Central Japan (p. 403): Matsudō. "Travellers will remark the great industry and economy practised in the agriculture of this district, even the ridges between the rice-fields being sown with beans or barley." Note 1. Soy beans were often planted on such ridges, then harvested as green vegetable soybeans.

Note 2. The last 53 pages of this book are advertisements. Address: 1. F.R.G.S., Emeritus Prof. of Japanese and Philology in the Imperial Univ. of Tokyo, Tokyo; 2. Corresponding member of the Royal Scottish Geographical Society, and late of the Imperial Japanese Dep. of Communications.

330. Douglas, Carstairs. 1899. Chinese-English dictionary of the vernacular or spoken language of Amoy, with the principal variations of the Chang-chew and Chin-chew dialects. New edition. London: Presbyterian Church of England. xix + 612 p. 27 cm. [2 ref]

• **Summary:** The Preface begins: "The vernacular or spoken language of Amoy, which this dictionary attempts to make more accessible than formerly, has been also termed by some 'The Amoy Dialect' or 'The Amoy Colloquial;' and it particularly coincides with the so-called 'Hok-kien Dialect,' illustrated by the Rev. Medhurst in his quarto Dictionary under that title."

On page 58, under the character for *chiang-chiu* a sort of sauce or condiment. *tau chiu* sauce made from beans and flour. *chiu-chheng* the thinner part of *tau chiu*. *koan-kiu-chiu* this sauce seasoned with cayenne pepper. *chiu-liau* various sorts of vegetables preserved in *tau chiu*. *chiu-koe* pumpkins so preserved. *chiu-kiu* ginger so preserved. *chiu-mia-chia* wheaten dough balls in this sauce.

On page 156, under the character for *hu-tau-hu* bean curd shaped into squares (from the pulpy "tau-hoe"), but not yet pressed. See *tau*.

On page 176, under the character for *iu* meaning oil or fat. On the last line of the right column—*tau-iu* soy [sauce]. *e-tau-iu* dark-colored soy. *seng-iu* the common oil from ground-nuts. *moa-iu* oil from hemp-seed.

On page 423, under the character for *shi-si* salted vegetables and fruits. *tau-si* pickled and salted beans [soybeans]. *tau-si-pe* black beans [soybeans] boiled, dried, and kept till mouldy, to be made into soy [sauce]. *tau-si-phoh* beans from which soy has been made, broken down

small. *mi-si* (Cantonese) = *tau-chiu* (Amoy), sort of salted sauce.

On page 480, under the character for *tou-tau* peas or beans; pulse. *tau-khe* bean cake from North China, used as manure. *tau-iu* soy (see *iu*). *tau-chiu* a thick salt sauce made from pulse. *tau-si* salted beans. *tau-hoe* soft bean curd not yet pressed or shaped. *tau-chiu* same. *tau-hu* bean curd shaped but not yet pressed. *tau-hu-phe* same, but made into thin sheets for wrapping around eatables. *teh tau-hu* to shape the *tau-hoe* into pieces of *tau-hu*. *tau-koa* bean-curd that has been pressed in a cloth. *tau-ju* same cut into smaller squares and salted. *tau-kiam* (Cantonese) same. *tau-che* refuse from manufacture of bean-curd [okara]. *tau-thau* same. *the-tau* = lok-kha-seng, the Arachis, ground-nut, or pea-nut, from which oil is made. *tho-tau* same.

Note: This is the earliest English-language document seen (Nov. 2008) that uses the term “pickled and salted beans” to refer to soy nuggets.

Note 2. The first edition of this book was published in 1873. In 1970 the Ku-T’ing Book Store in Taipei published a photoreprint of the 1899 London edition; it was bound with a Supplement photoreprinted from the 1923 Shanghai ed. (612 p., 27 cm). Carstairs Douglas lived 1830-1877. Address: Rev., M.A., LL.D. Glasgow, Missionary of the Presbyterian Church in England.

331. Heuzé, Gustave. 1899. Les plantes alimentaires des pays chauds et des colonies. 2 ed. [Edible plants of the tropics and colonies. 2nd ed.]. Paris: Librairie Agricole de la Maison Rustique. xii + 381 p. See p. 174-78. 19 cm. Series: Cours d’Agriculture Pratique. [Fre]

• **Summary:** The soybean is referred to in French as “Dolic du Japon ou soja.” An illustration (non-original, p. 175; by Thiebault, from Carrière 1880) shows the soybean plant (titled *Dolic du Japon ou soja*) and a cluster of pods. Its scientific names are *Soja japonica*, Sav. or *Soja hispida*, Moench. Synonyms are *Dolic soja*, and *Dolic à café*. A botanical description is given. “Varieties which are most widely cultivated are the yellow soybean (le soja jaune; *Soja ochroleuca*) and the black soybean (le soja noir; *Soja hispida*). A sub-race named *soja d’Étampes* is the most widely appreciated in France. It is very productive but it needs 4-5 months to ripen its seeds. The soybean is an annual; it was introduced to France from China by de Montigny under the name *pois oléagineux*. It is successfully cultivated in China, Japan, the Indies, the Moluccas, etc. It is rather easily sold in the green state at various markets. Its principal merit is its ability to resist drought. It needs as much heat as haricots...

“The Japanese transform the seeds of this legume into a puree (tofu; *ten-hu*) or a paste (*miso*) with which they make a sauce (soja), which they use to prepare various seasonings named *shoyu* or *sooju* and *tofu* or *daizu*.

“Soybean seeds germinate very irregularly and very late in Europe, especially in their second year of existence. An analysis of the soybean seed on a moisture-free basis, conducted by Mr. Joulie, is given.

“The soybean is richer than wheat in fatty and proteinaceous materials. When one prepares dry soybeans, it is useful to soak them in water for 8-10 hours before cooking, for they are naturally very hard. They are also eaten in the shelled green state.

“The varieties with branches [les variétés à rames] are not yet cultivated in Europe.” Gustave Heuzé lived 1816-1907. Address: Membre de la Société Nationale d’Agriculture. Inspecteur Générale Honoraire de l’Agriculture.

332. Langworthy, C.F. 1899. Appendix: Soy beans as food for man. *USDA Farmers’ Bulletin* No. 58 (Revised ed.). p. 20-23. [1 ref]

• **Summary:** This part of Bulletin 58 is identical to the original July 1897 edition. Address: Ph.D., Office of Exp. Stations, USDA, Washington, DC.

333. Paillieux, Auguste; Bois, D. 1899. Le potager d’un curieux: Histoire, culture et usages de 250 plantes comestibles, peu connues ou inconnues. Troisième édition entièrement refaite [The inquisitive person’s kitchen garden: History, culture, and uses of 250 edible, little-known or unknown plants. 3rd ed. completely redone]. Paris: Librairie Agricole de la Maison Rustique. xvi + 678 p. See p. 575-625. Illust. Index. 25 cm. [2 ref. Fre]

• **Summary:** The information about soy in this 1899 third edition is very similar to that in the 1892 second edition, but the page numbers are different. Contents of section on soy: Introduction: Work of the Society for Acclimatization with soy, structure of this book, excerpts on soy from past issues of the *Bulletin the Society for Acclimatization*. Botany of the soybean. 1. Soy in Japan: Kaempfer’s writings, including miso and shoyu, Japan at the World’s Fair of 1878, miso, shoyu, tofu. 2. Soy in Cochin China: Black soybeans, various foods. 3. Soy in China: Soy oil, tofu and fermented tofu, soy sauce, other uses. 4. Soy in Austria-Hungary. 5. Soy in France: Historical, varieties, cultivation, utilization.

The author’s full name is Nicolas-Auguste Paillieux (lived 1812-1898; he died on 8 Feb. 1898 at age 85). An illustration (non-original line drawing; p. 576) shows a mature soybean plant bearing many pods, plus a close-up of three pods to the lower right of the plant (from an original in J.R.F. 1882). Note: Desire Bois lived 1856-1946.

Other related or interesting subjects (listed alphabetically): Adzuki (p. 224). Amande de terre: See Chufa. Amarantus / Amarante (p. 14-16). Arachide / Arachis hypogæa (p. 32-35). Chufa / *Cyperus esculentus* / *souchet comestible* (p. 571-75). Daikon (p. 173). Gado-gado (p. 224). Gobo (p. 45). Jinenjo (p. 246). Katakuri (p. 336).

Koniaku [konnyaku] (p. 289). ko / kudzu (p. 300-315). Mioga (p. 396). Moyashi (p. 226). *Phaseolus radiatus* / azuki (p. 222-24). Pistache de terre: See arachide. Quinoa (p. 523-25). Udo (p. 448). *Voandzou* / *Voandzeia subterranea* (p. 650-53). Wasabi (p. 420). Yama gobo (p. 496). *Zingiber mioga* (p. 396). Address: 1. Honorary member of the Council of the Societe Nationale d'Acclimatation 2. Asst. de la Chaire de Culture, Museum d'Histoire naturelle de Paris.

334. Saito, Akio. 1899. [Chronology of soybeans in Japan, 1868 to 1899, first half of the Meiji period] (Document part). In: Akio Saito. 1985. Daizu Geppo (Soybean Monthly News). Feb. p. 11-12. [Jap]

• **Summary:** 1871 July—A brewing tax (*jozo-zei*) and patent tax are levied on clear sake (*seishu*), unclear sake (*dakushu*), and shoyu. But in 1875 the two taxes on shoyu are discontinued because shoyu is considered one of the necessities of life.

1873—At about this time a sincere farmer, Itoi Mosuke, of Akita prefecture finds a special type of soybean and names it Itoi-mame. Later the name changes to Ani and they are cultivated all over Akita prefecture.

1873 May—The Japanese government exhibits soybeans at the exposition in Vienna, Austria. And the USA becomes interested in soybeans. Also at this expo, Kikkoman uses glass bottles for their shoyu for the first time.

1875—At about this time, shoyu becomes so popular overseas that a German-made fake shoyu appears.

1877—There are now 40-50 miso shops in Tokyo, centered in Hongo (which comprises the areas of Yotsuya, Fukagawa, Shiba, Shinagawa, Ooi, Oshima, etc.).

1877 Feb.—Dried-frozen tofu (*kôri-dôfu*) is purchased as an army supply for the Seinan no Eki war.

1877 Aug.—The first domestic exposition is held in Japan, at Ueno Park, Tokyo. Kikkoman shoyu wins an award.

1878—The quick method of miso fermentation (*miso no sokujo-ho*) is mentioned in a government report.

1878—The first official government statistics on soybean cultivation in Japan start to be compiled. This year the area is 411,200 hectares and production is 211,700 tonnes [yield = 514 kg/ha].

1879—The price of high-quality miso in Tokyo is 4 *sen* per kg. In 1980 the price is 303 yen/kg—or about 7,575 times higher. Note: From now on prices from the Meiji era come from a book titled *History of Lifestyle of the Meiji, Taisho, and Showa periods as seen from prices of the day (Nedan no Meiji Taishi Showa Fuzoku Shi)*. It is published by the Weekly Asahi (*Shukan Asahi*).

1882—Around this time many small shoyu manufacturers appear and quite a few bad quality shoyu products are on the market. Shoyu loses considerable consumer confidence.

1885—The price of 1 keg (*taru*, 16.2 liters or 9 *sho*) of shoyu at this time is as follows: Highest grade (*jo no jo*) (Kikkoman) 1 yen, 40 sen; Middle upper grade (*jo no chu*) (3 makers including Yamasa) 1 yen 38 sen; Lower upper grade (*jo no ge*) (Kamibishi) 1 yen 25 sen; Upper middle grade (*chu no jo*) (Fujita) 1 yen 25 sen; Lower middle grade (*chu no ge*) (Chigusa) 1 yen 17 sen; Lower grade (*ge*) (Kinka) 80 sen. Yamaguchi Yoshihei of Yamasa Shoyu starts to sell Worcestershire Sauce, called “Mikado Sauce.”

1885 May—The government reinstates the tax on shoyu to raise money for the army.

1887—Soybean production in Japan tops 400,000 tonnes (419,700 tons) for the first time.

1890—The Tokyo-Area Shoyu Brewers' and Wholesalers' Union (*Ichifu Rokken Shoyu Jozo-ka Tokyo Tonya Kumiai Rengokai*) forms a cartel for the first time because of a 50% increase in the price of their raw materials.

1891—Mogi Kenzaburo of Kikkoman (1st generation) starts to use a special press (*gendo maki assaku-ki*) invented by Yamazaki Izuko to press the shoyu out of the moromi mash more efficiently and quickly.

1893—In recent years the import of soybeans to Japan has increased rapidly, and this year it reaches 96,000 tonnes. These soybeans are grown mainly in Manchuria. The average price of 2 liters of high-quality shoyu in Tokyo is 10 sen. (In 1982 it is 584 yen, or 5,840 times more than in 1893).

1894—Around this time miso soup is recognized for its value as a protein food. Dr. Sito Nesaku, an agricultural specialist, says that miso is a farm household's milk.

1894—Yabe Kikuji (1868-1936) calls natto “Japanese cheese” and presents the first academic paper on natto bacteria in Japan.

1895—Around this time the number of walking vendors of tofu, natto, and boiled whole soybeans (*ni-mame*) increased, as did the production of dried-frozen tofu (*kori-dofu*). The number of small shoyu makers decreased dramatically as Kikkoman, Yamasa, and Higeta increasingly used advanced industrialized methods. Recipes and methods for making miso pickles (*miso-zuke*) using carrots, daikon, udo, and ginger are given in women's magazines such as *Jokan*, *Katei Zasshi* and *Jogaku Kogi*.

1896—Around this time the importation of salt starts, as shoyu makers in Noda and Chiba buy 15,000 tons of salt from England.

1897—Soybean imports this year increase to about 140,000 tonnes, which is one-fourth of Japanese consumption. Domestic soybean production is 400,000 tonnes.

1899—Mogi Keizaburo of Kikkoman of Kikkoman (1st generation) starts using a boiler for the first time in the shoyu industry. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

335. Sun Yi-jang. ed. 1899. Chou-li cheng-yi [The orthodox interpretation of the Ritual of Chou]. Taipei, Taiwan: Ssu Pu Pei Yao edition, reprinted 1966. 6 vols. [Chi]*

336. Yurkevich, Lyutsian. 1899. Soya rannyaya, kak nasyschnaya pischa dlya gybernii, postradavshikh ot neurozhaya [Early soya as daily food for provinces suffering from crop failure]. Kiev, Ukraine, Russia: Printing House of Peter Barsk. 19 p. 20 cm. [Rus]

• **Summary:** Sigizmund Yaroshevskii brought soybeans to Russia from abroad; however, due to lack of effort to acclimatize these soybeans, they started to disappear. In 1893, I. Ovsinskii [Owinski, Owinsky] reintroduced black and brown varieties of soybeans from the East to the Podol'skaya region [part of Ukraine in 2002]. In 1895, Yurkevich brought soybeans from North Korea into Chernigovskaya, Mogilevskaya and Vilenskaya regions [also part of Ukraine in 2002]. It was found that soybeans, which were inexpensive and nutritious, could be used to feed the starving and malnourished population. Also, soybeans were used in Russia as a feed for army horses (when Yurkevich traveled to Korea, he also noticed that their horses were fed soybeans). Also discusses: Acclimatization and cultivation of soybeans. Unique features of soybeans. Six recipes for dishes made with soybeans: 1. Soy flour to make bread. 2. Soy flour to make *mamalyga* (boiled dough). 3. Soy flour to make pancakes. 4. Cooked soybeans to make porridge. 5. Soybeans to make soy oil. 6. Miso used in a porridge.

Both Avgust Chechet (who lived under the name of Gal'vachi) in an article in the agricultural journal, *Roln. i Hodov* No. 40 of 1898, and J. Farcy in his article in *Journal de l'agriculture pratique* No. 14 of 1898 approvingly recommend soybeans. There follows a long quotation from Chechet's article. Address: Kiev, Ukraine, Russia.

337. Aso, K. 1900. The chemical composition of the spores of *Aspergillus oryzae*. *Bulletin of the College of Agriculture, Tokyo Imperial University* 4(1):81-96. Feb. [5 ref. Eng]

• **Summary:** "Our knowledge of the chemical composition of the spores of fungi is still very scanty, and as regards their ash, no analysis whatever has thus far been made." The spores of *Aspergillus oryzae* "can easily be obtained in any quantity in Japan, as the rice grains covered with the mycelium and the spores of this fungus form an article of commerce under the name of *Tane-Koji* or *Koji-dané*. I have preferred however to collect the spores myself, in order to obtain them in a pure state.

"*Aspergillus oryzae* plays a great part in several industries in Japan, being used not only in the manufacture of Sake or rice wine, but also in that of Shoyu or Soja-sauce, and of Miso.

"This fungus contains powerful enzymes, a diastase, a maltase, invertase and a peptase. Oxydases appear to be present only in traces."

In the section titled "Preparation of samples" (p. 82) the author describes how he prepared and collected the spores: "Tane-kôji was prepared roughly milled rice without mixing any ash [in sake factories the ash of oak leaves is typically mixed with the rice substrate]; and when the rice grains became covered with innumerable spores, they were brought out from the cellar and the spores were separated from the rice grains and the mycelium by tapping on the bottom of the culture boxes (*kôji-buta*) inverted on a sheet of paper." These spores "were then sifted with a very fine silk sieve to remove all impurities... This sample was exposed to air in a balance room for two weeks and kept in a bottle."

Two tables (p. 83) show the organic constituents in 100 parts of air-dry spores, and 100 parts of dry matter. The latter contains 5.151% ash, whose composition is discussed in more detail on pages 93-96. A table (p. 95) shows the ash content and composition of winter wheat, paddy rice (not whitened), oats, soy-bean, rice (not whitened), and spores of *Aspergillus*. The latter is by far the richest in ash, potash, and phosphoric acid. In conclusion, the author expresses "much thanks to Dr. O. Loew, formerly professor in this college..."

Note: This is the earliest English-language document seen (Jan. 2006) that uses the term "Soja-sauce" (regardless of capitalization) to refer to soy sauce. Address: Nôgakushi, Japan.

338. Gomilevskii, V.I. 1900. O kitaiskom bobbe (Soja hispida) i ego znachenii dlya rysskogo khozyaistva [The Chinese soybean (Soja hispida) and its meaning in Russian economy]. St. Petersburg, Russia: Printing House of "Obschestvennaya Pol'za" Union. 32 p. 22 cm. [17 ref. Rus]

• **Summary:** Contents: I. Research of Gil'desgeim proved that soybeans could replace meat in daily diet. More than 20 varieties of soybeans from Japan and China were introduced to Central Europe and Russia in 1873 at the World Exposition in Vienna. Soybeans were first recognized in Russia by agricultural writers Yaroshevskii and Semnalovskii in an article in their journal (name of which is not stated) and later in another article in the *Zemledel'cheskaya Gazeta*. During about the same time articles were written by I.G. Podoba and Mel'nikov. In the 1884 exhibition in Odessa, various Russian regions presented soybeans in various stages of development and soybeans which can be used as coffee substitutes. Soybeans were also cultivated in Kiev, now part of Ukraine.

II. Description of soybeans. Different varieties of soybeans in Europe (*Soja hispida praecox* is recommended for cultivation in Russia). III. Composition of soybeans. Use

of soybeans as meat substitutes for poor people and the army. Soybeans as substitutes for coffee. Soybeans used in tofu, miso and spicy sauces for meat. Recipes of foods uses of soybeans: soybean flour for bread, soybeans for soybean oil. IV. Composition of soybeans. Use of soybeans as feed for cattle, dairy cows, pigs and horses.

V. Characteristics of the soybean: How it stands hot and cold weather, uniqueness, not a demanding plant (needs little fertilizer), prefers southern climates/latitudes. VI. Cultivation of soybeans: Type of soil, preferred temperatures and time of year for planting, spacing between seeds and rows. VII. Soybean maintenance. VIII. Harvesting of soybeans. IX. Harvesting/gathering of soybeans. X. Conclusion: Soybeans have a bright future in Russia, they may help fight hunger in the poor regions, as well as provide an excellent source of nutrition and energy for the army and the marines. Address: St. Petersburg, Russia.

339. Sempolowski, A. 1900. Ueber den Anbau der Sojabohne [On soybean culture]. *Fuehling's Landwirtschaftliche Zeitung* 49(5):193-96. March 1. [Ger]
 • **Summary:** "The soybean first aroused great interest in Europe after the Vienna World Exposition in 1873, where a large collection of soybean varieties from China, Japan, India, etc. were exhibited. Professor Haberlandt in Vienna and others subsequently conducted a large series of agronomic trials with the soybean in various locations from Austria and Germany. These, however, showed that the cultivation of this fodder plant in the districts concerned is not worth recommending since the soybean matured either very late or not at all. At that time I also conducted soybean agronomic trials in the province of Posen and in Russian Poland; these, too, gave negative results in those vegetation areas. The farmers were discouraged from cultivating the soybeans and pretty soon the once-popular fodder plant was indeed forgotten.

"However, in more recent years, there arose a new, eager apostle of the soybean, the farmer J. Owsinski [Owinsky, Ovinski] from the province of Podolia. He had been working for a long time in East Asia, allegedly, and there he learned about new, earlier-ripening varieties of this fodder plant. For cultivation, he recommends two varieties above all: one black- and one brown-seeded. Since the soybean still continues to have a great reputation, publicity, especially in Russia, as an excellent fodder plant, I decided to conduct another agronomic trial with these two new varieties at agricultural research station at Sobieszyn (in Russian Poland). I wanted to answer two questions: First the time required for the soybean to mature in our climate, and second the value of the entire plant as fodder.

According to Owsinski, the soybean took 100 days to come to vegetative maturity in southwest Russia and 110 days in western Russia, corresponding to late varieties of

oats or blue lupins. The brown-seeded soybean is said to ripen in 100 days in southwest Russia and 108-110 days in western Russia, however the yield is low and the seeds shatter easily.

In East Asia soybeans are used to make soy sauce ("Shoya, Soohu, or Soy"), miso, and natto—the last two being fermented foods. A table shows the nutritional composition of soybean cake on a dry weight basis (41.73% protein, and 7.18% fat).

On 14 May 1898 the author planted his trial field with soybeans. On Sept. 22 he harvested 30 plants of brown-seeded soybeans, including 200 gm of seeds; 100 seeds weighed 22.07 gm. The plants were 26-36 cm high and on each stem were 13-17 pods. The time to maturity was 140 days. On Oct. 5 he harvested 23 plants of black-seeded soybeans, including 208 gm of seeds; 100 seeds weighed 16.01 gm. The plants attained a height of 30-55 cm, and on each stem were 12-56 pods. The time to maturity was 173 days.

On 17 May 1899 the author planted a larger quantity of brown-seeded soybeans at the rate of 643 kg/ha in rows 40 cm apart. The time to maturity was 130 days. At the same time on another test plot he planted black-seeded soybeans in rows 50 cm apart. The harvest took place on Oct. 7 and the time to maturity was 170 days, but the seeds were not completely ripe and had to be dried for another week. A table shows the nutritional composition of these two varieties. Brown: 39.03% crude protein and 18.55% fat. Black: 37.62% crude protein and 20.87% fat.

"When we consider the protein and fat content of the seeds, we must acknowledge that the soybean, compared with other crops, has a very high nutritional value. However, farmers must be urgently advised to treat the new, allegedly early-ripening varieties with great caution, since they have not yet been sufficiently tested to be recklessly praised and their cultivation widely expanded."

Note: This document contains the earliest clear date seen for soybeans in Russia, or the cultivation of soybeans in Russia (14 May 1898). This is also the earliest document seen that describes soybean breeding in Russia. The source of these soybeans was Owinski, who apparently obtained them from East Asia. Address: Dr., Sobieszyn [Russian Poland?].

340. Langworthy, C.F. 1900. Vegetable cheese. *Sanitary Home (Fargo, North Dakota)* 2(3):55-57. May.

• **Summary:** "It is commonly believed that the Japanese, Chinese, and other oriental peoples live almost exclusively on rice, eating little or no meat... In the course of centuries the Japanese and Chinese have evolved the art of preparing substances resembling dairy products from vegetable sources. It is well known that beans, peas, and other legumes contain large amounts of protein... The soy bean,

which is perhaps the principal legume grown in Japan and China, is less suited for food in its natural state.”

“Though the soy bean is not relished when cooked in the ordinary way, the Chinese and Japanese prepare very satisfactory foods from it in ways which are unknown to western cooks. Bean cheese or bean curd, called by the Japanese *tofu* and by the Chinese *tao hu*, is one of the most important of these products and is prepared as follows: The soy beans are soaked in water for about 12 hours and crushed between mill stones until of a uniform consistency. The ground material is then boiled with about three times its bulk of water for an hour or more and filtered through cloth. The filtrate is white in appearance and has somewhat the appearance of milk. It has the taste and smell of malt. Analysis shows that it resembles cow’s milk in composition. When heated a film forms on the surface which in appearance suggests cream. This is dried and eaten under the name of *yuba*. As soon as the soy bean milk becomes cool, some material is added; for instance, crude sea salt, containing magnesium chlorid [chloride], which precipitates the proteid material, the fat being inclosed in the coagulated mass. The coagulated material is pressed and kneaded into small cakes or cheeses. These are sometimes dipped in saline solutions of curcuma to color them. The bean cheese cakes are sometimes eaten fresh or may be cooked in different ways. Often when practicable they are frozen. This removes a considerable part of the water present. As shown by analysis, the fresh bean cheese contains about 5 per cent of protein and 3 of fat. Ordinary cheese made of milk contains about 28 per cent protein and 36 per cent fat.

“Miso resembles *tofu* to some extent. It is prepared from cooked soy beans, which are rubbed to a thick paste and fermented with rice wine ferment. *Shoyu* is a thick sauce prepared from a mixture of cooked pulverized soy beans, roasted and pulverized wheat, wheat flour, salt, and water. The mass is fermented with rice wine ferment in casks for from one to five years being frequently stirred. The resulting product is a moderately thick, brown liquid, in odor and taste, not unlike a good quality of meat extract, though perhaps a trifle more pungent. Throughout the East it is eaten in large quantities with rice and other foods and is an important source of protein. Under the name of soy sauce, it has been known to Europeans in India for many years, and is not unknown in the United States. Most of the soy bean products are fermented; that is, they are prepared with the aid of micro-organisms. The micro-organisms break down the cell walls and similar materials and thus the cell contents are rendered more accessible to the digestive juices at the same time peculiar and pleasant flavors are developed. The manufacture of these products is of very ancient origin and affords an interesting, practical illustration of the use of bacteria for economic purposes.

“The Chinese residents of San Francisco and other cities consume large quantities of these soy bean products and it is

stated on good authority that soy bean cheese is manufactured in this country, though doubtless it is seldom, if ever, eaten by any except the Chinese.”

Note 1. This periodical was later named *North Dakota Farmer*.

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the term “soy bean cheese” or “bean cheese cakes” to refer to *tofu*.

Note 3. This is the earliest document seen (June 2007) concerning soybeans in connection with (but not yet in) North Dakota.

Note 4. This is the earliest English-language document seen (Oct. 2003) that contains the term “soy bean milk.”

Note 5. Dr. E.F. Ladd was a nationally-known pioneer in food safety and sanitation in the United States. He published this periodical, *Sanitary Home*, in Fargo and distributed it free of charge like an extension publication before the extension service was created; North Dakota State Univ. paid the printing and mailing expenses. Interested in home safety, he rewrote technical publications in a language homemakers could understand. He did much work with North Dakota food purity and chemical purity laws. Address: PhD, Office of Experiment Stations, Dep. of Agriculture, Washington [DC, USA].

341. Abel, Mary Hinman. 1900. Beans, peas, and other legumes as food. *USDA Farmers’ Bulletin* No. 121. 32 p. See p. 9-11. Illust. Revised Nov. 1904. Corrected March 1906. [1 ref]

• **Summary:** A section titled “Soy Bean (*Glycine hispida*)” (p. 11-13) briefly describes the soybean plant and the rich nutritional composition of its seeds, then notes: “This leguminous plant, probably native in China, is the most important legume of China and Japan... In the Orient this bean and the various food products made from it are so largely consumed that it is perhaps the most important food plant next to rice. The soy bean is eaten so a small extent boiled like other beans, but in China and Japan it is elaborated into a variety of products, all of which have a high percentage of protein, and when eaten in connection with the staple food, rice, which is so deficient in that constituent [protein], helps to make a well-balanced dietary. Some one of these products is eaten at perhaps every meal and by rich and poor alike, especially in the interior of these countries, where sea food is not obtainable.

“One of the most important of these preparations is *shoyu*, and it is the only one that has been introduced to any extent into other countries, where it is known as soy sauce...”

“There are also several varieties of bean cheese or similar products made from this legume which are very important foods. These are *natto*, *miso*, and *tofu*. *Natto* is made from soy beans that have been boiled for several hours until very soft, small portions of the still hot mass being then wrapped securely in bundles of straw and placed

in a heated, tightly closed cellar for twenty-four hours. Bacteria, probably from the air or the straw, work in the mass, producing an agreeable change in its taste.

“For tofu, the soy bean, after soaking and crushing, is boiled in considerable water and filtered through cloth. To the resulting milky fluid 2 per cent of concentrated sea brine is added, which, probably by virtue of the calcium and magnesium salts present, precipitates the plant casein, which is then pressed into little snow-white tablets. It is made fresh every day. Tofu is sometimes cooked in peanut oil before it is eaten. In natto and miso the action of minute organisms plays an important part. In tofu there is no such action. The composition of a number of these products is as follows:”

A table (p. 11) shows the nutritional composition of food products made from soy beans, including fresh tofu, natto, white miso, red miso, Swiss miso, and shoyu (2 samples).

An illustration (non-original line drawing, p. 10) shows a soy bean plant with a cluster of 7 pods to its upper left (slightly changed from an original in Carrière 1880, p. 154).

Note 1. This is the earliest English-language document seen (Oct. 2003) that uses the term “milky fluid” to refer to soymilk.

Note 2. Mary Hinman Able was not an employee of the USDA or of the federal government. She was a pioneer in the fields of nutrition, nutrition education, home economics, and popularizing science for the general public. Between 1904 and 1913 she wrote several farmers bulletins for the USDA. From 1909 to 1915 she was editor of the *Journal of Home Economics*.

342. Product Name: [Light House brand Soy Sauce, Chiang, Fermented Tofu].

Foreign Name: Jiang-yu, Dou-jiang, Furu.

Manufacturer’s Name: Yeo Hiap Seng.

Manufacturer’s Address: Chang-chou, Fukien [Fujian] province, China.

Date of Introduction: 1900.

How Stored: Shelf stable.

New Product–Documentation: Letter from Alan Yeo. 1982. April, and YHS news release. 1990. Oct. Yeo Hiap Seng traces its origins to the year 1900 when the patriarch of the Yeo family, Mr. Yang (in the Amoy dialect, his name was pronounced Yeo Keng Lian) purchased a small company named “Hiap Seng” in the city of Chang-chou (pinyin: Zhang Zhou), Fukien (Fujian) province, China. “Hiap Seng” means “unite to succeed.” Yeo Keng Lian changed the company’s name to reflect his family’s ownership. He worked as a manufacturer and retailer of fermented soybean seasonings: soy sauce (*jiang-yu*), Chinese-style miso (*dou-jiang*), and fermented tofu (*furu*). All three products were sold from day one under the “Light House” brand. By working together, the family did succeed. Their soy sauce, fermented in the traditional Chinese way in

wooden vats and earthenware jars, was of superior quality and the business prospered. The original plant was located near the center of Chang-chou. In about 1920 a second plant was established in the eastern part of the city, and in the late 1920s a third plant was set up in the southern part of the city. Each of the three fermented soy products were produced in all three plants; the second and third plants also produced some pickled vegetables.

In 1935, during the Japanese invasion of China, when life was difficult and unsettled in Fukien province, Yeo Keng Lian sent his eldest son, Yeo Tian In, to Singapore to investigate possibilities there. The son founded the Yeo Hiap Seng Sauce Factory at 410 Outram Road, Singapore 3. He was joined shortly by the rest of the family.

Note 1. This is the earliest known commercial soy product (with a brand name) made in China.

Note 2. This is the earliest known commercial soy product made or sold by Yeo Hiap Seng. It is also the earliest record seen (Oct. 2001) concerning Yeo Hiap Seng.

343. Boorsma, P.A. 1900. Scheikundig onderzoek van in Ned.-Indie inheemsche voedingsmiddelen. De sojaboon [Chemical analysis of some indigenous foodstuffs in the Netherlands Indies. The soybean]. *Geneeskundig Tijdschrift voor Nederlandsch-Indie* 40:247-59. [18 ref. Dut]

• **Summary:** Contents: Literature review. Introduction (Boorsma is living in Java). Chemical composition of indigenous soybeans: Table giving figures (based on Boorsma’s original research) for large black, large yellow, small yellow, unripe or immature black soybeans, soy protein (*eiwit in de soja*) or legumine, the oil (*De vette olie*), analysis of the ash, starch, the black soybean (*zwarte kedeleh*), use of soybeans in Java and Japan. Japanese soya preparations (*soja preparaten*): Shoyu (soja) made with koji, tofu, yuba, miso and natto. Indigenous (Chinese) preparations: Tempeh (*tempe kedeleh*), Indonesian soy sauce (*Ketjap–Bataviasche soja*), tofu and pressed tofu (*Tao-hoe en Tao-koan*), Indonesian miso and soy nuggets (*Tao-tjo en Tao-dji*).

Note 2. This is the 2nd earliest document seen (March 2009) that mentions Indonesian-style miso, which it calls “Tao-tjo.” This is the earliest English-language document seen (Feb. 2009) that uses the word “Tao-tjo” to refer to Indonesian-style miso.

This excellent article contains a 4½-page description (the best seen to date) of the traditional process for making soybean tempeh (*Tempe kedeleh*). The soybeans are parboiled, soaked in water for 2-3 days, drained, steamed in a steamer (*koekesan*), spread in a layer several centimeters thick on woven bamboo trays in shelves, and covered completely with banana leaves. They are then inoculated with the *bijang*, which is the “mold containing residues of a previous preparation.” This is mixed in here and there, then the trays are covered lightly with banana leaves so as to let

in some air. “Rampant growth of the mold soon begins. In the evening the mass is molded a little and after two 24-hour periods one will obtain a coherent cake, which is cut into pieces and taken as is to the market.”

The cotyledons are stuck together by a dense mycelium, which has grown into a somewhat white covering. According to Prinsen Geerligs (cited above), the name of the mold is *Chlamydomucor Oryzae*.

During the two days of rampant mold growth, a radical conversion takes place in the components of the seeds; a lot of water, carbonic acid, and heat start to develop... A thermometer inserted into the fermenting mass shows a temperature 10-12°C above that of the environment.

As the preparation is finished, the banana leaves are taken away; the temperature drops slowly to normal, the rampant mold growth stops, and the mass dries out slightly. In this condition, the tempeh can be kept for several days with spoiling.

When the rampant mold growth is allowed to continue for a third day, simply by leaving the banana leaves in place, the conversion will soon become much stronger as noted by the formation of ammonia. Also poisonous products start to form; a monkey, given a little bit [of overripe tempeh] among his other foods that day was vomiting violently one hour later. Thus we should admit that the stories about poisonings caused by various sorts of tempeh [such bongkrek, made from coconut presscake] probably have some foundation. But there is little fear of this from soybean tempeh.

After microscopic examination, Boorsma concluded that Prinsen Geerligs and others were wrong in stating that (1) the mold hyphae penetrate and dissolve the hard soybean cell walls, and (2) cellulose is decreased during tempeh (*tempe*) fermentation. He studied the chemical and compositional changes at four stages during a 3-day tempeh fermentation; a table shows his findings. He observed that fats and soluble carbohydrates decreased substantially, while nitrogen decreased only slightly. He also discussed the hydrolysis of soybean lipids, and why tempeh is easier to digest than whole soybeans.

Note 1. This is the earliest Dutch-language document seen that uses the term *tempe kedele* or the word *tempe* to refer to tempeh.

On page 258 Boorsma briefly discusses Ketjap (which he called *Bataviasche soja*, or Jakarta soy sauce) and Tao-hoe and Tao-koan (tofu and firm tofu), based on information from Prinsen-Geerligs (for both) and Vorderman (for firm tofu). For each he gives a nutritional composition. On page 259 Boorsma briefly discusses *Tao tjo* and *Tao-dji* (Indonesian-style miso and soy nuggets). Note 2. This is the earliest Dutch-language document seen (Dec. 1999) that uses the term *Tao tjo* to refer to Indonesian-style miso or taucu / taucho.

Note 3. This is the earliest Dutch-language document seen (March 2001) that mentions soy nuggets, which it calls *Tao-dji*.

Note 4. This is the earliest document seen (April 2001) that contains the term *Tao-koan*.

Note 5. This is the earliest Dutch-language document seen (Feb. 2004) that contains the term *natto*.

Note 6. This is the earliest Dutch-language document seen (Oct. 2008) that mentions yuba, which it calls *Yuba* and describes as *een nog vetrijker product dat verkregen wordt bij uitdampen van de roomloog, die zich bij de zoeven genoemde boonenmelk aan de oppervlatke verzamelt.*”

Note 7. Boorsma was a Dutch naturalist who lived in Indonesia in the early 1900s. Address: Netherlands.

344. Hutchison, Robert. 1900. Food and the principles of dietetics [1st ed]. New York, NY: William Wood & Company. xviii + 548 p. Plus 3 leaves of colored plates. Illust. Index. 23 cm. [100+* ref]

• **Summary:** Chapter 13, “The pulses—Roots and tubers,” contains a table (p. 225) titled “Composition of pulses,” which gives the nutritional composition (based on many analyses) of 13 pulses, including soy beans, soy bean flour, peanuts, lentils, horse beans (dry), broad or Windsor beans, French beans (*haricots verts*), haricots (*haricots blancs*), etc. For each is given the percentage of water, proteid, carbohydrates, fat, cellulose, and mineral matter. Soy bean flour is the highest in proteid (39.5%), followed by soy beans (32.9%). Peanuts are the highest in fat (44.3%), followed by soy beans (18.1%), and soy bean flour (13.7%).

There is a basic description of each of the major pulses. We read (p. 226-27): “The Soy Bean (*Glycine hispida*) is the richest of all the pulses in proteid, and also has a large amount of fat, but very little starch. For this reason it is of use as a bread substitute in diabetes, a flour being prepared from it and made into loaves or biscuits. In China and Japan it is extensively eaten in the form of soy cheese [tofu], and as various sauces and pastes [miso], all of which are rich in proteid and so are fitted to supplement the deficiencies of rice. It is also grown in Southern Europe.

“The Peanut (*Arachis hypogaea*), although botanically one of the pulses, really resembles more closely the true nuts. Like these, it is rich in proteids and fat, and may be used as a diabetic food. It enters into the composition of a patent food known as ‘Nutrose,’ and after expression of the oil it forms cakes for cattle.”

The section on diabetes has a subsection on “Diabetic breads” (p. 475-76) stating that gluten, the chief proteid of wheat, was one of the first substances to be used in making them. More recently, oily nuts and “the soja bean” have also been used. Many of these breads, and especially the gluten breads, “are by no means free from starch.”

A table (p. 196) compares the “composition of wholemeal and white bread.” Wholemeal bread contains 5 times as much “cellulose” [dietary fiber] as white bread, yet white bread contains slightly more proteid. A second table (based on analyses by Atwater) compares the composition of “white bread, brown bread, and Graham bread.” There is a vigorous debate as to which of these is better nutritionally. Also discusses: Wholemeal bread, and Graham bread. Robert Hutchison was born in 1871. Address: M.D. Edinburgh, F.R.C.P., Asst. Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond St. [London].

345. VanBuskirk, J.D. 1900. Some common Korean foods. *Transactions of the Korea Branch of the Royal Asiatic Society* 14:1-8.

• **Summary:** Table 1, “Korean food products,” based on statistics published in the 1917 report by the Bureau of Agriculture of the Government General, shows Korean production in millions of bushels: Rice 61. Barley 25. Millet 19. Wheat 8, Beans and peas 18. Since exports and imports of foodstuffs are relatively small compared to the amount produced, and the number of animals fed is not large, “these figures should give us a good idea of the amount of food eaten.”

Rice is sometimes cooked with peas or beans (incl. soy beans) mixed in (called *pat-pap* or *kong-pap*. But the cooking takes longer and the beans are often not well cooked, and thus less digestible (p. 3).

The section titled “Bean and pea foods” (p. 4-5) gives the name of each food in Korean characters and discusses: (1) Bean curd (*tu-bu*), equivalent to Japanese tofu, is curded with the “concentrated mother liquid from sea water” [Jap. nigari]. The bean residue (*pi-ch'i*) left over from making tofu is also sometimes eaten. Bean curd “is not generally eaten without further preparation; it is commonly added to soups and stews and often made into omelets with eggs; another palatable food is made by cooking the bean curd for a short time in bean sauce (*chang*) and serving this with sesame oil, pepper and onions; it is called *to-bu cho-rim*. Bean curd may be eaten without further cooking served in sauce.”

Pea curd (*mook*) is similar to beancurd in composition but made from peas using a very different process.

“Bean Sauce (*kan-chang*) is somewhat like the Japanese ‘sho-yu’ but is more salt and not sweetened. Soy beans are thoroughly boiled, mashed, made into cakes and partially dried. These cakes (*me-ju*) are stored for months and allowed to mold and slowly ferment: when ripe they are broken up and soaked in salt water for a long time, then strained, the solid part being dried and used as a condiment (*toin-chang*). The liquid is boiled and the coagulated protein scum frequently removed; when sufficiently concentrated

the liquid sauce is cooled and stored. This is the indispensable condiment for Koreans.

“Another bean sauce (*ko-cho-chang*) is made by taking about equal parts of the fermented bean cakes, rice, and salt, with a large amount of red pepper, the mixture being soaked in a small amount of water till ripe. This too is very important as a condiment.”

Note: This is the earliest document seen (March 2009) that clearly mentions a Korean-style miso, which it calls “ko-cho-chang,”—today commonly called “red pepper sauce.”

“‘Kong-cha-ban’ is made by boiling beans in the bean sauce; they do not swell but are hard, brittle, and very salty. Sugar and sesame oil may be added when serving them.

“Sprouted beans (*kong-na-mul*) are very common. The beans are soaked in water and allowed to sprout. When the sprouts are quite long both beans and sprouts are boiled and served—sauce is generally added.”

Kim-chi, a fermented food made from cabbage or sliced turnips, is sometimes served with added bean sauce.

Among animal foods: “‘Mut-chim’ is dried fish soaked in water, then shredded; it is then soaked in bean sauce. Sesame oil and pepper are added; it is then allowed to stand for a short time.” Address: M.D..

346. Zavitz, C.A. 1900. Co-operative experiments in agriculture. *Ontario Agricultural and Experimental Union, Annual Report* 21:6-37. For the year 1899. See p. 9, 16, 31-32.

• **Summary:** A table (p. 7) shows the number of distinct experiments in agriculture, number of experimenters, and number of satisfactory reports each year for 1886, 1888, and 1891-99. For 1886 these numbers were 1, 12, and 8. For 1888 they were 1, 90, and 40. For 1891 they were 12, 203, and 126. For 1895 they were 15, 1699, and 513. For 1899 they were 23, 3485, and 739. Thus, during these 14 years the Union made remarkable progress.

A table titled “List of experiments for 1899” (p. 9), under “Grain crops” includes “Testing three varieties of Japanese beans—3 plots.”

In a long “List of experimenters” we read (p. 16) that the Japanese beans were grown by: (1) F.B. Doud, Branchton, Brant Co. (2) Simon Miller, Unionville, York Co. (3) Jno. D. Neilson, Thedford, Lambton Co. (4) O.A.C., Guelph, Wellington Co.

In the section titled “Conclusions” (p. 31-32), table 15 shows the results (based on 4 tests) of testing three leading varieties of Japan [soy] beans: Medium Green (estimated value 72), yielded 2.6 tons/acre of straw and 22.4 bu/acre of grain. American Coffee Berry (estimated value 100), 1.4 tons/acre of straw and 21.3 bu/acre of grain. Extra Early Dwarf (estimated value 86), 1.1 tons/acre of straw and 12.7 bu/acre of grain.

The text immediately below the table explains: “The Soy beans [sic] (*Glycine hispida*) is a leguminous plant native of Japan and China, and ranks very high from a chemical point of view. The plant is an annual, erect in growth and branches profusely. There are a large number of varieties, nearly all of which are too late for the conditions of Ontario. The different varieties are distinguished largely by the time required for the plants to mature and by the color of the seed; the yellow, the green, and the black, being the most common. The Soy beans are used for green fodder, silage, hay, pasture, and as a soil renovator, and the grain is used as a feed for live stock. These beans have been used as a food for man from the earliest times in Japan and China, and more recently in the European countries. They are not used as a food by themselves, but are made into different complex forms, of which five are quite common among Japanese, namely: natto, tofu, miso, yuba, shoyu.

“Conclusions.

“1. The Soy beans gave very good results in the Union experiments in 1899.

“2. The medium green Soy beans which gave the largest yield of grain per acre of the three varieties tested over Ontario in 1899, is the latest of the three varieties.

“3. The American Coffee Berry was the most popular variety with the experimenters when yield, time of maturity, etc., were all taken into consideration.”

Note: This is the earliest report seen (Aug. 2002) in this periodical concerning soy beans. C.A. Zavitz is also secretary of the Ontario Agricultural and Experimental Union, and a member of its Committee on Agriculture (appointed at the last annual meeting). Address: B.S.A., Director of Co-operative Experiments in Agriculture, O.A.C. [Ontario Agricultural College], Guelph [Ontario, Canada].

347. D.A.R. 1901. Katjang-Kedelihpraeparaten [Soyfoods]. *Orgaan van de Vereeniging van oud Leerlingen der Rijks Landbouwschool* (see *Landbouwkundig Tijdschrift*) 13(161):242-45. Dec. [Dut]

• **Summary:** The author wrote an article in the April issue of this magazine about soybean cultivation. Now he will discuss how soybeans are used to make foods. As mentioned in the previous article, soya beans as such are not good to eat, even boiled or roasted; they need to be processed so as to digest the indigestible protein; then this protein can be absorbed by the digestive enzymes of the stomach and intestines.

As Japan is *the* soya country, we will start with the product that is most popular there, soy sauce, which has also earned its place in Europe. It is made from equal parts of roasted soybeans and wheat, 1-3 parts water, and much salt. The koji is fermented for a long time. Prof. Dr. M. Fesco [sic, Fesca], who provided much of this information, said it takes about 20 weeks to 5 years. The longest and slowest

fermentation gives the best quality product. In Japan, every housewife makes her own soya sauce and there is competition for the best homemade soy sauce. Late-ripening protein-rich soybeans, called shoyu-mame, are used. In Java, the residue from soy sauce is used a lot, along with peanut presscake, for fertilizing sugar-cane fields.

In the Netherlands Indies, ketjap [Indonesian-style soy sauce] is made solely by the Chinese. Also called Tao-yoe, it is prepared by covering cooked soybeans with hibiscus (*waroe*) leaves. The age and variety of the leaves is very important. The mold that grows produces substances [enzymes] that digest legumin [soy protein]. More of the process is described.

Note 1. This is the earliest document seen (Feb. 2009) that contains the term Tao-yoe. H.T. Huang (e-mail of 25 Feb. 2009) states: “Tao-Yoe sounds like Cantonese for *Douyou* (pinyin) or *tou yu* (W.-G.) which in Mandarin mean soy sauce, and which first appeared in about 1750 in the *Xingyuan Lu* (*Hsing Yüan Lu*). See Huang 2000, p. 371-73.

Star anise (*Hades manies*) is also added to Indonesian soy sauce. Some Chinese have gained a reputation for their knowledge of the different additives (*boemboengs*). 61. kg of soybeans (1 gantang or 10 katties) can yield 3 bottles of number 1 ketjap (which retails for 50 Dutch cents per bottle), plus 3 bottles of 2nd extraction ketjap (each 40 cents), plus 3 bottles of ketjap no. 3 (which is little better than salt water with a light brown tint; each 20 cents).

The Japanese also use soybeans to make tofu (*tofoe*). Precipitated with magnesium chloride, it is a greyish-white tough, or sometimes yellow product. Although containing 90% water, it is a concentrated food. A table (based on analyses by E. Kirch [sic, Kinch] of Tokyo) shows the composition of tofu and kori-tofu; the latter is made by freezing tofu then thawing it. Tofu is a good product for vegetarians, but beware than it can act as a laxative because of the magnesium chloride.

Note 2. This is the earliest Dutch-language document seen that uses the term “Katjang-Kedelihpraeparaten” in the title to mean “Soyfoods.”

Note 3. This is the earliest Dutch-language document seen (Feb. 2004) that mentions dried-frozen tofu, which it calls “kori-tofu.”

348. Lafar, Franz. 1901-1907. Technische Mykologie. Ein Handbuch der Gaerungsphysiologie... Zweiter Band: Eumyceten-Gaerungen [Technical mycology. A handbook of fermentation physiology... Vol. 2: Eumycetic fermentations]. Jena: Verlag von Gustav Fischer. x + 507 p. (p. 365-871). See p. 638, 640, 674-76. Illust. No index. 25 cm. Foreword by Prof. Dr. Emil Chr. Hansen (Carlsberg-Laboratorium, Kopenhagen). [5 ref. Ger]

• **Summary:** This book is continually paginated with Vol. 1, so the first numbered page is 365. Part 15 (chapters 56-58) is titled “Morphology, physiology, and classification of the

technically important higher Ascomycetes and related forms” (p. 627-704). Chapter 56, by Prof. Dr. Carl Wehmer (*Dozent an der Technischen Hochschule zu Hannover* [Germany]), “Morphology and classification of the families of the Aspergilli (*Aspergillaceen*)” discusses (p. 627+): Eighteen illustrations of *Aspergillus* conidiospores (p. 632-33). *Aspergillus Oryzae* (Ahlburg) Cohn (= *Eurotium Oryzae* Ahlburg), which is widely used in Japan to make saké, soy sauce (*Soja-Sauce*), and miso (p. 638-39, with illust.). *Aspergillus Wentii* (Wehmer), which is used in Java to make Tao-Yu (Chinese-style soy sauce) using cooked soybeans covered with *Hibiscus* leaves (p. 640).

Chapter 57, also by Prof. C. Wehmer, titled “Chemical effects of the Aspergilli (*Aspergillaceen*),” discusses (p. 674+): Saccharification of starches, diastase and diastatic enzymes, Takamine’s research using *Aspergillus* to make diastase (Takadiastase) and its efficiency compared with similar enzymes of different origins, koji extract which contains amylase and other enzymes, use of *A. oryzae* to make saké, shoyu, and miso (p. 675-76).

This book also discusses: Zygosporangium production (p. 379). Sporulation and *Aspergillus* (p. 387-89, with illust.). Morphology and classification of the Mucorales, zygomycetes, zygosporangia (p. 420-21). The genus *Mucor*, sporangia, *Rhizopus* (p. 424-27, illust.). Mucorales used in the spirits industry, *Mucor rouxii*, Chinese yeasts (p. 436-37). Ragi/raggi and tapé (*tapej*) (p. 441). Decomposition of proteins and their derivatives, protease (p. 690-91). Film-forming surface yeasts and their accompanying phenomena, *Mycoderma* (p. 732-33). Invertase (p. 828). Other enzymes discussed in this chapter include maltase, melibiase, lactase, trehalase, raffinase, and amylase. Address: Prof. of Fermentation Technology and Bacteriology at the Imperial-Royal Technical College at Vienna [o. ö. {obiger Oesterreichischer} Professor der Gaerungsphysiologie und Bakteriologie an der k.k. {kaiserlich-königliche} Technischen Hochschule zu in Wien].

349. Bie, H.C.H. de. 1901. De landbouw der inlandsche bevolking op Java [The agriculture of the indigenous people in Java]. *Mededeelingen uit 's Lands Plantentuin* (*Buitenzorg*) No. 45. 143 p. See p. 97, 99, 138-43. [Dut]
 • **Summary:** The soybean is discussed in the chapter titled “Cultivation of crops other than paddy rice: Cultivation of secondary crops (*Palawidja*).” Soya bean is one of the secondary foods served with rice, but it is mostly used to make soy sauce and tempeh (*tempe*). One variety of soybean, which originally came from Japan, is widely grown as a second crop on the wet rice fields (*sawahs*), and it is easy to cultivate at altitudes of 1,200 to 1,500 feet above sea level. It is called *katjang kedele* in Central and East Java, but *katjang djepoen* in Sunda or West Java (*de Soedalanden*). A description of the plant and the method of cultivation in Java is then given. It is planted much more on

wet rice fields than on dry (non-irrigated) fields (*tegalans*) near the rice fields used for vegetables and secondary crops. Usually the soybean seeds are planted right after the paddy stumps have been cut away, but sometimes they are planted just before or during the paddy harvest, and pressed into the earth under the feet of the paddy cutters. They are rarely weeded, excepted when the crop is suffocated by tall weeds. At harvest, the plants are pulled completely out of the ground and bound into bunches. At night they are stored under a specially-constructed roofed shelter in the field, and during the day they are sun-dried on bamboo structures or on the ground. This takes at most 3-4 days, if the plants are really ripe and the weather is good, after which the bunches are put on bamboo mats in heaps and threshed. To protect the seeds from damage, one preferably uses piece of banana tree branches which still have woody veins. The woody plant stems and branches are removed together with the soybean pods and burned on the sawah fields. Poor people first sort out the pieces good enough for fuel and take these home. Immature green leaves are fed to animals. Sometimes soybeans are planted on the dikes of the paddy fields at the same time as or a few days later than the paddy rice. The fresh seeds from this harvest are then planted in the sawah fields after the paddy is harvested. Soybeans planted in this way are called *katjang apitan*.

There are two varieties of soya: one has an ivory yellow seed coat and the other is black. The latter is used almost exclusively to make soy sauce; the former to make pastry and condiments for rice or as a vegetable (*sayur*). Soya is cooked with salt in the green pod and eaten as a snack.

The indigenous people don’t concern themselves with the production of ketjap (soy sauce). The work is too involved and takes too long before the product is ready to be sold. Most people are too inexperienced and there is not enough of a market for the product.

The only food that most people make out of soybeans is tempeh (*tempe*), which plays the same role in Central and East Java as does ontjom in Sunda or West Java, and is prepared similarly. The tempeh-making process is described. It takes place indoors, out of the light. It is sometimes cut into smaller pieces. It is usually eaten pan-fried after being soaked in a solution of tamarind and salt. It is also cooked with vegetables.

Most soybean seeds are sold to the Chinese, who export them or process them to make soy sauce and other products. To make soy sauce, the seeds are roasted to aid in removing the hulls. Some people pound the seeds instead. They are cleaned, boiled in water, drained, spread on flat bamboo trays (*tampah* or *njiroe*) and dried daily for a week in the wind. They are washed again then soaked for 30-40 days in salt water which has been boiled then cooled. This mash is mixed thoroughly and strained through a cloth. To the black liquid is added a boiled and cooled mixture of cane sugar and water, then the mixture is boiled until its volume is

reduced by 20%. If the solid residue removed by filtering still tastes salty, it is put into water, kneaded and strained again. A sugar solution is added and all is boiled down as before to make second-grade ketjap.

To make *taoetjo* (*tauco*, *taucho* or Indonesian-style miso), the soybeans are soaked in fresh water, the hulls are removed, the seeds boiled and spread on bamboo trays to cool. Rice or glutinous rice flour is roasted until golden brown, then mixed with the seeds and set aside for 2-3 days to ferment between hibiscus (*waroe*) leaves on flat trays. When the mass has molded, it is sun dried for a few days until very hard. Note: This is the soybean koji used making *taucho*.

Remove the leaves and put this mass of soybean koji into salt water. On the third or fourth day, add some yeast (*gist*) and some cane sugar syrup. Continue the soaking and fermentation in salt water for 2-3 weeks. Place it [in crocks] daily outside in the dew, taking care that no rain gets on it.

To stimulate the fermentation, take steamed rice or glutinous rice that is only half cooked. Add *ragi* starter and allow it to ferment for 2-3 days until a sweet, alcoholic flavor develops. This kind of fermented rice is called *peujeum* in West Java, or *tapé* in Central or East Java. Now add this fermented rice to the soybeans in salt water to enhance both the fermentation and the product.

After 3-4 weeks the soybeans should be very soft like porridge; then the *taucho* is ready to be used. It is eaten raw with cooked or raw vegetables, or mixed with meat or rice dishes; other condiments are also made from it.

Another product that the Chinese make out of soybeans is tofu (*tahoe* or *tauwhoe*). Soaked soybeans are ground and the puree is mixed with fresh water. Then a milky liquid (*melkachtige vloeistof*) is filtered off and coagulated. The Chinese use a coagulant called *tjiogo* (gypsum or calcium sulfate), which is specially imported from China and is not always available, even to the Chinese apothecary. It is first burned, then cooled before being added to the milky liquid. The white mass which is precipitated is called tofu. A similar product can be made from mung beans. Address: Batavia (Jakarta), Java.

350. Wehmer, Carl. 1901. Die Pilzgattung *Aspergillus* in morphologischer, physiologischer und systematischer Beziehung unter besonderer Berücksichtigung der mitteleuropäischen Species [The mold genus *Aspergillus*, from morphological, physiological, and systematic points of view, with special attention to the middle European species]. *Memoires de la Societe de Physique et d'Histoire Naturelle de Geneve* 33(4):1-157. [225* ref. Ger] Address: Hannover, Germany.

351. Sawa, S. 1902. Note on Hamananatto, a kind of vegetable cheese. *Bulletin of the College of Agriculture, Tokyo Imperial University* 4(5):419-20. March. [1 ref. Eng]

• **Summary:** “This peculiar product is prepared from soybeans, as are also two other kinds of vegetable cheese manufactured in Japan, the *Miso* and the *Natto*; but it has a different flavour and taste, and lacks the slimy character of the common *Natto*. It is manufactured only in the central provinces of Japan—especially in those of Mikawa and Totomi, from which it finds its way all over the country. It has an agreeable salty taste and a peculiar odor somewhat resembling that of the fresh crust of brown bread. There is not any mycelium discernible with the naked eye. The soybeans composing it form no compact mass, and are of a brown colour with a thin layer of a salty taste and a somewhat sticky consistency.

“In preparing this product, the soy-beans are well washed, boiled to softness, spread on straw mats, and mixed with wheat flour (6 liters flour to 10 liters soy-beans). Moldfungi will now develop, but soon afterwards this mixture is exposed to the direct sunlight for three days, probably to kill the fungi, and is then put into flat tubs. After 12-13 days some common salt and ginger are added. The entire mass is then kept in tubs under pressure for about thirty days.

“A portion, carefully freed from the pieces of ginger and particles of straw mats used in its manufacture, was dried, pulverized and sifted through a 0.5 mm sieve. I found the chemical composition of the dry matter to be as follows: Albuminoid nitrogen 3.57%. Crude fat 3.44%. Crude fibre 6.87%. Total carbohydrate excluding cellulose 8.40%. Total ash, including salt added 18.54%. The fresh sample contained 44.73% water and 55.23% dry matter.

“There exist at least three different kinds of bacteria in this product. The most numerous colonies on agar are of two kinds.” A detailed microbiological description is given.

Note: This is the earliest English-language document seen (Oct. 2008) that uses the word *Hamananatto* to refer to “soy nuggets” (also called “Hamanatto”).

352. Neuville, Henri. 1902. Les ferments industriels d'Extrême-Orient (Biologie, emploi et produits) [Industrial fermentations of East Asia (biology, utilization, and products)]. Paris: Masson et Cie. 192 p. 19 cm. Encyclopédie Scientifique des aide-memoire publiée sous la direction de M. Léauté. [60+ ref. Fre]

• **Summary:** Chapter 4, titled “Food products obtained by fermentation of amylaceous [starch-like] substances,” discusses the following fermented soyfoods and related products: Shoyu and miso, koji, brem, and ontjom. Contains a good bibliography. Neuville lived 1872-. Address: Préparateur au Muséum d'Histoire Naturelle.

353. Rorer, Sarah Tyson. 1902. Mrs. Rorer's new cook book: A manual of housekeeping. Philadelphia, Pennsylvania: Arnold and Company. 730 p. Illust. Index. 21 cm.

• **Summary:** The soy bean is mentioned in two special sections: Botanical classification of our common vegetables (p. 281): “Leguminosae: Pulse family. Soy bean, peanut, kidney bean, string bean, lima bean, black bean, pea, chick pea, lentil, St. John’s bread.”

Soy bean (*Glycine hispida*, Maxim.) (p. 334-35): “Soy beans are grown principally in China where they form an important article of food; in fact, they are the richest of all in food constituents. It is also grown to a considerable extent in India [sic], where it is mixed with rice. This bean ranks high in fat and albuminoids and is their only muscle-making food. It has more than meat value. By the Chinese it is made into cheese [tofu], pastes [jiang], and sauces [Soy]. Soy sauce is used by them on all meat and fish dishes. For the English and Americans it forms the foundation for such sauces as club-house and Worcestershire. Soy is an agreeable seasoning to creamed meat dishes and a very pleasant addition to French salad dressing. It can be purchased in jugs at any Chinese shop, or at the American wholesale druggists by measure.” A table (based on Church) gives the composition of the soy bean: Albuminoids, etc. 35.3%. Fat 18.9. Starch and dextrin 12.5. Sugar 12.0. Cellulose 4.2. Water 12.5. Mineral matter 4.6.

“Soy” [sauce] is used as an ingredient in 12 recipes: Japanese fish sauce (p. 228). Japanese eggs (p. 253). Sautéed celery (“When ready to serve sprinkle over two tablespoonfuls of soy or mushroom catsup, and send at once to the table,” p. 389-90). Ginger chutney (p. 435). Japanese dressing (p. 442). Celery salad (“This is greatly improved by adding a few drops of Worcestershire sauce, soy or mushroom catsup,” p. 451). Bobotee salad (p. 457). Philadelphia cream salad (p. 459-60). Shad roe salad (“one tablespoonful of Worcestershire sauce or soy,” p. 469). Salad seasoning (“Agreeable seasonings to be kept on hand for salad making: Garlic, mushroom catsup, tomato catsup, Worcestershire sauce, soy, tabasco oil, tarragon vinegar, mint sauce, capers and celery seed,” p. 472). “A group of Hawaiian recipes”—To cook beef (“bake until brown. Then pour over it a half pint of sweet cream, to which you have added a tablespoonful of soy. Cook slowly for one hour, basting frequently with the cream,” p. 691-92). Cream lettuce sauce to serve with fish (“a half saltspoonful of pepper and a teaspoonful of soy,” p. 695).

Worcestershire sauce is used as an ingredient in at least 25 recipes. The first four are: Ox tail soup (p. 62). Cream of cheese soup (p. 74). Mock turtle soup (p. 80). Baked carp (p. 104).

Peanut butter is used as an ingredient in 5 recipes: Cream of peanut soup (p. 75). Lentil pie (p. 337-38). Peanut wafers (p. 535). Nut and fruit crackers (with almond butter or peanut butter, p. 537-38). Marguerites (p. 556).

The earliest recipe seen for homemade peanut butter states (p. 535): “Peanut Butter: Roast the nuts, shell and blow off the brown skins. When making it in large

quantities, it will pay to have a bellows for this purpose, or put the peanuts on a coarse towel, cover them with another towel, rub them gently, then blow off the skins. If you use salt dust them lightly with it and grind at once. Pack the butter into glass jars or tumblers, cover them and keep in a cool place. This may be used plain or diluted with water.”

Two recipes use almond butter as an ingredient: Almond wafers (p. 525). Nut and fruit crackers (p. 537-38). A recipe for homemade almond butter is given (p. 525).

The word “vegetarian” is mentioned in connection with 7 sections of recipes: Meats (p. 135-36). Vegetables (p. 277-78). Salsify (p. 317-18). Tomatoes and okra with curry (p. 417-18). Nuts (p. 522-23). Nut croquettes (p. 538). Sample menus—Vegetarian (p. 666). The author speaks very favorably of a balanced vegetarian diet. Scientists in general agree, she says, that animal proteids are easier to digest than vegetable proteids. “I must contend, however, that a well selected vegetable diet will give health, bodily vigor and mental strength to those who live rationally.” In other countries and cultures, vegetarians are quite equal in strength to those of the same economic class who live largely on meat or on a mixed diet of proper proportions—and are most likely freer from disease. The out-door laborer would probably do better on a vegetarian diet whereas the sluggish digestive apparatus of an indoor is probably better suited to beef (p. 135-36).

“The American people, as a class, in their rushing and bustling life, prefer to take their nitrogen from animal products, which are more easily digested and assimilated than vegetables.” “The Japanese, who do in their country the work performed by horses here, are practically vegetarians.” The “vegetarian requires but two meals per day,” yet they are more nourishing than three meals of meat. They take less time to eat, cost less, and offer more variety. “The amount of cellulose or waste in vegetable foods keeps up the peristaltic motion of the intestines and lower bowels; hence, vegetable eaters are rarely troubled with constipation and torpid livers.” America has “grown into a meat-eating nation” in large part because the scullery maids who preside over the kitchen are largely uneducated, do not understand nutrition, and have never learned the subtleties of preparing vegetables (p. 277-78).

“To the vegetarian, they [nuts] are indispensable; they furnish his meat, milk and butter. They are palatable, nutritious, and, if well prepared, easy of digestion. Being of vegetable origin, they are free from the danger of disease germs. Their food value is generally overlooked by Americans as they are generally served as dessert”—on top of a heavy meal. “From the general awakening in regard to healthful diet, societies have sprung up all over the world, recommending the use of vegetable foods, especially fruits and nuts. We have well established, both in New York and London, large vegetarian societies, many with separate

branches of 'fruit and nut eaters.' Personally I have tried the experiment, and find it most satisfactory" (p. 522).

The Preface notes that this "new book on Domestic Science... represents on paper The School at its highest period of development..." "A great change in the methods of living has taken place in America during the last few years." Not long ago, schools of cookery taught "fancy cookery"—"to succeed with these elaborate, dyspeptic-producing concoctions as the highest ambition. All this has now changed: the teacher or cook book (an ever present teacher) that does not teach health, body building, and economy in time and money, is short lived. There are still a few women who do elaborate cooking to please the palate and appetite,... They are still at the palate stage of existence. Strive to reach a higher plane of thought—eat to live. Why should any woman be asked to stand for hours over a hot fire mixing compounds to make people ill? Is this cookery? Is the headache that follows a food debauchery more pleasant or pardonable or less injurious than that which follows drink? Results of intemperance are identical. Simple living and high thinking have the approval of learned men and women,..."

Sarah Tyson Heston Rorer (1849-1937) "is one of the great ladies of American culinary history. She was a nationally recognized cookery expert, founded and ran a cooking school in Philadelphia for 18 years, authored over 75 books and pamphlets, edited her own magazine *Table Talk*,... and was domestic editor of the *Ladies Home Journal* for 14 years." With over 1,500 recipes, tips and advice, and more than 125 recipes, this "is one of America's great cookbooks. The *Ladies Home Journal* reprinted it in 1970. It offers an excellent view of American cookery at the turn of the 19th to 20th centuries" (MSU introduction).

Note: This is the earliest document seen (Jan. 2007) stating clearly that shoyu (Japanese-style soy sauce) is used as an ingredient in making Worcestershire sauce. Address: Philadelphia.

354. Pozzi-Escot, Emm. 1903. Chimie de l'industrie du soja [Chemistry of the soy sauce industry]. *Revue Generale de Chimie Pure et Appliquee* 6(3):64-69. Feb. German-language summary in *Chemisches Central-Blatt* 1903(1):849-50. [3 ref. Fre]

• **Summary:** "The manufacture of soja [soy sauce] (which is also called shojou or miso) forms one of the most important industries of Japan. It is obtained by fermentation of the soybean (*du haricot-soja*), wheat and koji, with the aid of certain molds." Soja is widely consumed in Japan and also widely exported. "It is a condiment more than a food, and it serves in place of salt in most culinary preparations. The average Japanese consumes 50-80 cc/day.

The production reached 2,307,844 hectoliters in 1893, and today it surpasses 2.5 million hectoliters, bringing in more than 6 million marks to the government [in taxes].

Today the number of brewers surpasses 11,000; it was nearly 10,000 in 1897 and 10,600 in 1900. One of the factories in Tokyo employs 250 workers and produces 50,000 hectoliters each year. The author has become friends and communicated with two professors in Tokyo, Dr. Oscar Loew (Prof. of Agricultural Chemistry at Tokyo University) and K. Aso.

Three tables (by Murai 1897, by Nagai and Murai, and by Prinsen-Geerligs 1895) give the composition of shoyu (the first two tables are each based on two analyses).

Noting that many erroneous works have been published on the manufacture of soja [soy sauce], the writer proceeds to describe the process as he understands it, based largely on Japanese publications—but also with many mistakes. The process has four main steps: 1. Preparation of the wheat or soybeans. 2. Preparation of the soja koji. 3. The fermentation process. 4. Extraction and sterilization. The total process takes 1-2 years. He concludes with some ideas for improving the process by reducing the fermentation time. He would heat the soy sauce during fermentation and add alcohol. Address: In charge of pure chemical research at the labs., Malzeville, France.

355. Koenig, Franz Joseph. ed. 1903. *Chemie der menschlichen Nahrungs- und Genussmittel*. Vol 1. *Chemische Zusammensetzung...* Ed. 4 [The chemistry of human foods and food adjuncts (stimulants / enjoyables). Vol. 1. Chemical composition... 4th ed.]. Berlin: Verlag von Julius Springer. 1535 p. See vol. 1, p. 97-98, 595-600, 638, 651-53, 1463, 1483-84, 1509. [31 ref. Ger]

• **Summary:** Summaries of early studies on the chemical composition of soybeans and various soyfoods, plus some original studies. Commercial sauces and Japanese shoyu (p. 97-98). Cites: Wein, Kinch, Anderson, Senff, Schwackhöfer & Stua, Zulkowski, Mach, Ulbricht, Wildt, Schröder, Blaskovics, Caplan, Pellet, Carriere, Kellner, Jenkins, Becke & Cosack, Kornauth. Soybeans in Russia: Nikitin, Giljaranski, Lipski [Lipskii] (p. 1483-84). Address: Geh. Reg.-Rath, o. Professor an der Kgl. Universitaet und Vorsteher der Agric.-Chem. Versuchsstation Muenster in Westphalia, Germany.

356. Lange, Rudolf; Noss, Christopher. 1903. A text-book of colloquial Japanese. Based on the *Lehrbuch der japanischen Umgangssprache*. Translated and revised by Christopher Noss. Tokyo: Methodist Publishing House. xxxii + 573 p. 23 cm.

• **Summary:** Page 32: The prefix *mi* expresses respect, as in *mikado* (Emperor), or *miya* (shrine). A woman's expression, *o mi o tsuke*, in which we find two honorifics, means a soup made of miso.

Page 66: Shō-yu or soy is a kind of sauce.

Page 71-72. Tōfu means "bean curd." A tōfuya is a tofu shop. "Tofu is one of the most important articles of food

among the Japanese.”

Page 108: *Shirouri wa misosuke ni suru to, taisô umô gozaimas*’. If you pickle white cucumbers in miso, they are quite delicious.

Page 353: “*Shoyu wo (o) shitaji to mo iimasu*. Shoyu is also called *shitaji*.”

Page 395: A mixture of soy, *mirin*, and vinegar is called *sambaizu*.

In the Japanese-English dictionary are definitions of: *miso*, a kind of sauce (p. 510), *shô-yu*, a kind of sauce (p. 533), *tô-fu*, bean curd (p. 541). Address: 1. PhD, Prof. of Japanese at the School of Oriental Languages, Univ. of Berlin [Germany]; 2. Formerly missionary of the Reformed Church, Sendai.

357. Whitehead, Jessup. 1903. The steward’s handbook and guide to party catering. 6th ed. Chicago, Illinois: Jessup Whitehead & Co., Pubs. v + 464 + 29 p. Illust. No index.

• **Summary:** Page 60: “Those everlasting relishes” mentions catsups, soys, Worcestershire sauce, mushroom and walnut catsups, Harvey’s sauce, India soy.

Page 87: Relishes: Tomato catsup, Worcestershire sauce. Page 214: Worcester sauce.

Alphabetical: Carp (p. 267): Baked carp; gravy made with Worcestershire sauce. Chinese cookery (p. 278-80): Chinese chop soly [chop suey], a savory ragout, is the national dish of China. Incidental ingredients include “salted black beans.” Chop sticks.

Cucumber (p. 299) and eggs, with vinegar and Worcestershire sauce. Devil sauce (p. 303), with Worcestershire. Drinks (p. 305): Prairie oyster, with dash of Worcestershire sauce. Garum (p. 324): “One of the two principal sauces used by the ancient Romans...; a kind of soy,...” Horseradish (p. 343): Napolitaine sauce, with Worcestershire sauce.

Japanese cookery (p. 350-51): Mentions “Japanese misoshiru [miso soup]... This is made from miso, a fermented mixture of soy, beans [sic, soy beans], wheat and salt. It has a gamey flavor all its own.” “Hachimono,... a piece of sole stewed in soy.” “... the brown soy-colored beans and strips of Kukirage, or ear-shaped mushrooms.” “Fu, a kind of biscuit made from the glutinous part of wheat flour.” A gravy “thickened with a transparent, starchy substance, obtained from the root of a climbing plant (*Pueraria Thumbergiana*), called by the Japanese Kuzu.”

Sauces (p. 430-34): “Harvey’s sauce—’A fair imitation of Harvey’s sauce may be produced by working the following recipe. Mince a clove of garlic very finely, add 6 chopped anchovies, ¼ oz. cayenne, 3 tablespoonfuls of Indian soy, 3 tablespoonfuls of mushroom or walnut ketchup...” “Soy—An East Indian bottled sauce; it is made of purple wrinkled morels, galangal root and spices.” “Bottled table sauce—The recipe for making the genuine Yorkshire relish is probably known only to manufacturers. However, the following is

said to yield a good imitation of that popular sauce: 1 oz. garlic, 1 teaspoonful cayenne, 2 tablespoonfuls Indian soy, 2 tablespoonfuls mushroom ketchup, and 1 pint vinegar.”

Scottish cookery (p. 438): Mince collops—incl. a “dessertspoonful Worcester sauce...”

“Soy—A bottle sauce imported from China and India; composition uncertain.”

Tripe (p. 461): Tripe a la Creole, with Worcestershire sauce. Address: Chicago, Illinois.

358. Kozai, Y.; Loew, O. 1904. Ueber fungicide Wirkungen von Pilzculturen [On the fungicidal effects of mold cultures]. *Bulletin of the College of Agriculture, Tokyo Imperial University* 6(2):77-79. March. German summary in *Chemisches Central-Blatt* 1904(2):252. [Ger]

• **Summary:** It has been observed that in Japan, a well-known vegetable cheese known as Miso, does not get covered with mold even during the hottest days of summer, despite its moist condition and the fact that it is exposed to the open air and dust in shops. The prompted the authors to conduct an experiment to see if *Aspergillus oryzae*, the miso mold, has fungicidal properties. The miso is made from the action of enzymes on cooked soybeans. Address: Tokyo Imperial Univ., Japan.

359. Humphreys, Mary Gay. 1904. The aesthetic housekeepers of Japan. *Ogden Standard Examiner (Utah)*. April 29. p. 23.

• **Summary:** The author, an American, writing from her experience of living in Tokio, notes that Japanese housekeepers bring a strong sense of beauty or aesthetics to every part of their daily life. Concerning foods: “One of these is bean curd, ‘tofu,’ a white substance that is sliced and fried like mush, with soy [sauce] for a flavor. This curd is so nutritious and so cheap that an American who lives in Japan suggested its being introduced into this country as a food. Soy is a liquid made from the black bean and is said to be the foundation of Worcestershire sauce. It enters into almost all cooking, and most agreeably.”

A Tokio restaurant meal: “It was charming, a meal to be remembered, and meat thus cooked in soy [sauce] something ‘Japanesy’ that we might well import.”

Nuta salad: “This is made of clams, rape tops and onion with a sauce of bean paste, rice, mustard and soy [sauce], rubbed into a brown liquid.” One large illustration shows a Japanese woman with elaborate dress and hairdo; three others show her working at home.

360. Abel, Mary Hinman. 1904. Beans, peas, and other legumes as food. *USDA Farmers’ Bulletin* No. 121. 39 p. See p. 11-13, 18-20. Revised. Illust. [1 ref]*

• **Summary:** A revised edition, 3 pages longer than the 1900 original. The information about soy is unchanged, however it is on different pages (see above). The section titled

“Nutritive value of the legumes” (p. 18-20) includes a table titled “Composition of fresh and dried legumes compared with that of other foods.”

361. Burg, Cornelis Leendert van der. 1904. *De voeding in Nederlandsch-Indië* [The foods of the Netherlands Indies]. Amsterdam, Netherlands: J.H. de Bussy. viii + 526 p. See p. 210-20, 222-23, 255-56. Index. 24 cm. [49 ref. Dut]

• **Summary:** Burg describes the preparation of tempe as follows: “Yellow soy-beans are boiled, soaked in cold water for 48-72 hours, squeezed out between cloths, and then steamed in a conical basket, made of flattened bamboo or of cane (Malay: kukusan) till they are done. Afterwards they are spread out on wire frames, which are entirely covered with banana leaves, and mouldy remains of a previous preparation are added, then all is covered again with banana leaves. The whole mass is stirred a few times, and after 2 days a cake has been formed, from which pieces are cut, which are fried in cocoanut oil and eaten afterwards. During the preparation, the cotyledons have been bound together by a tight mycelium, much water and carbonic acid being secreted in the meantime and the temperature of the mass rising 10 to 12°C above that of the surroundings. The cellular walls are not dissolved by the hyphae, but the soluble carbohydrates and the fat diminish, the nitrogen content remains about the same, but in tempé only 70% is to be found of the protein, as originally present in the beans.”

He also describes, on Prinsen Geerligs’ authority, the preparation of *tao-tjo* (Indonesian-style miso). Peanuts are discussed on p. 220; *tempé boengkil*, *tempé bongkrek*, *ontjom beurream*, *ontjom bodas* on p. 222.

362. Tokyo Plant, Seed & Implement Co. (Tokyo Konoen). 1905. *Agriculturist (The)* No. 125. Jan. 56 p. [Jap]

• **Summary:** This illustrated monthly Japanese-language periodical, which began publication in 1894, has two main parts and functions: (1) Articles that promote agricultural theories and techniques to the public in easy-to-understand language. (2) A catalog of the publisher’s seeds, plants, bulbs, and implements.

The catalog section titled “Beans” (p. 8+) includes two entries (p. 9) for soybeans (*daizu*): (1) Juninko (“ten people like”) variety. 5 sen per *gô* (100 sen = 1 yen; 1 *gô* = 180 cc = 0.763 cups {U.S.}). 40 sen per *shô* (1 *shô* = 1.8 liters = 1.903 quarts {U.S.}). A recently improved variety with medium sized, shiny seeds. They are good for making shoyu, miso, or other foods. (2) Kimusume (“fresh daughter”) variety. 5 sen per *gô*. 40 sen per *shô*. Mid-season / medium-maturing, summer varieties that yield a big harvest. Address: Tokyo, Japan. Phone: 2421.

363. Kadono, C. 1905. The diet of the Japanese. *Times (London)*. Feb. 11. p. 6, cols. 3-4.

• **Summary:** This article is actually mostly about soya beans and their products. “It is well known that the Japanese diet consists chiefly of rice, vegetables, and fish, with very small and occasional additions of butchers’ meat. The relative quantities of these, and vegetables and products thereof used, would be interesting and in some respects instructive.

“The following bill of fare, which attempts to give the three meals of a day for a family of moderate circumstances, will show how they live. It may also be said that all Japanese live rather simply whether high or low in their station of life, and the menu can be taken as typical of all classes.

“Breakfast (about 7 to 7:30 a.m.).—Miso soup (with vegetables, tofu, &c.), pickles, boiled rice, tea (sometimes raw egg or boiled sweet soya beans, or natto, &c.).

“Lunch (12 noon).—Fish boiled in soya, vegetables stewed in soya, pickles, boiled rice, tea.

“Supper (6 to 6:30 p.m.).—Soya soup (with vegetables, fishes, &c.), raw fish sliced and eaten with soya sauce, broiled fish (or boiled) with vegetables (or butchers’ meat or fowl and vegetables stewed), rice, tea...

“From the foregoing it can be seen how cereals and vegetables predominate in Japanese diet. Rice and miso and soya, as will be seen from the menu, form the predominant feature of the food, and it may not be an exaggeration to say that the Japanese physique is mainly built up on the products of soya beans, such as miso, soya sauce, tofu, &c.”

There follows a detailed table titled “Analysis of Soya Beans and Their Products. (Extract from a table by Mr. C. Omura.)” Nutritional analyses are given for the following, written exactly as they appear: Soya beans (5 varieties), miso (white, red Osaka, red Tokio, red Sendai), soya sauce (regular or Noda), tofu, dried frozen tofu, fried tofu, mash residue from tofu (Okara), yuba (Dried skim off tofu-mash), natto (Steamed beans with surface fermentation).

“Soya beans are grown all over Japan and in Manchuria, and so far as I know cannot be had here [in England]. They are eaten boiled, either young or ripe.” They are manufactured into those articles shown above, of which miso, soya, and tofu are the most important...” The author then gives a 5-10 line description for each of how miso, soya sauce, and tofu are made. Tofu is coagulated with a “strong brine. “The remnant (okara), being a white pulverized mass, called fancifully ‘snow balls’ by Japanese, is eaten boiled and seasoned with soya sauce.

“I have given Japanese meals to some English friends and most have pronounced the food excellent, and some have even braved the sliced raw fish with soya sauce.”

Note 1. Concerning the idea that okara is sometimes fancifully called “snow balls,” the term *kirazu* is written with three characters: yuki = snow, hana = flower(s), and sai = vegetable(s). Or the author may be referring to a local term from some part of Japan.

Note 2. This is the earliest English-language document seen (Oct. 2001) that uses the Japanese word *okara* or the term “mash residue from tofu” to refer to *okara*.

Note 3. This is the earliest English-language document seen (Feb. 2004) that uses the word “dried frozen tofu.” Address: England.

364. *Chambers's Journal (London)*. 1905. Japanese diet. Vol. 8. March 25. p. 270. Sixth series. [1 ref]

• **Summary:** “The nations of the world have now had the opportunity of learning many a valuable lesson from the general management of the Japanese army... It is interesting to note that the hard work done by the Japanese Tommy is performed on a dietary table which would hardly satisfy the soldiers of any other country. A large quantity of the Japanese soldiers' rations is made up of compressed fish-meal... Another form of food which seems peculiar to the Japanese army is obtained from kelp and other seaweeds, many of which afford very nourishing sustenance...”

“At home this is the bill of fare of a Japanese family in moderate circumstances, according to C. Kadono in the *Times*. Breakfast (about 7 to 7.30 A.M.)—miso soup (with vegetables, tofu, &c.), pickles, boiled rice, tea (sometimes raw egg or boiled sweet soya beans, or natto). Lunch (12 noon)—fish boiled in soya, vegetables stewed in soya, pickles, boiled rice, tea. Supper (6 to 6.30 P.M.)—soya soup (with vegetables, fish, &c.), raw fish sliced and eaten with soya sauce, broiled fish (or boiled) with vegetables (or butcher meat or fowl and vegetables stewed), rice, tea. The Japanese physique is thus largely built up on the product of soya beans, which are grown all over Japan and in Manchuria, and from which miso, soya, and tofu are made. Soya beans, which, we believe, are not to be had in this country, are much richer in albumen than either beef or mutton. The Japanese diet, therefore, mainly consists of rice, vegetables, and fish, with very small and occasional additions of butcher meat.”

365. *Vegetarian Messenger and Health Review (Manchester, England)*. 1905. The diet of the Japanese (Abstract). April. p. 86-87.

• **Summary:** This article is a summary of: Kadono, C. 1905. “The diet of the Japanese.” *Times* (London). Feb. 11. p. 6.

366. Kitao, Motohide; Akiyama, Takuji. 1905. Miso *shōyu chū ka kurooru tetsu ni yotte sarichiru-san to kokuji no nannō o teisuru ni tsuki*. I. [On the substance which appears to resemble the reaction of salicylic acid with ferropchloride in miso and shoyu. I.]. *Eisei Shikenjo Iho (Bulletin of the Imperial Hygienic Laboratories)* 10:79-87. May. [Jap]

Address: 1. Gishi; 2. Gishu. Both: Eisei Shikenjo.

367. Kitao, G.; Akiyama, T. 1905. Miso, *shōyu-chū ka kuroru tetsu ni yotte sarichiru-san to kokuji no hanna o tei suru seibun ni tsuki, dai ikkai hōkoku* [A constituent of miso and shoyu which gives, with ferric chloride, a reaction similar to that of salicylic acid]. *Yakugaku Zasshi (J. of the Pharmaceutical Society of Japan)* No. 280. p. 483-88. June. [Jap; eng]

• **Summary:** This constituent is thought to be tyrosine, which is a decomposition product of albuminous matter contained in the raw material. Authors also give the results of experiments on that constituent and the distinction between it and salicylic acid.

368. Clement, Ernest W. 1905. Mito samurai and British sailors in 1824. *Transactions of the Asiatic Society of Japan* 33:86-123. July. See p. 113, 122. Read May 17, 1905. [5 ref]

• **Summary:** In 1638, Tokugawa Iemitsu, the 3rd Tokugawa shogun, issued his famous edict with two parts: First, it prohibited foreigners from landing on the coast of Japan. Second, it prohibited Japanese from leaving Japan. Only a limited amount of trade was permitted at Nagasaki with the Dutch and the Chinese.

Yet no policy, no matter how stringent, could prevent the winds and currents from carrying foreign vessels to the Japanese shores. The seclusion became even more difficult to enforce after about 1750, when whaling and merchant vessels began to frequent the waters of the Pacific Ocean.

Page 88 cites three documents that discuss the attempts made before Commodore Perry's visit to open intercourse with Japan. Mito was a fief (*han*) on the eastern coast of Japan just northeast of today's Tokyo. Before 1824 various western ships were seen off the coast. “In 1823, some fishermen discovered a foreign ship off the coast of Hitachi [a village in Mito] and had an opportunity to go aboard. In the ship they found many swords, guns, etc.; and they saw the crew getting oil from whales.” The crew of one stranded ship landed, and attacked and robbed the people, throwing them into confusion.

On about June 24, twelve foreigners [British] landed at the village of Hitachi. They attempted to communicate a villager, and succeeded at basics; the story is told by Aizawa An, a prominent Mito samurai.

In *The Leading men of Japan*, by Charles Lanman [1883] we read (p. 283): “According to the native annals, the coast of Japan was visited by foreign vessels in 1637, 1673, 1768, 1791, 1793, 1796, 1803, 1808, 1813, and 1829.” In 1846 two American ships first arrived at Nagasaki [then Tokyo Bay] under Commander James Biddle, and Commander Matthew C. Perry made his visit in 1853, made memorable by resulting in a treaty with the United States. In 1854, Sir James Stirling, an English admiral, visited Nagasaki, and also concluded a treaty with Japan;... Perry

“opened” Japan primarily for the U.S. whaling industry. In 1824 British sailors landed in Japan.

Page 113: “Kuhachiro and Tōzō received the following provisions for three days’ use: 3 *shō* of rice, 6 *seki* of *miso*, 6 *seki* of salt.

“The following are the provisions for horses: 2 *shō* 1 *gō* of soja bean, 1 *shō* 2 *gō* of rice-bran, 9 *kwan* of hay and straw. These were to be used for three days...”

Footnotes (p. 110, 113, 122): 1 *shō* = about 1.5 quarts. 1 *seki* is about 0.03 pint. 1 *gō* is about 0.3 pint. 1 *kwan* is 8.2673 lbs. 1 *hiki* is ¼ *sen* [a small unit of Japanese money].

Page 122: “6 *seki* and 6 *sai** of *miso*... 3 *gō* and 5 *seki* of soja beans.” Address: M.A.

369. Muroi, Zengo. 1905. *Miso no hataraki ni tsuite* [On the action of miso]. *Kenbikyō (Microscope)* No. 66. p. 1-8. Sept. [Jap]

370. Macmillan, H.F. 1905. The “Soya (or Soy) Bean.” (*Glycine hispida*). A new vegetable, fodder, and green-manure product for Ceylon. *Tropical Agriculturist (Ceylon)* 25(5):682-83. Nov. 15.

• **Summary:** “It is strange that a product so important, so simple of cultivation and so quick in yielding returns as this has not hitherto attracted attention in Ceylon.

Notwithstanding the fact that it has been introduced several years ago by the Royal Botanic Gardens, and successfully grown at Peradeniya year in and year out, both for the instruction of visitors to the Gardens and for distributing seeds; I question whether there are at present half-a-dozen gardens or estates in Ceylon which count this amongst their crops.”

“The Soya Bean thrives at Peradeniya, and appears to be well-suited to the climate and soil; whilst it also flourishes in the Mediterranean region and Southern Europe. It would therefore seem reasonable to expect it to thrive at a comparatively wide range of elevations in Ceylon, provided the conditions of soil and rainfall were at all favourable. In China and Japan the Soya Bean forms a standard article of food with all classes of the community, being prepared for use chiefly in the form of a sauce, paste or cheese, the latter two preparations being made by crushing and pressing the seeds. In India the seeds are said to be cooked and used in various ways, often ‘roasted and ground as *satu*, or simply eaten in the form of *dal*.’ Soy sauce is said to form the basis of many popular sauces made in Europe.” A few years ago soy sauce in London was worth 2 shillings and 6 pence per gallon. “Personally I think Soya Bean as a vegetable is very agreeable and forms a good substitute for the Lentils and Broadbeans of Europe if cooked and served similarly. Its chemical composition, according to Professor Church, places it above all other pulses as an albuminous food.”

The soya bean is also considered valuable as a fodder plant and for green manuring. A brief description of its

cultivation is also given. “Regarding cultivation, probably few crops are less exacting in their requirements than this. Its most striking characteristic, judging by results recorded at Peradeniya, is the remarkably short space of time in which the plants grow and produce a crop. Here the seeds germinate in 3 to 5 days, the plants flower when a month old; a fortnight later the pods are fit for picking [for use as a green vegetable], and the harvesting is complete in about two months from the time of sowing. Thus, granted the seasons were favourable, it should be possible to obtain four crops a year. In making these statements, which may seem unduly optimistic, it is not by any means intended to convey the impression that practically no expenditure of labour is involved in the production of this crop. On the contrary it is pretty certain that to make it a profitable product for whatever purpose, even under the most favourable conditions for its growth, a reasonable amount of cultivation will be required. It has yet to be proved how far it would repay cultivation in Ceylon for fodder and green-manuring, but that it should prove a welcome adjunct to the food products of the natives, if not as a general vegetable, there seems no question.”

A footnote states: “* Since writing this Mr. Kelway Bamber has presented a small quantity of Soya Bean seed to the Botanic Gardens, remarking that he intended to recommend it as a green-manure crop.” Address: Curator of the Royal Botanic Gardens at Peradeniya.

371. Alviso Co. (The) 1905. Dealer in Japanese American provisions, dry goods and merchandise (Ad). In: Nichibei Shinbun-sha. 1905. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Unnumbered page near the end. [Jap; eng]

• **Summary:** Ad (full page). The central 1/8 of this ad is in English. This company sells various goods including miso and shoyu. The Japanese title across the top: “Great bargain prices. You’ll be surprised!” An illustration shows two flags, Japanese and American, crossed. Address: P.O. Box 15, Alviso, Santa Clara Co., California.

372. Bui, Quang Chieu. 1905. Des cultures vivrières au Tonkin [On the food crops of Tonkin, Indochina]. *Bulletin Economique de l’Indo-Chine* 48:1152-90. New Series 2. Many illust. and photos. [4 ref. Fre]

• **Summary:** This article begins with a foreword by H. Brenier, Director of Agriculture, Forestry and Commerce for Indochina. He notes the importance of soybeans, soy products (including soy sauce and tofu) and adzuki beans (*Phaseolus radiatus*), among the people of Asia. In Annamite (south Vietnamese), tofu is called *dau phu* and the soybean is called *dau nanh* or *dau tuong*.

Adzuki beans are discussed (p. 1153-55, 1157) and a nutritional analysis of the azuki bean, which has been cultivated in France, is given. The section on the soybean

(p. 1153, 1157-68) discusses: The local names and varieties of the soybean, botanical characteristics, cultivation, utilization (to make soy sauce, *tuong*, tofu, etc.), commerce and trade (in the province of Hungyen, the stalks of the soybean plant are used to make a sort of incense). An illustration (line drawing, p. 1159) shows a Soja plant with pods.

A detailed description is given of the manufacture of *tuong* (a sort of soft miso) in Tonkin. First *moc*, or molded glutinous rice is prepared. After glutinous rice is cooked, it is covered with banana leaves and allowed to mold for 2-3 days. Then the soybeans are prepared. They are grilled, ground to a powder, boiled with water, and put into a jar for 7 days until sweet. Six parts of rice koji are then mixed with 5 parts soy. The mixture will be ready to eat after it has fermented for 15-30 days. If it is too thick, add salt. Good *tuong* is soft and mildly sweet. It is sweeter and smoother than *nuoc mam*. Annamites say that only the prosperous households succeed in making *tuong*. If the *tuong* starts well, then becomes sour, that is a bad omen.

Tuong can also be made from corn (*maïs*), which is grilled, ground, sifted, covered with taro leaves, and allowed to mold. Put it in salt water, then after 5-6 days add roasted soy flour as above. Stir it before sunrise and let it stand open in the sun for 15 days, putting on the cover as soon as the sun disappears. If this is done, it will last a long time.

Note 1. This is the earliest document seen (Jan. 2009) that mentions *tuong*. The importance of this fermented seasoning, a close relative of Chinese *jiang*, is indicated by the local name for the soybean (*dau tuong*), or “the bean used to make *tuong*.”

Production of tofu (*dau-phu*): Lots of *dau-phu* is made in Tonkin, especially in Hanoi, where it constitutes the basis of the poor people’s food. It is never made in large factories, only small shops. Soak the soybeans, wash them and remove their hulls, cook to soften them, then grind them with a hand-turned mill over a wooden bucket. The soymilk is extracted with cold water then boiled for 30 minutes. There remains in the sack a white residue (*un résidu blanc*) [okara] which is fed to the pigs. The next day, add some fermented whey from a previous batch to coagulate the soymilk. Then press the curds. The finished tofu cakes are each 15 by 8 by 1 cm thick. Tofu is widely used in soups. A table (p. 1165) shows the costs of equipment to start a tofu shop, and a profitability analysis. Early analyses of the composition of the soybean, conducted by Fremy, Muentz and Pellet (in France) and Wechler (in Austria), are reproduced. Photos show key steps in the process: (1) A person is washing soybeans in a bamboo colander while standing in a stream near Hanoi. (2) The soybeans are ground in a small, traditional, hand-turned stone mill by a person sitting on the same wooden bench as the mill, in a bamboo hut, surrounded by various wooden tubs and

colanders. (3) Using a sack to filter the ground puree from the stone mill. (4) Cooking the filtered liquid over a small wood fire in an earthenware pot. (5) Pressing the curds (outdoors) after precipitation of the protein. (6) More forceful pressing. (7) A merchant walking the streets selling tofu on two trays, each suspended by 3 ropes from the ends of a shoulder pole.

Note 2. This is the earliest French-language document seen that mentions okara (Oct. 2001), which it calls *un résidu blanc*.

Note 3. This is the earliest document seen stating that okara is fed to “pigs.” Address: Indo China.

373. Fernie, William Thomas. 1905. *Meals medicinal: With “herbal simples,” (of edible parts). Curative foods from the cook; in place of drugs from the chemist.* Bristol, England: John Wright & Co.; London: Simkin, Marshall, Hamilton, Kent & Co., Ltd. xxii + 781 p. See p. 84. Illust. Index. 22 cm.

• **Summary:** In this collection of unusual facts about the healing power of foods, the various foods are listed alphabetically. The section titled “Bean” states (p. 84): “The Soy Bean (*Glycina soja*) [sic, *Glycine soja*] is of three varieties, black, green, and white. These Beans are boiled, then mixed with barley, or wheat, until, through fermentation, they become covered with fungi; then brine is added, and further fermentation goes on for a couple of years. The sauce thus concocted is afterward boiled afresh, and put, when cool, into bottles, or casks. From a nutritive point of view it is superior to any other sauce in our markets.” Soy is made throughout Japan, and most Japanese partake of it with every meal. “In China, Soy Cheese [tofu] is extensively eaten, whilst various sauces, and pastes [jiang] are prepared from the Beans... An old fable said that Soy was made from certain beetles, and Londoners have improved this to ‘black beetles.’” Note: This is also the earliest English-language document seen (Feb. 2004) that clearly uses the term “Soy Cheese” (or “soy cheese”) to refer to tofu.

The author then quotes a four-line poem by Edward Lear from his *Book of Nonsense* (1862) which begins: “There was an old person of Troy / Whose drink was warm brandy and soy,...”

Also discusses: Seaweeds (p. 495-96, 627-33; Incl. Irish moss or carrageen, dulse, laver, sloke, samphire, sea holly, bladderwrack, and *Laminaria digitata* or sea-tang, sea spinach, agar-agar or Japanese isinglass). The Pea-nut (*Arachis hypogaea*, p. 504-05; Incl. pea-nut candy and nut cream). Vegetarianism (p. 711-17). The book contains no recipes. Address: M.D [England].

374. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1905. *Zaibei Nihonjin nenkan* [Japanese-American yearbook. No. 1]. 234 Turk St., San Francisco, California. 345 p., many

unnumbered. Reprinted in 25 Oct. 2001 in Tokyo by Nihon Tosho Senta. Series: Nikkei Imin Shiryôshû. Dai 1-kai [Collected Documents on Japanese Emigration. No. 1]. [Jap; eng]

• **Summary:** This book is read and numbered from “back to front” compared with typical English books; it is mostly (99%) in Japanese. There is no English-language title page. The company that publishes this yearbook also publishes (at the same address) a daily newspaper titled *The Japanese American*.

The book is composed of: 16 unnumbered pages of ads and basic information; page 14 is “About this publication, and pages 15-16 are the table of contents, 12 unnumbered leaves of black and white photos (including two maps, in Japanese, of northern and southern California, on glossy paper), 192 pages which are the body of the book, a directory interspersed with 80 pages of ads in groups of either 16 or 32 pages.

The table of contents reads: 1. Census of Japan and USA (both population and agriculture). 2. U.S. law. 3. U.S. agriculture as it relates to Japanese. 4. Commerce. 5. Education and religion. 6. Cities in which a significant number of Japanese live. 7. Statistics. 8. Japanese farmers in U.S. agriculture. Appendix: Directory and index to the directory.

Sources are cited: U.S. Agricultural Census for 1900. Trade information from Japan’s Dept. of the Treasury (*Ôkurasho*) and the U.S. Dept. of Commerce. Then there is a 2nd table of contents for the directory, listing different city place names, by state. This directory was compiled by this newspaper using every means at their disposal.

Imports of Japanese shoyu (soy sauce) to the USA were 429,135 *sho* worth \$86,681. Note: 1 *sho* = 10 *go* = 1.8000 liters. So this amount is 772,443 liters or 203,925 gallons (p. 136). A significant amount of Japanese miso was also imported but this yearbook was unable to get the exact statistics (p. 136).

The top half of p. 137 is about shoyu; the bottom half is about sake. Concerning shoyu: Shoyu is one of the daily necessities for Japanese. It is the 3rd largest item imported [probably after white rice and sake]. In Meiji 36 (1903) the amount imported was 4,291 *koku*, 3 *to* and 5 *sho* worth \$86,681 (see above). It is the No. 1 “direct import” because it is relatively easy to import due to its packaging, documentation, basic liquid nature, and way of invoicing (it does not require double invoicing). It is easy to sell; not much capital is needed to stock it and it is a very popular item. Like bread or flour in U.S. groceries, it has a small profit margin and the stock turns over rapidly. Many varieties of shoyu are imported from many parts of Japan: Choshi in Chiba prefecture, Hamaguchi Yoshibe, Sa-jirushi, Mogi Saheji’s Yama Kikkoman in Noda (Chiba prefecture), Ka-jirushi, Yamagata-hi, Sendai jirushi, and Bunmei jirushi. The best selling brands are those which are of medium

price. Recently, in San Jose, Mr. Yamamori, started a shoyu making plant and is working hard to make it successful. We look forward to receiving his product.

In San Jose, California, there are two shoyu makers (p. 156, bottom right).

The Directory shows Japanese companies making soyfoods only in California.

Note: This is the earliest document seen (Feb. 2008) that is a directory of Japanese living in the United States. Address: San Francisco, California.

375. Oshima, Kintaro. 1905. A digest of Japanese investigations on the nutrition of man. *USDA Office of Experiment Stations, Bulletin No. 159*. 224 p. See p. 20-33, 40-43, 46-47, 145-53, 168-73. [26 ref. Eng]

• **Summary:** One section titled “The Soy bean and its preparations” (p. 23-33) gives detailed discussions of tofu (including yuba, frozen tofu, kara [okara], and fried tofu), miso (incl. white miso, red or Sendai miso), shoyu, and natto. The nutritional composition of each is given, and many early studies by Western and Japanese scientists are cited.

“Next to rice in importance in the Japanese diet are legumes, which are universally used... Of the different legumes used as food in Japan, the soy bean (*Glycine hispida*) is by far the most important. According to agricultural statistics for the years 1879 to 1887, nearly 10 per cent of the cultivated land in Japan was devoted to the growth of this legume, an area somewhat larger than that devoted to wheat growing. In the northern Island [Hokkaido] in 1887 nearly 17 per cent of the total cultivated area was devoted to the soy bean. The average yearly production of soy beans amounts to about 360,000,000 kilograms... A part of the product is of course used for seed, and a not inconsiderable part is used as fertilizer.*” (Footnote: *”In northern China soy beans are used to some extent in the production of oil, which is used for cooking and illumination [in oil lamps]. The residue from this process [the presscake] is imported largely into Japan, where it is used as a fertilizer”). Other legumes widely used in Japan include the mungo bean (*Phaseolus mungo radiatus*) and the adzuki bean (*Phaseolus mungo subtrilobata*) (p. 23-24).

“Many varieties of soy beans are known, being designated according to the color, size or shape of the seed, and the time required for maturity. For example, there are black, green, yellow, and white varieties, and these are again designated as early, medium, or late, according to the season of maturity, and small, medium, and large, according to the size of the seed. The black soy beans are used chiefly for cooking, with sugar and shoyu; the green variety is also used in this way, either in the fresh state or after being dried” (p. 24). There follows a long section on tofu (detailed in a separate record).

The “larger part of the leguminous food in the Japanese diet consists of the preparations of soy beans, such as miso, shoyu and tofu,...” (p. 46).

In Japan, legumes about 8% of the protein and 11% of the fat in the diet (p. 137). Many digestion experiments are described (p. 144-87), including those with tofu, shoyu, “tofu cake or kara, the soy-bean residue remaining from the preparation of tofu (see p. 26),” and yuba conducted in Japan by Osawa and Ueda (1887), T. Suchi (1887), Kano and Iishima (1899). Table 91 (p. 191) is a “Summary of results of digestion experiments with legumes and legume preparations.” The percentages given are “coefficients of digestibility.” Experiments No. 6 and 7—soybeans (average): Protein 65.5%, fat (uncertain), carbohydrates (incl. crude fiber) 85.7%. Experiments No. 8 and 92—tofu (average): Protein 92.7%, fat 96.4%, carbohydrates (incl. crude fiber) 93.3%. Experiment No. 94—“yuba (soy legumin coagulated):” Protein 92.6%, fat 95.7%, carbohydrates (incl. crude fiber) 86.6%, crude fiber 35.5%. Experiment No. 93—“tofu cake (soy-bean residue [okara]):” Protein 78.7%, fat 84.3%, carbohydrates (incl. crude fiber) 82.8%, crude fiber 89.6%.

Note: This is the earliest English-language document seen (Oct. 2001) that uses the Japanese word *kara* to refer to okara.

Other Japanese foods discussed include adzuki or adzuke beans (*Phaseolus mungo subtrilobata*) (p. 24, 170), dried algae (sea vegetables, p. 34), and kuzu (p. 170). Address: Director, Hokkaido Agric. Exp. Station, Sapporo, Japan.

376. Oshima, Kintaro. 1905. A digest of Japanese investigations on the nutrition of man: Tofu (Document part). *USDA Office of Experiment Stations, Bulletin No. 159*. 224 p. See p. 26-28. [1 ref. Eng]

• **Summary:** “Tofu: This term is commonly translated as bean cheese—though sometimes bean curd—in English and *Bohnen-käse* in German. Tofu is not strictly equivalent to cheese, however, as neither bacteria nor ferments are involved in the process of manufacture. It consists chiefly of the albuminoid materials of the soy bean combined with magnesium and calcium salts, as pointed out by Inoue.” To make tofu, soaked soybeans are ground between millstones. “The mass is then mixed with about three times its bulk of water and boiled for about an hour, after which it is filtered through a cloth. By this process about 30 per cent of the total protein of the beans is dissolved and contained in the filtrate, ready to be precipitated as tofu. The filtrate is white and opaque, somewhat resembling milk. To this is added, with constant stirring, about 2 per cent of the concentrated mother liquid [nigari] obtained in the manufacture of salt from sea water, whereupon the albuminoid material is precipitated in combination with calcium and magnesium salts.” After pressing, the tofu is finally cut into cakes about

10 cm broad, 2 cm thick, and 25 cm long [about 3.9 by 0.79 by 9.8 inches], though the size varies in different localities.

“The residue from the boiled and filtered beans is known as kara [okara], or tofu cake, and contains a large quantity of protein and carbohydrates. It is a good food material, being used considerably by poor people as an ingredient of miso soup.

“If the milky filtrate mentioned above is boiled, a sort of film forms on the surface. This film, which consists mainly of coagulated albuminoids and fat, is sometimes prepared in large quantity, and when dried is used as an article of food, being known as yuba.

“Tofu is generally prepared every day and is eaten in the fresh condition simply with a little shoyu, though it is also frequently cooked in shoyu or in miso soup. Fried tofu, called abura-age, is also a very popular article of food, Rape-seed oil is generally used in frying, though sesame oil is sometimes used.

“Tofu may also be prepared for preservation and transportation. For this purpose it is cut into smaller pieces and exposed to severe cold weather, to remove the water by freezing, and then dried in an oven. As thus prepared it can be preserved for several years. When the tofu is frozen the water collects in fine needles of ice distributed throughout the mass. When the ice melts and the water runs out, it leaves the tofu porous and it may be easily dried. If it is not frozen, it is difficult to dry it and the resulting material is dense and horn like.”

Table 2 (p. 28) gives the average composition of the above-mentioned tofu preparations: “Fresh tofu, frozen tofu, fried tofu, tofu cake [okara], yuba.”

The digestibility of the nutrients in tofu has been found to be high, as will be seen from the results of digestion experiments summarized later (p. 191). As much as 95 per cent of the protein is digested and about the same proportion of fat. The carbohydrates were found to be somewhat less digestible when the tofu was eaten alone, but when it was eaten with rice about 99 per cent of the total carbohydrates of the diet was digested.

“Both the composition and the digestibility of tofu, therefore, prove it to be a very nutritious food material. This is extremely significant, because tofu in its various forms is used very extensively by all classes of Japanese. In the interior of the country, where fish can not be easily obtained, it is a most important source of protein. For Buddhist priests, as well as the strict adherents to Buddhism (who eat no animal food), it forms a very popular and almost indispensable dietary article. Though no authentic record has been found regarding the manufacture of tofu in Japan, it is believed on good authority that the method was first introduced from China by Buddhists for their own use.” Address: Director, Hokkaido Agric. Exp. Station, Sapporo, Japan.

377. Oshima, Kintaro. 1905. A digest of Japanese investigations on the nutrition of man: Miso (Document part). *USDA Office of Experiment Stations, Bulletin No. 159*. 224 p. See p. 28-30. [1 ref. Eng]

• **Summary:** “Miso: This material is prepared from a mixture of soy beans, barley [note that he does not say rice], common salt, and water by a slow process of fermentation. Although it is highly probably that the process of preparing miso was first introduced either from China or from Korea, the exact date of the introduction is not known. Mention is made of miso in a Japanese record of the latter part of the ninth century.

“In the extent to which it is used, miso surpasses all other preparations from soy bean. Among the rural population and wage-earners in general it forms an indispensable part of the daily menu; among the people living in cities, however, it is used somewhat less extensively. Its chief use is in making soup and in cooking vegetables. For this latter purpose, however, miso and shoyu are to a certain extent replaceable, and generally when more shoyu is used the amount of miso consumed is smaller.

“Since it is the general custom for the people in rural districts to prepare miso for their own use, no accurate statistics regarding the total quantity manufactured and consumed are available. It has been estimated that the daily consumption of miso per person in the rural districts is about 40 grams. In the statistics of 25 dietary studies described beyond (p. 131), with people living elsewhere than in the country, the average daily amount was 43 grams, but the range was from 13 to 100 grams.

“The production of miso depends primarily on the action of a fermenting agent known as koji. The process of preparing the koji used for miso is similar to that for sake-koji (see p. 36), except that for the latter only rice is used, whereas miso-koji may be made from either rice or barley. The object of preparing miso-koji is to propagate certain forms of fungi, of which *Aspergillus oryzae* is the principal one. The koji also contains diastatic and inverting ferments which change the carbohydrates of the raw materials into maltose, glucose, etc., and a proteolytic ferment which acts upon the nitrogenous bodies, converting them into simpler and more soluble materials. The yeast which causes alcoholic fermentation is also regularly present. Koji is dried and finely powdered before it is used.

“To prepare miso the soy beans must first be steamed, and upon this process depends largely the quality and especially the color of the final product. The steaming is continued usually twenty-five hours, at first with strong heat but later very gently. When the beans are properly steamed and cooked, they are rubbed into a thick, uniform paste, to which are added proper amounts of powdered koji, salt, and water. The whole mass is then well mixed and stored in a special vat. The temperature of the mixture is kept at about

15° to 20° C., though as the fermentation advances it often rises to 25° C.

“Different kinds of miso are distinguished by color, taste, and keeping properties, and are prepared by somewhat different processes, the differences consisting chiefly in the use of rice or barley koji, the amount of common salt added, a longer or shorter fermentation, and the temperature at which it takes place. Two of the most important kinds of miso are the following:

“*White miso*.—This material is white in color, contains a small amount of common salt, is fermented with rice-koji for three to four days, and may be preserved about ten days.

“*Red or sendai miso*.—This material is red in color, contains a relatively large amount of common salt, is fermented usually with barley-koji for one and one-half to two years, and may be preserved for several years.”

A table shows the composition of white miso and red miso. Note: The source of this table is cited incorrectly. Address: Director, Hokkaido Agric. Exp. Station, Sapporo, Japan.

378. Plaut, Hermann. 1905. Japanese conversation-grammar: With numerous reading lessons and dialogues. Heidelberg, Germany: Julius Groos; New York & Washington, DC: Brentano's. viii + 391 p. See p. 111-13. [Eng; Jap]

• **Summary:** Words (p. 111): “*misoshiru*—a soup made with miso, a kind of bean-sauce.” “*nimame*—boiled [soy] beans.” “*teriyaki*—meat or fish baked with shōyu.”

Page 113. “15. Reading Lesson. *Nihon no shokujū*.” “*teriyaki unagi*.”

Note: This is the earliest English-language document seen (Jan. 2008) that contains the word “*teriyaki*.” It does not contain the term “*teriyaki sauce*.” The word and the definition are both in English; the book is in English with Japanese lessons and words. Address: Berlin, Germany.

379. Sakura-fu Co. 1905. Sakura-fu Co. (Ad). In: Nichibei Shinbun-sha. 1905. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Unnumbered page. [Jap; eng]

• **Summary:** Ad (½ page). The central ¼ is in English. This trading company sells various goods including shoyu, miso, and shiro / white sake (*shiro-zake*) and sake. They are also a shipping company.

A full-page ad in the 1908 yearbook states: “Sakura-fu Shōkai. Direct importers of all kinds of provisions. KSK. 1014–1016–1018 3rd St., Sacramento, California. Tel. Sunset Vale 1566.” They also sell retail. They still sell miso and shoyu, but shiro sake / white sake is not mentioned. Address: 1014 Third St., Sacramento, California. Phone: Vale 1566.

380. Tuck Wo. Co. (Tokuwago Shoten). 1905. Tuck Wo. Co. (Tokuwago Shoten) (Ad). In: Nichibei Shinbun-sha. 1905.

Zaibei Nihonjin Nenkan [Japanese-American Yearbook]. Unnumbered page in the block of ads after Directory p. 28. [Jap; eng]

• **Summary:** Ad (¼-page). This company sell various goods including shoyu and miso. The company name and address are in given in both English and Chinese. This ad also appears in the 1906 yearbook, and in the 1907 yearbook (near the end, p. 36). Address: 33 Cleveland Ave., San Jose, California. Phone: James 3821.

381. Peltriset, C.N. 1906. Les cultures alimentaires en Indo-Chine [The food crops of Indochina]. *Bulletin des Sciences Pharmacologiques (France)* 13:427-435. Aug. See p. 429-30, 434. [1 ref. Fre]

• **Summary:** “Next we will discuss the seeds of the soybean (*Soja hispida* ou *Glycine hispida*). This interesting product is used in many ways: the most interesting is, undoubtedly, the preparation of soy cheese (*fromage de soja* [tofu]), which is real vegetable casein (*veritable caséine végétale*).

Next is the complicated and difficult preparation of the fermented sauce, known under the name of *tuong* [a sort of soft miso]. Then, the therapeutic use of soy bread (*pain du soja*), commended for diabetes, because of its low content of sugars and starches, and its richness in albuminoids (*albuminoïdes*). Finally, the industrial and food uses of the oil obtained by expression / pressing (*expression*).

A table of synonyms (p. 433-35) gives the family name, the scientific name, and vernacular / local name in Indochina of 66 plant species, including: “Légumineuses—*Soja hispida* Sieb et Zucc—Dâu nành.”

Also discusses: *Cajanus indicus*. *Dolichos sinensis* et *tonkinensis*. Cowpeas (*Vigna sinensis*). Mung beans (*Phaseolus radiatus* L.; *haricot mungo*), which has green seeds, widely used for sprouting. An illustration (facing p. 430) shows mung bean sprouts and an entire mung bean plant. Job’s tears (*Coix Lacryma* L.; *larmes de Job*). Quinoa (*Chenopodium quinoa*; *Ansêrine*, *Quinoa blanc*). Address: Head of micrographic work, Elite Public College of Pharmacy of Paris (Chef des travaux micrographiques à l’École supérieure de Pharmacie de Paris).

382. Abel, Mary Hinman. 1906. Beans, peas, and other legumes as food. *USDA Farmers’ Bulletin* No. 121. 38 p. See p. 11-13, 18-20. Corrected. Illust. [1 ref]*

• **Summary:** A corrected edition, 1 pages shorter than the 1904 revised edition. The information about soy is unchanged.

383. Karuhorunia Company [California Co.]. 1906. Karuhorunia Company [California Co.] (Ad). In: Nichibei Shinbun-sha. 1906. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Unnumbered page near the front. [Jap; eng]

• **Summary:** Ad (full page). They are an import, export, and wholesale company. “Direct importers of tea and rice. Manufacturers of Japan miso.” Their miso manufacturing company is named California Miso Seizô-sho, located at 262 Brannan St. They also sell various goods including miso. Address: 149 California St., San Francisco, California. Phone: Red 1002.

384. **Product Name:** Miso.

Manufacturer’s Name: Karuhorunia Miso Seizo-jo [California Miso Manufacturing Co.].

Manufacturer’s Address: 262 Brannan St., San Francisco, California. Phone: Red 1002.

Date of Introduction: 1906. January.

New Product–Documentation: Ad (full page) in Nichibei Shinbun-sha. 1906. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Unnumbered page near the front. They are: “Direct importers of tea and rice. Manufacturers of Japan miso.” Their miso company is named California Miso Seizô-sho. They also sell various goods including miso.

385. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1906. *Zaibei Nihonjin nenkan [Japanese-American yearbook. No. 2]*. 234 Turk St., San Francisco, California. 345 p., many unnumbered. Reprinted in 25 Oct. 2001 in Tokyo by Nihon Toshosenta. Series: Nikkei Imin Shiryôshû. Dai 1-kai [Collected Documents on Japanese Emigration. No. 1]. [Jap; eng]

• **Summary:** This book is read and numbered from “back to front” compared with typical English books; it is mostly (99%) in Japanese. There is an English-language title page.

The book is composed of: 4 unnumbered pages of front matter, 4 unnumbered leaves of black and white photos (mostly of San Francisco) on glossy paper, 20 unnumbered pages of ads and basic information, of which the 4th to last page is why and how they wrote this book (they got a lot of help from people in various areas to gather data, although no names or places are given), and of which the last two pages are the table of contents, 224 numbered pages which are the body of the book, 44 unnumbered pages of ads, 59 pages of directory interspersed with 50 pages of ads in groups of either 16 or 32 pages.

There is a tofu shop in San Francisco (p. 183, bottom right) and a shoyu (soy sauce) maker in San Jose (p. 189, top right); last year Yamamori Shoyu Jozo-sho made 1,000 koku of shoyu. Note: 1 *koku* = 10 *sho* = 180 liters. Therefore the company made 180,000 liters of shoyu. Since 1 liter = 0.264 gallons, this is 47,520 gallons of shoyu.

There is 1 tofu shop in Florin (p. 203, top right) and two tofu shops in Isleton (p. 204, top right).

The Directory shows Japanese companies making soyfoods in California and Washington state. It is preceded

by an index of the Directory. Address: San Francisco, California.

386. Senft, Emanuel. 1906. Ueber einige in Japan verwendete vegetabilische Nahrungsmittel, mit besonderer Beruecksichtigung der japanischen Militaerkonserven [On some vegetable foods used in Japan, with special attention to Japanese military canned foods]. *Pharmazeutische Praxis* 5(12):481-91. [5 ref. Ger]

• **Summary:** Working for the German Food Administration, the author examined a number of preserved foods that had played an important role in helping Japan to win the Russo-Japanese war. He drew heavily on Loew (1895). “Widely distributed in Japan is a unique baked good, which is produced primarily from wheat gluten with only a little of wheat flour; it is called *Fu* (wheat gluten bread).

“A very important role is played by the soybean and the many diverse products made from it: Yuba, the vegetable cheeses tofu, natto, and miso, plus shoyu or soy-sauce (*Shoju oder Soy-Sauce*). Like the soybean, tofu and natto are rich in protein. They supply the protein lacking in rice.”

Also discusses fresh konnyaku, dried-frozen konnyaku, dried persimmons, sea vegetables (12 types in great detail, with an illustration of the cells of a kombu plant), and warabi (dried ferns). Address: Official of military medicines, Committee of military hygiene.

387. Stuerler, F.A. von. 1906. Nederlandsch Oost-Indische cultuurgewassen: Hunne kenmerken, teelt en bereiding [Crops of the Dutch East Indies: Their characteristics, cultivation and preparation]. Tiel: A. van Loon. ii + 373 p. See p. 341-43. Illust. Index. 25 cm. [5 ref. Dut]

• **Summary:** The subsection on the hibiscus plant (*De Waroe-boom, Hibiscus tiliaceus*, p. 334) states that the leaves are used in making foods from soybeans [tempeh].

In the chapter on crops that yield oils and fats (*Vette oliegewassen*, p. 335-44), the section titled “Soja” (p. 341-43) has the following contents: General botanical characteristics: Introduction, the plant, stem, leaves, flowers, fruit, seeds. Cultivation. Chemical composition of the seeds, preparation, and uses.

The main product made with soybeans is soy sauce (*kètjap*). The Chinese in Java cook the soybeans and inoculate them between hibiscus leaves (*Hibiscus tiliaceus*) to make tempeh (*tèmpé*). They also make *tao-tjo*, a sort of bean paste (Indonesian-style miso). And with the black soybeans they make a sort of bean cheese, *tao-djie* (soy nuggets). Also discusses peanuts (*aardnooten*, p. 335-37), sesame seeds (*sesam*, p. 337-39), the castor oil plant (*ricinus*, p. 339-41), other crops that yield oils and fats (p. 343-44).

Note: This is the earliest document seen stating that molds grown on Hibiscus leaves are used in Indonesia to inoculate tempeh. Address: Leiden.

388. Takemoto Shoten. 1906. Takemoto Shoten (Ad). In: Nichibei Shinbun-sha. 1906. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Unnumbered page near the front. [Jap]

• **Summary:** Ad (full page). In big Chinese characters the ad says “New Year’s Greetings.” They sell various goods including miso and shoyu. A small illustration shows some bamboo leaves, with snow on them and a little bird flying. Address: P.O. Box 332, Gilroy, California. Phone: Main 334.

389. Teikoku Shokai. 1906. Teikoku Shokai (Ad). In: Nichibei Shinbun-sha. 1906. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Unnumbered page near the front. [Jap]

• **Summary:** Ad (full page). This company, owned by USHIO Mankichi and KUBO Sakujiro, imports various goods directly including miso and shoyu. An illustration shows two crossed flags; one is the flag of Japan. Address: 802 Stockton St., San Francisco, California. Phone: Main 5556.

390. Woenne (W.M.). 1906. W.M. Woenne (Ad). In: Nichibei Shinbun-sha. 1906. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Unnumbered page near the front. [Jap; eng]

• **Summary:** Ad (half page). In big Chinese characters the ad says “Happy New Year.” They sell various goods including miso and shoyu. Address: Mt. Eden, Alameda, California.

391. *New York Times*. 1907. Here is a Japanese bill of fare: Prof. Chittenden shows value of simple diet used in Japan. Aug. 11. p. SM5.

• **Summary:** A typical bill of fare of a Japanese family in moderate circumstances includes: “Breakfast (from 7 to 7:30 A.M.)—Miso soup with vegetables. Boiled rice, pickles, and tea. Sometimes raw egg or boiled sweet soya beans or natto.

“Lunch (12 noon)—Fish boiled in soya. Vegetables stewed in soya. Boiled rice, pickles, tea.

“Supper (from 6 to 6:30)—Soya soup. Vegetables. Raw fish sliced, eaten with soya sauce...”

“The miso, soya sauce, and topi [sic, tofu] are all products of the soya bean, on which, with rice, the Japanese physique may be said to be built up.” “Rice is the main foodstuff, with the soya bean a close second.”

Prof. Chittenden of Yale University notes that Japan’s “exploits in war have recently attracted the attention of the civilized world.” Yet the great majority of Japanese have “remained untouched by the prodigality of Western civilization.” Their “habits and customs still bear the imprint of simplicity and frugality.”

Since Japan defeated Russia in war, many observers have noted that “the people of no other nation... have greater powers of physical endurance, or greater bodily strength and agility...”

392. Bloch, A. 1907. Le soja. Sa culture, sa composition, son emploi en médecine et dans l'alimentation [The soybean. Its culture, its composition, its use in medicine and in food]. *Bulletin des Sciences Pharmacologiques (Paris)* 14:536-51. Sept.; 14:593-606. Oct. [46 ref. Fre]

• **Summary:** A review of the literature drawing heavily on Egasse (1888), Trimble (1896 and 1897), and Williams & Langworthy (1897, revised 1899), and including many others. Contents: Introduction (mainly a long history of the soybean worldwide, with emphasis on Europe). Chemical composition of the soybean. Chemical composition of the soybean plant.

Part II: Preparation of shoyu. Preparation of miso. Natto. Preparation of tao-yu ([Chinese-style soy sauce] a condiment made with black soybeans, hibiscus leaves, and *Aspergillus Wentii* mold) and tuong. Tofu and yuba. Other soyfoods, incl. soy coffee.

“We are presently looking everywhere for ways of giving economic value to our colonies. It seemed interesting to me to draw attention to the soybean, the Chinese bean (*le Soja, Haricot chinois*) which contributes a large part of the food of the people in China, Japan, and the Far East. Already in use in Indochina, tested in Europe with success then abandoned for no apparent reason, the soybean could acclimatize itself in other colonies of ours, particularly in Madagascar, and perhaps in certain of our African possessions, and therefore could contribute to increasing their riches and the well being of their indigenous peoples.”

Soy oil “can be extracted partially by pressure or completely by ether or petroleum ether. It is yellowish red with a not particularly disagreeable odor.”

Mr. Lailleux, a former intern at the hospital in Algiers, has reported that a certain number of diabetic Arabs under treatment at the hospital of Dey, in Algiers [Algeria], have been helped by a dietary regimen based on soybean pap.

Note 1. This is the earliest document seen (April 2004) concerning soybeans in connection with (but not yet in) Madagascar.

Note 2. This is the earliest French-language document seen (Feb. 2004) that mentions natto, which it calls *le natto*. Address: Pharmacist major 2nd class of the colonial troops. Doctor of pharmacy.

393. Ruata, Guido; Testoni, Giuseppe. 1907. La soia nell'alimentazione italiana [Soy in the Italian diet]. *Ministero d'Agricoltura, Industria e Commercio. Bollettino Ufficiale* 6(6):698-718. Dec. 18. (Chem. Abst. 2:864). [35 ref. Ita]

• **Summary:** Contents: Introduction. Description of the soybean. Cultivation and its history in Europe. Harvest and yield. Nutritional value of the soybean: Tables show analyses according to König (10 tables), to Balland (1 table analyzing 3 varieties, from Cambodia {Exposition of 1900}, from Cochin China, and from Tonkin), to Gautier (1 table), to Maurel (1 table), and to Lechartier and Joulie (from Grandeau 1903, analyzing 3 varieties, from Etampes, black soybean, and yellow soybean—all grown in France; each either as is or dry). Tables of nutritional analyses by Ruata & Testoni (includes the weight of 1,000 seeds for each variety): I. Black soybean, from Vilmorin-Andrieux of Paris, France; from Dammann & Co. [seedsmen] of Naples (Italy); and from the Inst. of Hygiene of Bologna, Italy. II. Giant Yellow, from Etampes (Pinolini), from Naples (Dammann), from Bohemia (*Boemia*-Ingegnoli); III. Small yellow soybean (from Dammann in Naples). IV. Green soybean (from Dammann). V. Brown soybean (from Dammann). The authors believe the Giant Yellow soybean is best adapted to Italian conditions. The analysis of the variety from Naples is as follows: Weight of 1,000 seeds: 205 gm. Water 9.80%. Albuminoids 37.13% (*albuminoidi*, protein) Carbohydrates 24.40%. Fat 18.36%. Lecithin 1.62%. Crude fiber 4.47%. Ash: 4.30%.

Preparation of soybeans (detailed descriptions and nutritional analyses): The whole seeds, miso (*Il miso*), tofu (*To-Fu* or *to-fu*), shoyu (made with koji), soy flour and bread (*farina e pane di soia*, incl. experiments by Brugia, and Rimini), soy polenta. Conclusions.

Three non-original illustrations (line drawings; between p. 700 and 701) show three different full-size views of the Soja plant, including: (1) Plant with roots. (2) Stem, leaves and pods. (3) Stem and pods (Original from Pinolini 1905).

Several bar graphs (following p. 712) give nutritional composition comparisons of 12 staple foods, mainly legumes, cereal grains, dairy products, and meat: Fig. 2—Albuminoids (protein content); soya is the highest with 37.13%. Fig. 3—Carbohydrate content. Fig. 4—Fat content; soya is highest with 18.36%. Fig. 5—Salt (*Sali*).

Other tables show: (1—p. 701): For four soybean varieties, weight of 100 liters in kg and number of seeds per kg. Soia d'Etampes yellow 72 / 7,400. Black soybean from Podolia 74.5 / 7,400. Yellow soybean 72.5 / 8,550. Black soybean 73 / 12,200. Note that the black soybean has by far the smallest seeds.

Selected translations of the text: The first part of the article discusses dietary problems in Italy, especially pellagra, a skin disease caused by deficiencies in protein and niacin. One of the causes seems to be the consumption of corn, especially spoiled corn (*maiz guasto*) (p. 699-700). The authors are interested in studying the soybean as a potential new food for Italy, based on the examples from other countries where it has been consumed for a long time and where corn is unknown or almost unknown. They want

to take the initiative in getting the best possible advantage from the introduction of soybeans as an Italian food (p. 700). In Italy the varieties which grow well are the early black, the yellow, the brown, the green, and the giant yellow; the latter is similar to the variety Soya Etampes, which has been acclimatized in France (p. 701). History in Italy: According to Pinolini, the soybean made its appearance around 1840, and has been cultivated with success around Verona, along the Lombard coast of Lake Maggiore, and near Mantua and Lucca (Mantova and Lucchese). As far as we know, it either was cultivated or is still cultivated in Liguria, Friuli, the Marches, and Emilia. Around Naples, it is especially cultivated in San Giovanni a Teduccio, under the care of Dammann & Co., a seed company (p. 702).

In the year 1906 in a field annexed to the Institute of Hygiene, we conducted experimental cultivation of soybeans, sowing the black variety from Podolia, sent to us by the Vilmorin-Andrieux, a seed company in Paris. A similar experiment was carried out on a larger expanse of land, at the same time as ours and with the same seeds, by Dr. Ignazio Buldrini at his farm near Bologna. The land at the Institute of Hygiene, being rather rich in humus, was fertilized with phosphate fertilizer at the rate of 500 kg/ha and potassium sulfate at the rate of 100 kg/ha. Dr. Buldrini's land, well supplied with potassium and phosphoric anhydride,... was fertilized with plenty of manure. The seed was planted on both fields in early May. The vegetation developed regularly and in August we obtained a harvest that yielded 1,500 kg/ha of seeds reaching perfect maturation (p. 703).

Brugia (1902) has conducted numerous experiments in baking with soy flour, and here is what he writes about it: "It is necessary to find an inexpensive food with great nutritional value for the poor farmers and rural people. It would be ideal to be able to make bread from soybean flour, thus creating a food that would be physiologically balanced and complete." He first tried mixing soy flour with wheat flour in the proportions 50/50 and 30/60, but the results were unfavorable. Then they tried using brewer's yeast in the process and had very good results, except that the price was a little high. It was then necessary to substitute a mixture of bicarbonate of soda and cream of tartar ($\frac{1}{2}$ gm per 3 g of flour) for the brewer's yeast. This worked very well. He then gives a table showing the nutritional analysis of the best bread (p. 716). In the conclusions of his work, Brugia says: "Soy flour cannot be used by itself in baking. But mixed with wheat it gives an optimum bread, soft textured, complete and balanced nutritionally, economical, and convenient. A second table shows an analysis of soy bread published by Rimini (1902) (p. 716).

Soy polenta, a mixture of soy and corn, was named Soyenta by Haberlandt who first prepared it. It could be of nutritional benefit to the people in those parts of Italy who

get almost all of their nutrients from polenta. We have conducted numerous tests to find a type of Soyenta (to adopt Haberlandt's name) which, because of taste and ease of preparation, could enter into the diet of our rural population without difficulty. Here are the results of our experiments with various types of Soyenta: (1) With whole yellow soy flour: The resulting product does not have a soft consistency; it is coarse and crumbles rather easily, but the taste is nice. (2) With sifted soy flour: This product is not as good as the previous one, because it is too sticky. The taste reminds us of infant cereal made of wheat flour. (3) Soy flour mixed with wheat flour in varying proportions: Not advisable because it presents in various degrees the difficulties of the former. (4) (p. 717). Soy flour mixed with corn flour: Best results were obtained with a mixture of 1 part soy flour to 4 parts corn meal (coarsely ground, Veronese style). The consistency of this product is not unlike that of regular polenta, and the flavor is also very close. Hot or cold it slices very well, and overall it can be used just like regular polenta, but it has more nutritional value (p. 717).

Note 1. This is the earliest Italian-language document seen that mentions tofu, which it calls *To-fu*.

Note 2.

Note 2. This is the earliest Italian-language document seen (March 2009) that uses the word "miso" (*Il miso*) to refer to miso.

Note 3. This is the earliest Italian-language document seen (Aug. 2003) that uses the term *albuminoidi* to refer to protein in connection with soybeans. Address: 1. Direttore dell'Istituto d'Igiene della Regia Università di Bologna (Director of the Inst. of Hygiene at the Univ. of Bologna); 2. Insegnante nella Regia Scuola Media Commerciale, Direttore del Laboratorio chimico Compartimentale delle Gabelle di Bologna, Italy.

394. **Product Name:** [HVP Cubes or Paste? ("A Type of Miso")].

Manufacturer's Name: Jul. Maggi & Co.

Manufacturer's Address: Kempthal, Switzerland.

Date of Introduction: 1907.

New Product-Documentation: Senft. 1907.

Pharmazeutische Praxis. 6(3):81-89; 6(4):122-24, 131-32.

"Recently the firm of Jul. Maggi in Kempthal [Switzerland] has begun to make and market a type of miso."

Note: This is the earliest known commercial soy product made in Switzerland.

395. **Product Name:** Miso.

Manufacturer's Name: Yamane Miso, Sakana Sho (Fish Shop).

Manufacturer's Address: 309½ L St., Sacramento, California.

Date of Introduction: 1907.

New Product–Documentation: Nichibeï Shinbun-sha. 1907. *Zaibei Nihonjin Nenkan [Japanese-American Yearbook]*. Directory entry p. 56. Note: This company makes miso and sells fish. Also in 1908, Directory p. 68 (Japanese numbers). Address is now given as 309 L Street.

396. Asai, Denzaburo; Saito, Rokuzan. 1907. *Miso ryôri nihyakushû: katei jitsuyô* [Two hundred miso recipes: For practical use at home]. Tokyo: Yurakusha. 159 p. 23 cm. [Jap]*

• **Summary:** Note: This is the 2nd earliest book in WorldCat / OCLC that has miso as a subject or title word. Address: Japan.

397. Jumelle, Henri L. 1907. *Les ressources agricoles et forestières des colonies Françaises* [The agricultural and forestry resources of the French colonies]. Marseille, France: Barlatier, Imprimeur-Éditeur. viii + 442 p. See p. 333. No index. 28 cm. [2 ref. Fre]

• **Summary:** In the chapter on Indo-China (p. 267-363) is a section on coconuts (p. 322+) followed by a section on “Other oil-bearing plants” (*Les autres plantes oléagineuses*), which contains paragraphs (p. 326-27) on the sesame seed (*Le sésame*, cultivated in Cambodia) and the peanut (*L’arachide*, long cultivated in Cochin China and central and south Annam). Some confusion exists concerning the oil of *Aleurites cordata* (Chinese wood oil, *l’huile d’abrasin*) (p. 331-32): “Why is this oil, so well known and widely used in Indo-China, not exported, as is its analogous oil from China? It is not ignored by European and American manufacturers; and in the United States, as in Europe, it is in demand * by the factories that make linoleum or that prepare varnish from copal.” (Footnote: *) “It seems that the oil imported into Europe and the United States is often adulterated with oil from the seeds of *Soja hispida* [soybeans], which is likewise a very drying oil”.

The next section, titled “The indigenous food” (*L’alimentation indigène*) (p. 332-35) includes a discussion of various legumes consumed in Indo-China. “Among the leguminous seeds used as food, there is a large consumption of kidney-beans (*de haricots*), of dolichos beans (*de doliques*), and, even more, of soybeans (*de sojas*).” “The large consumption of the soybean (*du soja*) is due to the fact that its beans, not only are eaten after a long cooking, but, again, serve as the base for various preparations, as in Japan and China (Footnote: It is with these soybeans, mixed with wheat and *koji*, and coarse salt, that the Japanese make their *shoyou* [*shoyu*, soy sauce] and their *miso*, and the Chinese their sauces or analogous dishes, *teou-ju* and *teou-tiung*. In Java, the indigenous people make similar preparations. The fermentations are, in all these cases, caused by various molds.) It is thus that the Annamites [of central Vietnam] make a cheese called *dau-phu*, which is the *teou-fou* of the Chinese, the *tofu* of Japan. They likewise make a sauce

named *tuong*, which is almost the same as the *teou-tiung* [*doujiang*] of the Chinese, and two cheeses [tofu], one solid, the other of a softer consistency, called *dau-hu* and *dau-hu-ao* in Cochin China.” Address: Prof., Faculte des Sciences de Marseille [Marseilles], France.

398. Nichibeï Shinbun-sha (Nichi-Bei Shinbunsha). 1907. *Zaibei Nihonjin nenkan* [Japanese-American yearbook. No. 3]. 234 Turk St., San Francisco, California. 398 p., many unnumbered. Reprinted in 25 Oct. 2001 in Tokyo by Nihon Toshô Senta. Series: Nikkei Imin Shiryôshû. Dai 1-kai [Collected Documents on Japanese Emigration. No. 1]. [Jap; eng]

• **Summary:** This book is read and numbered from “back to front” compared with typical English books; it is mostly (99%) in Japanese. There is an English-language title page.

The book is composed of: 4 unnumbered pages of front matter, 6 unnumbered leaves of black and white photos (mostly taken after the San Francisco earthquake and fire) on glossy paper, 18 pages of ads and basic information, numbered using Japanese numbers (NUJN), of which the last two pages are the table of contents, 176 numbered pages which are the body of the book, 84 unnumbered pages of ads, 75 pages of directory (preceded by an index of the directory) NUJN, 35 pages of ads and back matter NUJN.

There are two tofu shops in San Jose, California, and also two breweries (*jozo-sho*). Note: One may have been for brewing shoyu and the other for sake (p. 153). The San Jose shoyu maker [Sa-shi Shoyu Jozo-sho] helped Komada Shoten [probably not a shoyu maker] in San Francisco last year. Although they used wheat and salt made in the U.S., they had to get soybeans and also the bamboo hoops for the wooden kegs (*taru*) from Japan. It cost them over 50 cents to make one wooden keg; that’s a problem (p. 154, top right). There is one tofu shop in Watsonville (p. 154, bottom center).

The Directory shows Japanese companies making soyfoods in California and Utah. Address: San Francisco, California.

399. Senft, Emanuel. 1907. *Ueber einige in Japan verwendete vegetabilische Nahrungsmittel, mit besonderer Beruecksichtigung der japanischen Militaerkonserven* [On some vegetable foods used in Japan, with special attention to Japanese military canned foods]. *Pharmazeutische Praxis* 6(3):81-89; 6(4):122-24, 131-32; 6(6):211-12, 219. [19 ref. Ger]

• **Summary:** These three sections contain a good review of the literature (especially the Japanese literature) in German. Issue No. 3 begins with “Phanerogams. Chapter 5. Legumes. Soybeans and soybean preparations” (p. 81-89). Contents: Introduction. Varieties: Group I. *Soja platycarpa*-Harz (5 forms–olivacea-Harz and punctata-Harz,

melanosperma, platysperma, parvula Martens). Soja tumida-Harz (3 forms—pallida Roseb. [sic, Roxb = Roxburgh], castanea-Harz [brown], atosperma-Harz). Anatomy and cell structure of different parts of the plant and seeds. A non-original illustration (line drawing; p. 83) shows a soy bean, full-size and at cellular levels. Haberlandt and the Vienna World Exposition of 1873. Foods made from soybeans in China and Japan described by Charles Bryant (1785): Miso, soy sauce (*sooju-sauce* or soy), Roos, Koji. Tofu, sake. Shoju or Soja-Sauce. Miso (vegetable cheese; “Recently the firm Jul. Maggi & Comp. in Kempthal makes a type of miso and sells it commercially”).

Issue No. 4 begins with “Natto and tofu” (*Bohnenkäese*) (p. 122-24) and includes fresh tofu and frozen tofu (*gefrorener tofu*). Yuba. A separate section on miso pickles (*Misozuke*; p. 131-32) describes the different types, especially those made with daikon (*Rettiche*).

Issue No. 6 discusses shoyu (called *Extrakt-Sauce Japonica*, or Shoju-Sauce) (p. 211). A table (p. 212) lists the main food plants of Japan, including five different “varieties” (“var.”) of soybeans: *Kuro-mame*, *Shiro-mame*, *Ao-mame*, *Goishi-mame*, *Gankui-mame*. A photo (p. 219) shows various Japanese preserved foods, including a metal box containing “Fukujinsuke” [*fukujinzuke*] consisting of sliced vegetables (cucumbers, bamboo shoots, onions) preserved in soy sauce. Address: Military medicine official, Germany.

400. Strakosch, Siegfried. 1907. Das Problem der ungleichen Arbeitsleistung unserer Kulturpflanzen [The problem of the unequal production efficiencies of our crop plants]. Berlin: Verlagsbuchhandlung Paul Parey. 110 p. No index. 23 cm. [Ger]

• **Summary:** This book, dedicated to Julius Wiesner, “the master of plant physiology,” looks at national food supplies from the viewpoint of plant physiology. In the section on “Calculation of assimilative effects,” a table (p. 44-45) compares rye, wheat, corn, rice, soybeans, and potatoes in their production per hectare of starch, digestible protein, value of product in German marks, value of nutritive elements consumed, assimilative effect (defined as the ration of the value of the usable substance produced per unit area to the value of the nutritive elements borrowed from the soil by producing this substance), assimilative effect compared with rye, and difference between the production and consumption in German Marks. Soybean produces much more protein per given area of land than the other crops, has the highest assimilative ratio, 6.68 times larger than that of rye. Thus the culture of soybeans should be the most remunerative.

In the same section, a bar graph (p. 48) shows the value (in marks) of physiologically useful substance resulting from withdrawal of one mark worth of soil nutrients. The soybean gives the greatest returns of the 22 plants listed.

In the section on “Consideration of plant production efficiency in crop rotations” (p. 66+), the legumes are praised and soybeans are mentioned on pages 71 (the most productive of all legumes with an enormous number of 668) and 73. In this context, the work of Friedrich Haberlandt with soybeans and his book, *Die Sojabohne* (The Soybean, Vienna, 1878) are described in detail (p. 74-76). Haberlandt died shortly after the publication of this book, and Hecke, his friend, carried on his work.

In the last chapter, “Goals and consequences,” a table (p. 102) shows the productivity in the northern U.S. states of nine crops, including wheat, barley, corn, sugar beets, peas, Jerusalem artichokes, and soybeans. In value of crop per hectare, soybeans are third after Jerusalem artichokes (German: Topinambur; French: Topinambour) and sugar beets. Two long footnotes (No. 122 and 123, p. 109-10) discuss the importance in Japan of soybeans and the various foods made from them including shoyu (Shoju, Shoyu), miso, tofu, and yuba. Address: Dr., Wien-Hohenau.

401. **Product Name:** Miso, Koji.

Manufacturer’s Name: Kodama Miso Seizo-sho.

Manufacturer’s Address: 310 Crocker St., Los Angeles, California. Phone: MAin 3820.

Date of Introduction: 1908. January.

New Product–Documentation: Rafu Shinposha. 1908. *Rafu Nenkan* [*Rafu Shinpo Japanese-American year book*]. Ad, unnumbered page near front. Suri-miso, shiro koji seizo oroshi-uri. Rafu, Kurakka-gai 310. Denwa Meen 3820 [Ground miso. White koji maker and wholesaler]. Directory entry, p. 43.

Note 1. This is the earliest known miso manufacturer in Los Angeles or in California. Note 2. “Rafu” is the Japanese nickname for Los Angeles.

402. Takahashi, Teizô; Shito, Gorô. 1908. Miso no seibun ni tsuite (yohô) [On the composition of miso (prediction)]. *Tokyo Kagaku Kaishi (J. of the Tokyo Chemical Society)* 29(2):101-16. Feb. 28. [Jap]

Address: 1. Nôgaku hakase, Japan.

403. Chalmers, P.A. 1908. Japan: Report for the year 1907 on the trade of North Formosa. *Diplomatic and Consular Reports, Annual Series (Foreign Office, Great Britain)*. No. 4041. p. 1-19. June.

• **Summary:** A map shows the northern three-fourths of the island of Formosa, including railways, projected railways, and the savage frontier. It is in the Tamsui Consular District; the main city is Taihoku. Discusses the total trade of Tamsui and Keelung (both port cities) into North Formosa. Efforts are being made toward “pacification of the 30,000 aborigines of the island” using 5,000 border police.

Annex I shows return of principal articles of import into Tamsui and Keelung during the years 1906-07. One major

item is opium from Britain, Persia, Turkey, and China. Small amounts of miso and soy [sauce] were also imported. Trade into Keelung [later named Chilung] comes from Moji and Kobe [Japan]. Trade into Tamsui comes from Foochow, Amoy, and Hongkong. Address: British Consul.

404. **Product Name:** Miso.

Manufacturer's Name: Hawaiian Yamajo Soy Company.

Manufacturer's Address: Honolulu, Oahu, Hawaii.

Date of Introduction: 1908.

New Product–Documentation: Krauss. 1909. Hawaii Agric. Exp. Station, Annual Report. p. 83. "Seed of two other [soybean] varieties were donated by the Hawaiian Yamajo Soy Company of Honolulu. One of these, a green seeded type, has been grown in the Kona district of Hawaii for some years; the other, a yellow seeded variety, was imported direct from Japan. The seed of both these varieties is used in the manufacture of the Japanese food product, "Miso," and other preparations." [Note: It is not clearly stated that Yamajo makes miso. But some company in Hawaii was making miso at this time]. For the year 1908. Mr. Yamakami was manager.

Husted's Directory of Honolulu and the Territory of Hawaii. 1907. p. 609. Yamajo Soy Co., Nobuyuki Yamakami, mngr. Pua Lane, [Honolulu]. Two entries following: Yamakami, N., mgr, Yamajo Soy Co., residence King, near Palama Chapel. Note: No listing in 1905-06 Directory. 1909 Directory. p. 602. Company name has changed to Yamajo Soy and Sauce Manufacturing Co. Ltd., N. Yamakami, mngr, Pua Lane near Kukui. Note: Again no clear statement that Yamajo made miso.

Shurtleff & Aoyagi. 1983. The Book of Miso. 2nd ed. p. 234. In 1898 Hawaii was annexed as a U.S. Territory, so this company could be considered the earliest known miso manufacturer in the USA. Nihei. 1978. Nippon Jozo Kyokai Zasshi. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." He lists this company as having been founded in Honolulu in 1905, as a shoyu maker but not as a miso maker.

405. Agricultural Bureau, Department of Agriculture and Commerce. 1908. Agriculture in Japan. Tokyo: Agricultural Bureau, Department of Agriculture and Commerce. x + 455 p. See p. 225-29, 434, 439, 448, 453-54. No index. 23 cm. [Eng]

• **Summary:** A table of moneys, weights and measures (p. x) includes British equivalents of the following Japanese units: Money—*yen, sen, rin*. Length: *ri, chô, ken, shaku, sun*. Area: *cho, tan, sé, bu or tsubo, kô (9.724 tan)*. Capacity / volume: *koku, tô, sho, go*. Weights: *kwan or kwamme, kin, momme*.

In Chapter 6 titled "Agricultural products," in section 2 on "staple food stuffs" is a subsection titled "Soja beans" (p. 225-29) which begins: "In point of production and use, soja beans occupy an important position among the various

beans, they are extensively cultivated from the Hokkaido in the north to Formosa in the south. They find a congenial soil to prosper, the acreage for 1906 was 460,895 *cho* (1 *cho* = 2.45 acres) which with the exception of the acreage of barley (503,498 *chô*) is equalled by no other products from the upland fields. Their use is quite extensive. They are eaten boiled, baked and powdered while *soy, miso* and *tofu* (bean curd) made out of beans, are found even in the remotest villages. They are found on the table both of high and low. In making *soy [sauce]*, a by-product in a shape of soy-cakes is obtained and may be used as excellent manure while making *tofu*, the remaining ingredients [okara] may be used as a subsidiary diet and as food for cattle. Soja beans may also be pressed, and its oil used for the purpose of diet and for various technical uses, while the residue forms excellent manure. The fresh stalks of soja beans may be used as forage or as effective green manure. In short, soja beans, either as an article of Japanese diet, or as agricultural manure or as food for cattle are indispensable.

"The cultivation of beans under the circumstances was developed from ancient times, and numerous varieties are most extensively cultivated while by its peculiar nature of root, it absolves nitrogen from air so that high priced nitrogenous manure may be dispensed with, and therefore the cultivation of beans like other agricultural products do not exhaust the productive power of the soil, but on the contrary, it operates favourably to improve the soil. As for rotation of crops of wheat, millets, corns and potatoes, beans are indispensable. Seeds are sown early in the beginning of May."

Tables show: (1) Output of soja beans in Japan, 1897-1906." For each year is given the area (in *chô*), the production (in *koku*) and the yield (in *koku per tan*) (1 *koku* = 4.962 bushels; 1 *tan* = 0.245 acres). The area increased from 435,605 *chô* in 1897 to a peak of 482,044 *chô* in 1898, then slowly fell to a low of 446,844 *chô* in 1904, then rose to 460,895 *chô* in 1906. Production increased from 3,100,973 *koku* in 1897 to a peak of 4,069,619 *koku* in 1901, then slowly dropped to 3,557,592 in 1906. The yield in 1897 was 0.712 *koku per tan*, rising to a peak of 0.830 in 1904. Hokkaido has the largest area (43,924 *chô*) and production (392,140 *koku*). The principal soja bean producing districts are Ibaraki (33,000 *chô*), Saitama (29,000 *chô*), Iwate (26,000 *chô*), Nagasaki (26,000 *chô*), Kumamoto (26,000 *chô*), Niigata (22,000 *chô*). There is no prefecture where the production does not exceed 10,000 *koku*.

(2) "As mentioned above, soja beans are used either boiled, baked or powdered or as material for *tofu* (bean curd), frozen *tofu, soy* and *miso* (bean-cheese), and particularly the latter two products besides meeting with domestic demands, are exported abroad in large quantities, as may be seen in the following table." This table shows amount and value (in *yen*) of miso and soy [sauce] exported

from Japan each year from 1903 to 1907, inclusive. Miso exports increased from 1,670,092 *kin* (1 *kin* = 1.322 lb) in 1903 to a peak of 5,199,957 *kin* in 1907 (a 3.1 fold increase in 4 years), while soy [sauce] exports increased from 1,974,119 *shô* (1 *shô* = 1.9 quarts) in 1903 to 4,403,851 *shô* in 1907 (a 2.2 fold increase). The total yen value of these two exports rose from 489,213 *yen* in 1903 to 1,354,517 *yen* in 1907 (a 2.8 fold increase). In American units: Miso exports increased from 2.20 million lb (worth \$347,647) in 1903 to a peak of 7.50 million lb (worth \$132,652) in 1905, dropping to 6.86 million lb (worth \$135,833) in 1907.

Shoyu exports increased from 5.92 million lb (worth \$204,959) in 1903 to 13.21 million lb (worth \$541,425) in 1907. Note that in 1907 shoyu exports are worth about 4 times as much as miso exports.

(3) Because of increasing exports, Japan now needs to import soja beans from abroad. This table (p. 227) shows the amount and value of soybeans imported by Japan for the years 1903-1907, inclusive. They rose from 146,971 tons (worth \$3.18 million) in 1903 to a peak of 193,479 tons (worth \$4.92 million) in 1905, dropping to 177,365 tons (worth \$4.79 million) in 1907. They are mostly imported from Manchuria and Korea. "While a greater portion of these imports is used as material for *soy and miso*, it is also used in making bean-cakes and is sown for obtaining green manure, or used as manure or for feeding cattle."

(4) This table (p. 228) shows the quantity and value of [soy] bean-cakes imported into Japan for the years 1903-1907, inclusive. The cake was used mostly for fertilizer. Cake imports rose from 216,198 tons (worth \$3.81 million and representing 57.8% of all fertilizers) in 1903 to 367,210 tons (worth \$8.71 million and representing 44.8% of all fertilizers) in 1907. (5) This table (p. 229) shows acreage and production (output) of [soy] beans in Formosa [today's Taiwan]. Acreage doubled in 3 years from 11,226 *kô* in 1901 to a peak of 22,641 *kô* [53,886 acres] in 1904, then decreased slightly to 21,220 *kô* in 1906. Note 1. 1 *kô* = 9.724 *tan*, and 1 *tan* = 0.245 acres. Therefore 1 *kô* = 2.38 acres.

Production in Taiwan increased more than 3-fold from 44,661 *koku* in 1901 to 135,271 *koku* in 1904, then decreased slightly to 100,803 *koku* in 1906. Note 2. Production of soja beans in Formosa in 1904 was only 3.6% as much as production of soja beans in Japan in 1904.

The next section, titled "Red-beans" (p. 229-30) gives similar detailed statistics on acreage, production, and yield for azuki beans in Japan. *Sarashi-an* (the powdered red bean) is made in Osaka, Tokyo, Niigata, and Aomori. A second table gives annual imports of red [azuki] beans to Japan from 1903 to 1907. They are imported mainly from China, Korea, and British India.

In Chapter 9, titled "Agricultural products in commerce," section 2 is on imports to Japan. A table (p. 433-34) gives imports of the following grains and seeds (in

quantity / piculs and value / yen) from 1903 to 1907: Italian millet, soja beans, red beans [azuki] (small white), and sesame seeds. Another table (p. 438) titled "Miscellaneous" includes imports of "bean's oil cake" for the same period. An explanation titled "Soja-beans" (p. 439) states: "Not only as foodstuffs, but also as a manure a large quantity of beans are consumed each year, as that from China and Korea a considerable amount is imported. Besides beans, bean-cakes are imported from China in large quantity." Imports of sesame seeds, rice, wheat and rape-seed are also discussed on the same page. In this same chapter, section 3 is on Exports and imports in Formosa. Soy is mentioned on pages 434, 439, 442, 448, 453-54. "Beans, Soja: The demand for soja beans in Formosa is enormous and as the Formosan product was not sufficient to meet the demand, a large amount is imported from abroad. Soja beans produced in Manchuria, and Chin-kiang [Chinkiang, Zhenjiang] are imported from China and Hongkong." "Oil, Beans [soybean oil]: This is principally produced in Manchuria and is brought here through China and Hongkong. Originally it was used as an illumination, but the demand has greatly increased as it is used in making cut tobacco" [to keep it moist]. Ground-nut oil is used for the same purpose (p. 453-54).

Note 3. This is the earliest document seen (Oct. 2003) concerning miso in international trade—exported from Japan; export statistics are also given. Note 4. The preface, by Chuzi [Chuji] Shimooka, explains that this book was compiled for the International Agricultural Association meeting to be held in Italy in the autumn. The compiler did not have time to explain all the terms [and units] adequately. Address: Tokyo, Japan.

406. Bloch, A. 1908. Le soja. Sa culture, sa composition, son emploi en médecine et dans l'alimentation [The soybean. Its culture, its composition, its use in medicine and in food]. *Annales d'Hygiène et de Médecine Coloniales* 11:85-122. [29 ref. Fre]

• **Summary:** This article is identical to that published by Bloch in 1907 in *Bulletin des Sciences Pharmacologiques* (Paris). Address: Pharmacist major 2nd class of the colonial troops. Doctor of Pharmacy.

407. Huang Shirong. 1908. Weituiju suibi [Random notes from the "plain flavor" studio]. China. Passage on soy reprinted in C.N. Li 1958 #349, p. 248-49. [Chi]

• **Summary:** Wade-Giles reference: *Wei T'ui Chü Sui Pi*, by Huang Shih-Jung. Qing dynasty. A revised edition of this book, edited by Huang's son, appeared in 1916 during the Republican period. This is a summary by Mr. Huang (in China) of a publication by Li Yu-ying—who was in France at the time.

The section titled "Soybeans efficacy and use" (*gongyong*) states: Mr. Li Yu-Ying recommends that China

establish an association / society for soybeans and soybean technology for Chinese manufacturing. Li wrote two articles: One, to promote the establishment of a society for soybeans, and the second to promote manufacture of soybean products in China using modern technology. It is most important to invent new methods of production and manufacture, which would have a great effect on the industry. These two, which contained 5,000 words, were published in a Chinese newspaper [probably in China] the 2nd month on the 6th, 7th, 8th, 9th, 10th, 11th, and 12th days. Note: The name of the newspaper is not given. Mr. Huang summarizes the content as follows:

The nutrients of the soybean benefit health, economics, and commercial production; it is worthy of future development. Its wider propagation will improve the fertility of the soil because the roots contain nodules which fix nitrogen to enrich the soil. Soybeans are a rich source of dairy products (milk content) and oil, so they are very nutritious. They can be used to make good substitutes for meat. They are rich in phosphorus and potassium, so they are healthful and strengthen the brain. Since they are lacking in starch, they are good for diabetic diets. Because they are a rich source of dairy products (milk content) and oil, they would be a good material for industrial exploitation. And its very inexpensive; it sells for only about one-fifth as much as legumes from other countries. When you compare the milk / protein content with that of meat, milk, or eggs, or with other legumes and cereal grains, it is at least 2-10 times higher.

The soybean is rich in phosphorus, which is equal to the efficacy of Western medical phosphorus. Other products: Whole soybeans (*douren*). Soybean noodles (*doumian*; wheat pasta enriched with soy); it is a substitute for wheat gluten (*mianjin*). Soybean oil (*douyou*). Soybean cake-defatted (*doubing*). Okara or residue from making soymilk (*douzha*; [mostly fed to animals]). Soymilk (*doujiang*). Spray-dried soymilk (*doujiangfen*). Canned soymilk (*guandoujiang*). Soured soymilk (*suandoujiang*; by lactic acid fermentation). Soybean extract (*doujing*). Tofu (*doufu*). Pressed tofu-sliced (*doufugan yupian*). Fermented tofu (*faxiao doufu*). Whey—from making tofu (*yujiang*). Soy sauce (*jiangyou*). Sweet wheat-flour jiang (*tiandoujiang*). Soy sprouts (*douyacai*). Soybean coffee (*douren jiafei*). (Translated by H.T. Huang, PhD, April 2003).

408. Nichibe Shinbun-sha (Nichi-Bei Shinbunsha). 1908. *Zaibei Nihonjin nenkan* [Japanese-American yearbook. No. 4]. 234 Turk St., San Francisco, California. 491 p., many unnumbered. Reprinted in 25 Oct. 2001 in Tokyo by Nihon Toshō Senta. Series: Nikkei Imin Shiryōshū. Dai 1-kai [Collected Documents on Japanese Emigration. No. 1]. [Jap; eng]

• **Summary:** This book is read and numbered from “back to front” compared with typical English books; it is mostly

(99%) in Japanese. There is an English-language title page.

The book is composed of: 4 unnumbered pages of front matter, 3 unnumbered leaves of black and white photos (two show before and after the San Francisco earthquake and fire) on glossy paper, 20 pages of ads and basic information, numbered using Japanese numbers (NUJN), of which the last four pages are the table of contents, 210 numbered pages which are the body of the book, 84 pages of ads NUJN, 6 unnumbered pages of index and ads, 95 pages of directory NUJN, 37 pages of ads and back matter NUJN.

The import tax on shoyu is either 40% or 4% (unclear, p. 48). There is one tofu shop near (but not in) Oakland, California (p. 180, lower right). There are three tofu shops in San Jose, one in Watsonville, one in Salinas, and a brewery [that may make shoyu and sake] in San Jose (p. 182).

The Directory shows Japanese companies making soyfoods in California and Nevada (Reno). Address: San Francisco, California.

409. **Product Name:** Miso, and Shoyu [soy sauce].

Manufacturer's Name: Sanyo Shokai. Renamed Sanyo Shoyu Jozo Gaisha by 1909.

Manufacturer's Address: 920 Hight St., Melrose (near Alameda), California.

Date of Introduction: 1908. January.

New Product-Documentation: Ad (¼ page) in *Nichibe Shinbun-sha*. 1908. *Zaibei Nihonjin Nenkan* [Japanese-American Yearbook]. Page 14 (Japanese numbers) middle block of ads. A maker of miso and shoyu {soy sauce} (*Miso shoyu seizō-gyō*).

Nichibe Shinbun-sha. 1909. *Nichi-Bei Nenkan* [Japanese-American Yearbook]. Directory entry p. 31. The company name is now given as Sanyo Shoyu Jozo Gaisha. Address: 920 Hight St., Melrose, California. The company no longer makes miso-only shoyu. Note: Melrose is on the mainland, just northeast of Alameda (an island). As of Jan. 2008 Melrose was part of central east Oakland, a city adjacent to Alameda.

410. Tsuda Shoten. 1908. Tsuda Shoten (Ad). In: *Nichibe Shinbun-sha*. 1908. *Zaibei Nihonjin Nenkan* [Japanese-American Yearbook]. p. 49, middle section of ads. [Jap; eng]

• **Summary:** Ad (half page). This company sells various goods including miso and shoyu. Address: 1020 Third St., Sacramento, California. Phone: Oak 1561.

411. Visser, M.W. de. 1908. The fox and the badger in Japanese folklore. *Transactions of the Asiatic Society of Japan* 36(1):1-159. See p. 126. [100+* ref]

• **Summary:** “The words and deeds of the persons so possessed are very strange. They ask, for example, for azuki-meshi (rice and red pea-beans mixed), tōfu-juice

(bean curd) and tai fish laid in miso (sauce made of wheat, beans and salt), and after having eaten very greedily the possessing fox demands through the mouth of the patient a piece of ground belonging to the family of the latter (in behalf of the fox keeper), menacing the life of the patient if it is refused.”

Contains a long discussion about “Inari, the fox-shaped spirit of rice” (p. 129+), but does not mention Inari-zushi. Address: PhD, Japan.

412. Watt, George. 1908. Commercial products of India. Being an abridgment of “The Dictionary of the Economic Products of India.” London: John Murray. viii + 1189 p. See p. 564-65. [15 soy ref]

• **Summary:** Since Watt’s *Dictionary of the Economic Products of India* has been out of print for some time, the Government of India asked him to write an updated 1-volume abridgement. He said that soybeans in India were first introduced from Indonesia. “The Soy Bean; in Indian vernaculars, *bhat*, *ram*, *gari-kulay*, *hendedisom horec*, *pond disom*, *an-ing-kiyo*, *tzu-dza*, *bhatnas*, *seta*, *musa*, *khajuwa*, etc.

“A sub-erect or creeping annual native of China, Cochin-China, Japan and Java, comparatively recently introduced into India, though recorded as acclimatised and even seen as an escape from cultivation. It might, in fact, be described as extensively cultivated, though more as a garden than a field crop; is especially prevalent in Eastern Bengal, Assam (Barpeta Sub-division), the Khasia hills, Manipur, the Naga hills and Burma. It is not infrequent in the plains of India proper, especially in Busti, Gorakhpur, Patna and Purnea, etc. In Bombay and Madras, however, the Soy Bean has apparently hardly passed the experimental stage.

“Cultivation.—Two chief varieties occur, one called white, the other black. On the plains it is generally grown by itself as a *kharif* (autumn) crop. The seeds are sown from June to September, and harvested from November to December... In Assam it is sown with *áhu* (autumn rice) in April and May. The *áhu* crop is removed in July and August, and its stubble acts as a support for the bean plants, which are ready for harvest in December and January.”

“It is eaten in India in the localities where it is cultivated, chiefly in the form of *dál* or *satú*. In Japan it is largely used as a sauce, cheese (*natto*) or paste, and in China an edible oil is obtained from the seed. If cut when the pods are fully formed it makes a most nutritious fodder, and the seed-cake, as already stated, is an extremely rich cattle food.”

Also discusses: Alfalfa (p. 778). Almonds (*Prunus amygdalus*, p. 905). Broad bean or Windsor bean (*Vicia faba*, p. 1106-07. “There are two distinct forms, the long-podded and the broad-podded, the latter originating the name ‘Broad’ or ‘Windsor bean’”). Chufa (*Cyperus*

esculentus, p. 465; also called Rush-nut, earth-almond, or tiger-nut). Coffee (p. 363-68, with an excellent history). Cowpeas (p. 1107-08). Lucerne or alfalfa (*Medicago sativa*, p. 778-79). Mung bean, *udid*, and *urud / urd* (*Phaseolus mungo* or *P. radiatus*, p. 880-82). Sea-weeds (Kelp, p. 50). Address: Kew Gardens, England; Formerly, Prof. of Botany, Calcutta Univ., Superintendent Indian Museum (Industrial Section) and reporter on economic products to the Government of India.

413. *Christian Science Monitor*. 1909. Want favorite food duty free. Jan. 1. p. 3.

• **Summary:** “Washington—Greeks, Japanese and Chinese now want to take a hand in framing the new tariff bill. The San Francisco Chinese chamber of commerce,... has submitted to the ways and means committee a brief asking that the duties be reduced on Chinese soy [sauce], rice, fish, meat, type and fire crackers.

“The Japanese association of America, with headquarters in San Francisco [California], makes a plea that mizo [sic, miso], a food, shoyu, a sauce, and greenhouse stock be placed on the free list, and that the tariff be reduced on rice, vegetables, and earthenware.”

414. *USDA Bureau of Plant Industry, Inventory*. 1909. Seeds and plants imported during the period from January 1 to March 31, 1908. Nos. 21732 to 22510. No. 14. 64 p. Jan. 9. Also titled *USDA Bureau of Plant Industry, Bulletin No. 137*.

• **Summary:** Soy bean introductions: *Glycine hispida* (Moench) Maxim. [Note the first use of this terminology in this publication.]

21754-21757. “From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received January 3, 1908.

“21754. Yellow seeded.

“21755. *Ogemaw*. Extra early, brown seeded.

“21756. Black seeded.

“21757. Extra early, black seeded.”

21818. “From Paris, France. Purchased from Vilmorin-Andrieux & Co. Received January 17, 1908. *Ito San*. Called by the French, *Yellow Etampes*.

21825. “From Hokkaido, Japan. Presented by Mr. K. Hashimoto, Kuchchau Agricultural Society, Abutagun. Received January 14, 1908. *Amherst* (?). ‘Used in the manufacture of “soy,” “miso,” “tifu” [tofu], etc.’ (*Hashimoto*.)”

21830/21831. “From Hokkaido, Japan. Presented by the Yokohama Nursery Company, Yokohama, Japan. Received January 24, 1908.

“21830. *Butterball*. Japanese name *Akita*.

“21831. Japanese name *Rumoi*.”

21946. “From Buitenzorg, Java. Presented by Dr. M. Treub, director of the Department of Agriculture. Received February 11, 1908. ‘*Zwarte kadelee*’” [black soybeans].

21999. "Received through Mr. F.N. Meyer, agricultural explorer for this Department at the Plant Introduction Garden, Chico, Cal., February 12, 1908. From Boshan, Shantung, China. '(No. 799a, Sept. 18, 1907.) A rare variety of soy bean, sparsely grown near Boshan. Chinese name *Ta ha tau*. Used by the higher classes as a vegetable in soups.' (Meyer.)"

22311/22312. "From Shanghai, Kiangsu, China. Presented by Rev. J.M.W. Farnham, Chinese Tract Society. Received March 11, 1908.

"22311. Black. 'Similar to *Nuttall* but larger.' (Nielsen.)
"22312. Yellow."

22317-22322. "From Erfurt, Germany. Purchased from Haage & Schmidt [seedsmen]. Received March 16, 1908.

"22317. Probably *Butterball*.

"22318. '*Giant Yellow*.' Probably *Amherst*.

"22319. Brown.

"22320. *Samarow*. Like No. 17260.

"22321. Probably *Cloud*.

"22322. '*Early Black* from Podolia [Ukraine].' Probably *Buckshot*."

22333-22337. "Grown at Arlington Experimental Farm, Virginia, season of 1907. Received March 19, 1908.

"22333. *Baird*. 'This variety was mixed with *Brownie* when received from Pingyang [Pyongyang / P'yongyang], Korea. This mixture was given S.P.I. No. 6414. The two varieties were grown together under these numbers, 9417, 17256, and Agrost. No. 1542, respectively. The two varieties were separated in the 1907 seed from Arlington Farm, and *Baird* given the above new number, *Brownie* remaining as No. 17256.' (Nielsen.)

"22334. Flat black. 'Received from Mr. H.B. Derr, Agricultural Experiment Station, Champaign, Illinois. The original source of the seed is not known. It is quite similar in growth to *Nuttall*, but the seed is not the same shape, being flatter and larger.' (Nielsen.)

"22335. Yellow. 'Received from Mr. H.B. Derr, Agricultural Experiment Station, Champaign, Illinois, where it was grown as *Illinois Medium Yellow*. It is very similar to *Hollybrook*, and perhaps is the same, but appears different on account of having been grown farther north.' (Nielsen.)

"22336. *Guelph*. 'Received from Mr. H.B. Derr, Agricultural Experiment Station, Champaign, Illinois. Original seed was procured from the Agricultural Experiment Station, Wooster, Ohio.' (Nielsen.)

"22337. *Guelph*. 'Received from Mr. H.B. Derr, Agricultural Experiment Station, Champaign, Illinois. Original seed was procured from the Agricultural Experiment Station, Fayetteville, Arkansas' (Nielsen.)."

22379-22381. "From Canton, Kwangtung [province], China. Presented by Dr. J.M. Swan, Cooks Hospital. Received March 20, 1908.

"22379. Yellow.

"22380. Black.

"22381. Green mixed with yellow and a few brown."

22406/22407. "From Hongkong, China. Presented by Mr. S.T. Dunn, Botanical and Forestry Department. Received March 26, 1908. [Note: It is not clear whether or not they were ever cultivated in Hongkong. These two soybeans (#22406 and #22407, both black seeded) were later given the names "Hongkong" and "Nigra" respectively, and introduced to the USA in about 1910].

"22406. Yellow.

"22407. Black."

22411-22415. "From Naples, Italy. Purchased from Dammann & Co. Received March 25, 1908.

"22411. *Samarow*.

"22412. Black. 'Similar to *Cloud*.' (Nielsen.)

"22413. Brown.

"22414. Yellow. 'Similar to *Acme*.' (Nielsen.)

"22415. Giant yellow."

"*Glycine soja* Sieb. & Zucc." [Note the first mention of this species.] 22428. "Grown at Arlington Farm, Virginia, season of 1907, under C.V.P. No. 0474. Received March, 1908. 'Original seed presented by the Botanic Gardens, Tokyo, Japan. A near relative to the soy bean, but a spreading or decumbent plant, abundantly provided with large root nodules. Has considerable promise as a cover or green manure crop.' (Piper.)"

22498-22501. "From Hangchow, Chehkiang, China. Presented by Dr. D. Duncan Main, through Mr. J.M.W. Farnham, Shanghai, China. Received March 26, 1908.

"22498. Yellow. Similar to No. 18619.

"22499. Yellow.

"22500. Green. Similar to No. 17857.

"22501. Black."

22503-22507. "From Yokohama, Japan. Purchased from L. Boehmer & Co. Received March 31, 1908. The following seeds with Japanese names quoted; varietal descriptions by Mr. H.T. Nielsen:

"22503. '*Teppo Mame*.' Yellow, similar in appearance to *Amherst*, No. 17275.

"22504. '*Kaze Mame*.' Green.

"22505. '*Gogwatsu Mame*.' Yellow, similar to *Haberlandt*, No. 17271.

"22506. '*Maru Mame*.' Yellow.

"22507. '*Vieuri Lei*.' Green, similar to *Yosho*, No. 17262." Address: Washington, DC.

415. Holland, Edward B. 1909. Soy beans and soy bean oil. *Massachusetts Agric. Exp. Station, Annual Report* 21(Part II):111-19. Jan. 1909. [30 ref]

• **Summary:** Contents: Economic uses. The chemistry of soy bean meal. Table showing composition of Medium Green soy beans. Soy bean oil: Physical tests (tables show specific gravity, specific viscosity, refractive index, mean dispersion), chemical tests (tables show acid number, ether

number, Hehner number, insoluble acids, neutralization number, mean molecular weight, iodine number).

The oil was removed from the soy beans by the V.D. Anderson Company of Cleveland, Ohio, using torsional pressure. "An analysis of the resulting cake indicates that from 55 to 60 per cent. of the oil was removed. The oil was passed through a filter press, but was not refined otherwise. The oil was clear and of a dark amber color, with an odor similar to that of other vegetable oils." The author found the oil to have following physical constants: Specific gravity at 15°C 0.9206. Specific viscosity 8.43. Refractive index at 20°C 1.4749. Mean dispersion at 20°C 0.00938.

In chemical tests, the author found the following constants: Saponification (*Koettstorfer*) number 191.95. Acid number 1.27. Ether number 190.68. Iodine number 130.77. "According to the classification of Lewkowitsch, based on iodine number, soy bean oil is a semi-drying oil of the cotton-seed oil group."

Note 1. E.B. Holland is no relation to J.H. Holland of London, who wrote about soy in 1910.

Note 2. This is the earliest English-language document seen (Sept. 2006) with the term "soy bean oil" in the title.

Note 3. This is the 2nd earliest document seen (Sept. 2006) that uses the term "Refractive index" in connection with the soja bean, and the first that gives a value (1.4749 at 20°C).

Note 4. Values for the specific gravity and saponification number of soy bean oil, attributed to Shukoff in "correspondence with Dr. Lindsey," are the same as those published by Shukoff in *Chemische Revue ueber die Fett- und Harz-Industrie* (Hamburg, Germany) (Dec. 1901, p. 250-51). Address: M.Sc., Assoc. Chemist, 28 North Prospect St., Amherst, Massachusetts.

416. LeMaire, M.E. 1909. Nouvelles du Japon savant et industriel [New from Japan in science and industry]. *Bulletin de la Societe Franco-Japonaise de Paris* No. 15. p. 43-48. June. See p. 45-46.

• **Summary:** In the section titled Scientific publications from the University of Tokyo is a summary (p. 45-46) of an article titled "Notes on Japanese vegetable oils," by Tokuhei Kametaka, Article 4, Vol. 25 (Sept. 1908) of the *Journal of the College of Science, Imperial University of Tokyo*. On of the articles discussed is: "3° L'huile de soja, *Glycine hispida Maxim*, soja bean oil des Anglais, daizu-abura. On sait que le haricot de soja sert à préparer le miso, sauce qui entre dans la composition du *misoshiru* [miso soup], soupe au miso, plat de résistance des Japonais. Cette huile, d'un jaune clair, qui a trouvé des applications industrielles locales nombreuses, commence à être utilisée par les Européens. En 1907, le Japon en a exporté 700 tonnes, valant 20,4 livres sterling la tonne."

Note: This society was founded in 1909 by the government of Japan. Address: Ingenieur des arts et

manufactures.

417. Ruhrah, John. 1909. The soy bean in infant feeding; Preliminary report. *Archives of Pediatrics* 26:496-501. July. • **Summary:** This pioneering paper was read before the Twenty-first Annual Meeting of the American Pediatric Society, Lenox, Massachusetts, May 28, 1909. "The soy bean (*glycine hispida*), sometimes incorrectly called the soja bean, is an annual leguminous plant which originally grew in a wild state from Cochin China to the south of Japan and Java."

There follows a brief but accurate history of the soy bean. "In 1875 Professor Haberlandt began a series of investigations with this plant in Austro-Hungary, and in his work published in 1878 he urges the importance of the soy bean as a food both for man and animals. After his death, which occurred in 1878, very little notice was taken of the soy bean in Hungary and the prophecy that he made for its future failed."

"As early as 1829 Thomas Nuttall wrote an article in the *New England Farmer* concerning the bean as a valuable crop for this country. The Perry expedition to Japan also brought back soy beans, but until the last fifteen or twenty years the plant was known only as a curiosity."

"The plant is grown in America, but is used chiefly for the purpose of a forage crop and comparatively little reference has been made to its use as food for man." The plants "bear a remarkable number of beans and the flowers are self-pollinated, making the yield independent of insects. The bean may be easily grown in Maryland. I am indebted to three friends for experimenting with this plant in their gardens and obtaining good crops... At the present time there are seven varieties handled by seedsmen, and some twenty-two distinct varieties are known." The varieties Mammoth Yellow, Hollybrook, and Ito San have been used in infant feeding experiments. "The other varieties are the Guelph (green), the Samarow (green), the Ogemaw (brown), and the Buckshot (black). All of these latter may be grown in the north."

"I am indebted to Mr. Frank N. Meyer, agricultural explorer for the Department [U.S. Department of Agriculture], for information concerning the use of the beans in the East... The light-colored beans are eaten in soups and the pods are sometimes picked green, boiled, and served cold with a sprinkling of soy sauce. The green varieties are often pickled in brine and eaten moist or dried with meals as promoters of appetite." Also discusses soy sprouts, oil, natto, soy bean milk (which "has a composition nearly the same as that of cow's milk" as shown in a table), tofu, miso, yuba, shoyu, and roasted soybeans used as a substitute for coffee.

"The fact that the soy beans contain little or no starch suggested to Dujardin-Beaumont that they be used as a food for diabetics. The soy bean flour has been placed on the

American market, but was withdrawn owing to the fact that according to the manufacturers it contained 8 per cent. carbohydrate. It contains much less carbohydrate, however, than any of the other diabetic foods.”

“As regards the use of the beans in infant feeding it seemed to me that soy bean gruel or milk, either alone or with cow’s milk, might be of value in feeding several classes of cases, viz., of marasmus and malnutrition, as a substitute for milk in diarrhea, and in intestinal and stomach disorders, and in diabetes mellitus.”

Note 1. This is the earliest document seen (July 2008) that suggests the use of a soybean preparation as a milk substitute for infants.”

Note 2. This is the earliest document seen (Aug. 2003) concerning the actual feeding of soymilk to infants or children, or concerning a soy-based infant formula. The author was the world’s first pediatrician to use soybeans in infant feeding, and did the first U.S. studies with soyfoods and human nutrition.

Note 3. This is the earliest English-language document seen (Oct. 2003) that uses the term “substitute for milk” to refer to soymilk. Note 4. This is the earliest English-language document seen (Nov. 2002) that uses the word “malnutrition.”

The writer had hoped to conduct experiments and make a more complete clinical report but several misfortunes attended his efforts to secure the beans. “My first crop was eaten by rats, my second moulded in the pods owing to some unusually damp weather, and insects ate about two-thirds of my last crop. Fortunately, the beans may now be obtained from Messrs. T.W. Wood & Son, Richmond, Virginia.

“So far the gruel has been prepared by soaking the beans over night, stirring to remove the envelope surrounding the bean. Three times the amount of water is added to the beans and they are boiled until a smooth gruel results. This is strained if necessary [to make real soymilk]. This has the odor and taste of malt, but with the addition of a little salt is well taken, especially after the first bottle or two. The gruel is retained unusually well and seems to be easily digested. The stools are not more frequent than with other foods. The stools are light brown in color like those from malted milk. This soy bean gruel has nearly the same food value as milk and for certain children may need further dilution. About the same size feedings should be used as if milk were being given. Five percent sugar may be added to increase the fuel value.

“I have not used the beans in a sufficiently large number of cases nor over sufficient periods of time to justify any further statements at this time, but I do feel that properly used they will be a most valuable addition to the dietary of the sick infant. Grinding them to a bean meal would simplify matters very much, and, if success attends their use, a soy bean meal could easily be prepared.

“I hope to be able to make a second report at the next meeting and have called your attention to the bean in hope that other members may try them and report at the same time.”

Note 5. Pediatrician Herman F. Meyer (1960, p. x) published a long poem by Dr. John Ruhräh titled “A Simple Saga of Infant Feeding,” which described the history and present status of infant feeding. Meyer described Ruhräh as a “philosopher, teacher, poet, pediatricist [pediatrician] and able historian.”

Note 6. This is the earliest English-language document seen (Oct. 2001) that uses the term “soy bean flour.”

Note 7. This is the earliest document seen (Aug. 2008) that uses the term “self-pollinated” (or self-pollinating, etc., with or without the hyphen) in connection with soybeans. Address: M.D., Baltimore, Maryland.

418. Gordon, E.L.S. 1909. Report for the year 1908 on the trade and navigation of the port of Dairen (Dalny).

Diplomatic and Consular Reports, Annual Series (Foreign Office, Great Britain). No. 4372. 18 p. For the year 1908.

• **Summary:** The 1st map shows the “Kwantung Leased Territory” (Dairen consular district), a long peninsula including Dairen and Port Arthur, which are connected by the South Manchuria Railway. A 2nd map, “Sketch map of part of Manchuria,” shows the four three railways, plus major cities and towns, crops, and rivers: (1) South Manchuria Railway; (2) Chinese Eastern Railway; and (3) Chinese Imperial Railway.

Currency (p. 3): In ports other than Dairen, dealings with the Chinese are based on taels and copper cash, the amount of cash taken for each tael differing at each port. But “at Dairen, there are no taels or cash. The Chinese Imperial Maritime Customs of course make up their statistics in Haikwan taels, but the business here is all done in Yokohama Specie Bank Newchwang notes known as silver yen...” A table shows the value of Haikwan tael, gold yen, and silver yen in shillings and pence for 1907 and 1908.

Pages 3-4 state that “soya beans which come down from the north are made up in bags, each of which weighs from 185 to 200 lbs. avoirdupois. Bean cakes are reckoned by pieces, weighing nearly 60 lbs. apiece.” A table defines the following weights and measures: Chinese: *catty, picul, li, mow*. Japanese: *kin, ken (6 shaku), ri, tsubo, koku* (liquid and dry), 1 S.M.R. ton (2,000 lb).

The section titled “Possible industries” contains subsection III on “Bean cake and bean oil” (p. 6). A table gives the chemical composition of 3 samples of bean cake. “By the present method, using hand presses, the amount of oil extracted from the beans is about 8 per cent. At one mill in Dairen, which is fitted with hydraulic presses, nearly 10 per cent. can be obtained. The quantity of oil in the soya bean is from 16 to 17 per cent., and by improved processes

it should be possible to extract practically the whole of this, and still make from the fragments as good a quality of bean cake for fertilising purposes as is made now.”

The section titled “The South Manchuria Railway” states (p. 6-7): The work of broadening the main line of the South Manchuria Railway and its Fushun and Newchwang branches from the 3 feet 6 inches gauge to the standard gauge of 4 feet 8½ inches was completed by the end of April, 1908. A new and improved system of trains was introduced, and a revision of fares and traffic rates, in most cases involving a reduction, has been effected. As a result the complaints that were so rife during 1907 are no longer heard, and both traders and passengers seem generally satisfied with the treatment accorded to them. In October express trains composed of Pullman dining and sleeping cars commenced to run between Dairen and Changchun, the northern terminus, twice a week, covering the distance of 437½ miles in 21 hours. This time is to be shortened during 1909 to 18 hours, and no doubt further accelerations will follow and the express run oftener.

“With the completion of the reconstruction of the main line, the work of doubling the tracks between Dairen and Suchiatun, a distance of 238 miles, was commenced, and is to be finished in the autumn of 1909.”

The section titled “Exports” contains long subsections on [Soya] “Beans” and Bean cake” (p. 10-13). In the first subsection we read: “Towards the end of 1908 was commenced a trade in beans with the United Kingdom and Europe, which promises to have a great effect on this part of China, and, in view of the great possibilities of this trade, the following, taken from a report which appeared in the local newspapers some little time ago, may prove of interest.”

There follows the full-text of a 3-page article on production and exports of soya beans in 1907 and 1908.

The subsection on “Bean cake” states: “In 1907 there were at Dairen two large Japanese mills, in one of which steam is used as the motive power while in the other electricity has been adopted, and a few Chinese mills where the old native method has been retained. During 1908 some 17 Chinese factories have been added, and more are in contemplation. This increase is likely to be sustained, though possibly not in the same proportion. A better price can be obtained for bean cakes made here than for those brought down from the interior, as the latter are apt to get damaged in the course of transportation, and the demand for bean cake as manure in other countries is steadily increasing.”

Annex 1 (p. 14) gives the value of imports to Dairen during 1907 and 1908. In 1908 the value of soy [sauce] was £27,431 and of miso was £5,422.

Annex 2 (p. 16) gives the value (in British pounds sterling) of exports from Dairen during 1907 and 1908. [Soy] Beans: £658,135 / 1,000,948. Bean cake: £488,997 /

865,480. Bean oil:—/ £27,284. Address: Mr., Acting Vice-Consul [for Great Britain to Japan].

419. Imperial Hygienic Laboratories. 1909. Inshoku-butsumarabini shikô-hin bunseki-hyô [Analytical tables of food and luxury items]. *Eisei Shikenjo Hokoku (Bulletin of the Imperial Hygienic Sciences)* No. 10. p. 1-78. Miso, see p. 27-28. Shoyu, see p. 28-28. Soymilk, see p. 39-45. [Jap] • **Summary:** Gives a detailed analysis of the nutritional composition of these basic foods, including analyses of various well-known brands, which are clearly specified. The number of products analyzed are: Miso 30 products, shoyu 122, soy nugget Chiang (Shoyu shisho) 4, shoyu moromi 2, shoyu presscake (kasu) 1, Thick (noko) shoyu 11, shoyu second generation products and imitation products 16, soymilk (containing only soybeans) 6, other soymilk products 89. Address: Eisei Shikensho (National Institute of Hygienic Science), Tamagawayoga-machi, Setagaya-ku, Tokyo, Japan (in 1962).

420. Carson, John M. 1909. Soya bean and products. *Special Consular Report (U.S. Bureau of Manufactures, Department of Commerce and Labor)* No. 41. Part 5. 35 p. Erroneously numbered Special Consular Reports, Vol. XL. • **Summary:** Contents: Introduction. I. Countries of production. China: Newchang (Varieties of beans and amount produced {in centals [hundredweights; 1 cental = 112 pounds]}, methods of cultivating and harvesting, prices and exports, shipments to Europe—use by natives), Dalny (Manufacture of bean cake and oil, preparing the cake, expressing the oil and wages paid, freight charges to Dalny, exports, stock on hand, and prices), Chefoo (Beans imported for cake manufacture, quantity and value of output, bean vermicelli made by a peculiar process [from the small green bean lü tou {mung bean}], preparation of beans, drying of product and prices [for vermicelli]), Shanghai (Extent of export trade in beans), Shantung (manufacture of bean oil and cake, harvesting and pressing, shipping and prices), Swatow, Tientsin (Exports of raw beans, shipments of bean cake, extent of trade at Tientsin). Tables (p. 5) show prices and exports of soya beans, bean cake and bean oil at Newchang for the years 1905-1908. Japan: Cost of production and prices (of soya beans, quite detailed), imports of beans and cakes, use of the bean as food (shoyu, miso, tofu, koya-tofu, natto, flour), Kobe (Beans as human food {eaten boiled with a little soy [sauce], “made into bean curd, and a kind of sauce made of wheat, beans, and salt”}—small exports {“The total exports of beans, pease, and pulse [incl. soy] in 1908 were valued at \$25,971, of which about \$24,000 worth went to Hawaii, the United States, and Canada for use by the Japanese resident in those countries as an article of food”}), manufacture of cake), Nagasaki (Production of beans, imports of beans—market prices). Shipments from Vladivostok * [Russia, of

soybeans probably grown in Manchuria] (Fluctuations in prices, shipments during present season, immense shipments planned next season (by Mitsui)).

“It is the intention of Mitsui Bussan Kaisha, the largest exporter from this port, to ship about 200,000 tons of beans via Vladivostok during 1909 and about double that quantity via Dalny. Many large contracts have been made for next season, and from present indications a strong effort will be made against the control of Mitsui Bussan Kaisha as the Chinese are making arrangements to deal direct with the European market without the aid of the Japanese” (p. 18).

Tables show: The quantities and value of soya beans, soya-bean cake, and bean oil imported into Japan during the year 1908 (p. 15). The soya bean harvests (in bushels) reported in various Japanese districts (p. 16).

II. Markets. Denmark: Experimental imports made, views of an importer. France: High duties prevent importation of soya beans, soya-bean flour bread used by diabetics, unknown in Calais district. Germany: Danger of feeding cattle on soya-bean products, oil value—prices at Hamburg, comparative food value of the bean. Italy: Beans imported and cultivated in limited quantities, prices of soya products—American cotton-seed oil, not imported into Catania, home products supply Piedmont district. Netherlands: A great future for the soya-bean trade predicted, prices of the bean and bean cake, soya cake as cattle feed, manufacture of soya-bean products begun, English soya-bean cake defective. Norway: Imports of soya-bean meal and cotton-seed meal. Russia: Beans and products unsatisfactory as feeding stuffs. Spain: Soya bean unknown in Valencia district [They are neither cultivated nor imported in this district]. Straits Settlements [Singapore and Malaya]. Sweden: Soya-bean products introduced through England. Comparative value of cattle feed [work by Nils Hansson of Sweden], comparative prices of feed stuffs. Turkey. England: Liverpool (Conversion of the soya bean into cake and meal), Plymouth (Soya cake and meal extensively consumed), Southampton (The bean appreciated as a fattener and as a dairy ration, the soya bean as human food [for use in diabetic diets]). Ireland: Chinese bean products are favorably received, soya bean introduced in Belfast, small imports at Cork. Scotland: Statistics as to use in Dunfermline not available, test of feeding value of soya cake [by Prof. Douglas A. Gilchrist], Edinburgh mills making experiments (based on 1909 report 1909 of U.S. Consul Rufus Fleming from Edinburgh).

III. Competitive American exports. Tables (p. 35) show exports for 1907, 1908, and 1909 of cotton-seed meal, cotton-seed oil, and cottolene, lardine [not defined: presumably shortening made from cottonseed oil], etc. to major countries, especially in Europe.

The Introduction notes: “In compliance with requests from manufacturers of cotton-seed products in the United States, who desired that an investigation be made of the

production and use of the soya bean and its manufacturers in the Far East and of the extent to which they compete with American cotton-seed products in the European markets, the reports following have been submitted by consular officers in the various countries concerned...

“The reports of the consular officers have been placed in two groups, the first having to do with the countries that produce the soya bean and the second with the countries that are sought as markets. Statistics as to the imports of soya-bean products in many European countries were not available at the time the reports were submitted, but inasmuch as the prices quoted were generally lower than for other seed products, emphasis has been laid on the relative merits of the two classes of goods as shown by experiments and analyses in these countries. These manufacturers will have to work in meeting this new competition.”

Note 1. This is the earliest document seen (Dec. 2007) concerning soybean products (oil or meal) in Turkey, Denmark, Ireland, the Middle East, or Sweden (one of two documents); soybeans as such have not yet been reported in any of these countries. This document contains the earliest date seen for soybean products in the Middle East or Turkey (1909).

Note 2. This is the earliest English-language document seen (Oct. 2001) that uses the term “soya-bean flour.” Address: Chief of Dep.

421. Carson, John M. 1909. Soya bean and products: Japan (Document part). *Special Consular Report (U.S. Bureau of Manufactures, Department of Commerce and Labor)* No. 41. Part 5. p. 13-16. Erroneously numbered Special Consular Reports, Vol. XL.

• **Summary:** Vice-Consul-General E.G. Babbitt of Yokohama writes: “The soya bean, or soja bean, as it is known here (Common Japanese name ‘daidzu’ [daizu]), is cultivated throughout the Empire of Japan. The total area of cultivation is in the neighborhood of 1,200,000 acres, or about 3.8 per cent of the total area devoted to the cultivation of rice and other cereals and grains. The soya bean is often cultivated, not in fields by itself, but in rows along the edges of rice or wheat fields. These edges are, as a rule, very soft, for they have been previously plowed, and little labor is required in planting... In harvesting the plants are uprooted, and, after being dried in the sun for several days, flails are used to separate the beans from the pods. The flails are of a very primitive type, with bamboo handle and of light weight. Female and child labor is invariably employed in flailing.

“The kinds of fertilizers used differ by districts. In the prefecture of Miyagi, for example, straw ashes and superphosphate of lime are commonly employed, while in the prefecture of Akita wood ashes, superphosphate of lime, and horse dung are used.”

The average yield of soybeans in Japan over the past 10 years is 15.30 bushels per acre. For the year 1907 the highest yield is from Ishikawa prefecture, 21.62 bushels/acre, whereas the lowest yield is from Okinawa prefecture (Loochoo Islands, south of Kiushu), 8.48 bushels/acre. During 1908 huge amounts of soya beans (3.3 million piculs; 1 picul = 132.277 pounds weight) were imported to Japan from China, Kwantung, and Korea, with small amounts coming from Asiatic Russia. Large amounts of soya-bean cake (7.760 million piculs) were imported from China and Kwantung, with small amounts coming from Asiatic Russia and none from Korea. "The total imports of bean oil in 1908 amounted to only 49,993 pounds, valued at \$1,325."

"The soya bean is one of the most important articles of food in Japan. The beans are cooked in various ways, while in brewing soy (shoyu), in the manufacture of miso (pea or bean cheese), tofu (bean curd), koya-tofu (frozen bean curd), and natto (steamed beans) they are the chief ingredient. They are also manufactured into flour and make up the principal part of many Japanese sweetmeats. All these foodstuffs are daily used in Japanese homes.

"To a limited extent soya beans are used as horse or cattle food, being sometimes boiled and mixed with straw, barley, bran, etc."

The vice consul of Kobe states that in 1908 Japan produced 18,812,228 bushels of soya beans. Small amounts are exported "to Hawaii, the United States and Canada for use by the Japanese resident in those countries as an article of food." Three factories in the Kobe district make bean cake, largely from imported, lower-cost soya beans. "The beans are first crushed flat, then put into a big container and steamed, after which they are put into a steam press to extract the oil and to be made into cakes. The cakes come in circular pieces, a yard in diameter and an inch thick, each weighing about 50 pounds. The oil is used for lubricating machinery. The cake is used only as a fertilizer and is not fed to animals as it causes their hair to fall off."

Note 1. This is the earliest document seen stating that soya bean oil can be used as a lubricant.

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the term "koya-tofu" (or "koya-dofu" or "kôya-dôfu") to refer to dried-frozen tofu. Address: Chief of Dep.

422. Cornet, Paul. 1909. *Le régime alimentaire des malades: Considérations pratiques sur les aliments et les boissons diététiques et sur l'hygiène de l'alimentation* [The dietary regimen for the sick: Practical considerations on dietetic foods and drinks and on the hygiene of feeding]. Paris: G. Steinheil, Éditeur. 484 p. No index. 23 cm. [144* ref. Fre]

• **Summary:** In Part III, "Foods drawn from the vegetable kingdom," Chapter 20 titled "Starchy vegetables" discusses

various fruits, grains, and legumes. The section on "Soya" (p. 269-70) gives the name of the soybean in various countries (Japan, Annam, and China) and notes that the seeds can be used to make shoyu, miso, and tofu—which are widely appreciated.

"Dietetic uses: Without having recourse to these exotic preparations, the nutritional value of soybeans is not used enough in our country. Soy bread is only used in anti-diabetic diets*, whereas one could prepare a pap and a drink (*boisson*, [soymilk]) no less precious, as well as extracts [soy sauce] which could be substituted for meat extracts." Footnote: *Soya is well suited for diabetics, for the seed contains only 3% starch plus 16% oil and 27% protein.

In Part V, "The regimens," Chapter 30 titled "General solid regimens" has two parts: The first, the "Vegetarian regimen" (p. 341-55) has the following contents: Indications for the vegetarian regimen. Application of the vegetarian cure: Absolute [vegan foods plus water], mitigated (lacto-ovo vegetarian), total vegetarian diet (*régime total*) throughout the seasons (incl. dry legumes such as soybeans, peanuts, etc.), culinary preparations. Vegetal calendar (*Calendrier végétal*): soups, main dishes, and desserts for each month of the year. Address: Dr., Professeur at the municipal schools of the infirmaries of the Hospitals of Paris (aux Ecoles municipales d'Infirmières des Hôpitaux de Paris).

423. *Hawaii Agric. Exp. Station, Annual Report. 1909.* Soy beans. p. 83-85. For the year 1908.

• **Summary:** "The soy bean possesses many advantages as a green manuring and rotation crop. Early in the present year, three varieties of soy beans were obtained through the Bureau of Plant Industry. These were designated as Nos. 20797, 20798, and 21080... Seed of two other varieties were donated by the Hawaiian Yamajo Soy Company of Honolulu. One of these, a green seeded type, has been grown in the Kona district of Hawaii for some years; the other, a yellow seeded variety, was imported direct from Japan. The seed of both these varieties is used in the manufacture of the Japanese food product, 'Miso,' and other preparations."

All the varieties were sown on March 12. Variety No. 21080 yielded 600 lb of shelled beans per acre; the yellow seeded variety imported from Japan yielded 800 lb, and the Kona seed yielded 1,060 lb. "The average price in the Honolulu market is \$3 per hundred pounds. About 500 tons of the beans are imported from Japan annually, and the demand is said to be on the increase. It would appear that this could be made a profitable crop for the small farmer."

Photos show: A man standing in a plat of soy beans in Hawaii, with palm, banana, and other tropical trees in the background. Three sets of dwarf soy bean plants with roots; their soy beans are used in making miso and other Japanese food products.

Note: In 1898 Hawaii was annexed as a U.S. Territory.

424. Hokubei Boeki K.K. 1909. North American Mercantile Co. (Ad). In: Nichibeï Shinbun-sha. 1909. *Nichi-Bei Nenkan* [*Japanese-American Yearbook*. No. 6]. p. A-1. [Jap]
 • **Summary:** Ad (full page). This company imports various goods including white rice, sake, shoyu, and miso. Illustrations show: (1) Two sacks of “Japan Rice—100 pounds.” (2) Two kegs of sake tied with traditional rice-straw ropes. Address: 318-320 Front St., San Francisco, California.

425. Iwakami Gomei-gaisha Shiten. 1909. Iwakami & Co. (Ad). In: Nichibeï Shinbun-sha. 1909. *Nichi-Bei Nenkan* [*Japanese-American Yearbook*. No. 6]. Unnumbered page. [Jap]
 • **Summary:** Ad (full page). The company name is written across the top of this ad in English. This Japanese company has its main office in Yokohama, Japan, with branch offices (*shiten*) in Osaka, Hawaii, and San Francisco, California. It exports shoyu, miso, and other goods from Japan. Address: Yokohama, Japan.

426. Lewkowitsch, Julius. 1909. Chemical technology and analysis of oils, fats, and waxes. 4th ed. Entirely rewritten and enlarged. 3 vols. London: Macmillan and Co., Ltd. See vol. II, p. 122-24. [7 ref]
 • **Summary:** The section titled “Soja bean oil (Soy-bean oil, Bean oil, Chinese bean oil)” (Vol. II, p. 122-24) gives details about the soja bean, which is indigenous to China, Manchuria, Korea, Japan, Formosa, and Indo-China. The soja bean industry is one of the most important in Manchuria and Japan. In Manchuria, the expressed meal is made into bean cakes (*Téou-fou-tcha*) which are exported in large numbers. The Japanese make shoyu and miso from soja beans. “Efforts have been made to ship soja beans to Europe, but on account of the deterioration which they undergo on the long voyage, as also on account of the difficulty of disposing of the cakes, attempts in this direction have been abandoned.” Two tables give physical and chemical characteristics based on the investigations of: (1) Morawski and Stingl; (2) De Negri and Fabris; (3) Shukoff (from seed grown in an experimental station in South Russia); (4) Lane (who found 80.26% of liquid fatty acids).

Vol. II also discusses many other major and minor oils including: Linseed oil (p. 39-60), hemp seed oil (p. 76-77), sesamé oil (beniseed oil, gingelli oil, teal oil, p. 167-79), almond oil (p. 233-40), and arachis oil (peanut oil, earthnut oil, ground nut oil, p. 244).

Julius Lewkowitsch lived 1857-1913. Address: Ph.D., M.A., F.I.C., Consulting and analytical chemist, and chemical engineer, examiner in “soap manufacture” and in “fats and oils” to the City and Guilds of London Inst.

427. Maurel, Edouard César Emile. 1909. *Traité de l'alimentation et de la nutrition à l'état normal et pathologique*. Vol. 3 [Treatise on food and nutrition in normal and diseased conditions. Vol. 3]. Paris: O. Doin, Éditeur. xii + 685 p. Index (in vol. 4). 25 cm. [Fre]
 • **Summary:** The last entry in the section on “Legumes,” titled “Soy peas or beans” (*Pois ou fèves de Soja / Soya*), states: In order to be complete, to the preceding dried legumes I add the soybean, used here only as a therapeutic agent, but whose consumption in China and especially in Japan is considerable.

Its use in food is, moreover, completely justified by its great nutritive value. Here are some analyses of its nutritional composition: A table (p. 495) gives 6 analyses by three authors (each of whom cites other researchers) as follows: Balland (Gautier): maximum, minimum, mean. König (Siderski): black or yellow soybeans. König (Siderski): soy flour.

As you see, despite their great nutritive value, all the other legumes remain below that of the soybean. It contains more than 30% protein and 400 calories per 100 gm. It must be added that no other legume is as rich in minerals, for soy always contains at least 4%.

This legume, known in Japan by the name of *daidzou*, can be made into a cheese, tofu (*tôfou*), and above all the national sauce, shoyu (*shôyou*) and miso. These three substances result from fermentation, but under different conditions.

Japanese miso is a venerable food; it's the *tao-tzung* of the Chinese. It is made of crushed soybeans, boiled and mixed with rice or wheat koji, then submitted to fermentation. Miso consumption in Japan is 30 million kg.

Tofu is also used frequently but less than the preceding [miso], and much less than soy sauce which constitutes the universal seasoning. The consumption of this last would be, in fact, 5.5 liters per inhabitant.

Discussed in this section are: Dry beans (*haricots secs*; [*Phaseolus vulgaris*]), lentils, peas or round peas (*pois ronds* [*Pisum sativum*]), square peas (*pois carrés*; probably winged beans [*Psophocarpus tetragonolobus*], or flat pea / Lathyrus pea / chickly vetch [*Lathyrus sativus*], or *Pisum sativum medullare*), chickpeas (*pois chiches*), and dry [broad] beans (*fèves sèches*; [probably *Vicia faba*], broad beans). Address: M.D., principal physician for the Naval Reserves, Prof. at the Faculty of Medicine, Toulouse (Médecin principal de réserve de la Marine).

428. Murai Nishikawa Shokai. 1909. Murai & Nishikawa: Importers & com. merchts. [commercial merchants] (Ad). In: Nichibeï Shinbun-sha. 1909. *Nichi-Bei Nenkan* [*Japanese-American Yearbook*. No. 6]. Unnumbered page near center of book. [Jap]

• **Summary:** Ad (full page). The top ¼ of this ad is in English. This company imports various goods including white rice, sake, shoyu, and miso. Cable address: “Muranisu” San Francisco. Code used: A. B. C. 5th Ed. Western Union. Address: 2001 Pine St., San Francisco, California. Phone: West 5407.

429. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1909. Nichi-Bei nenkan [Japanese-American yearbook. No. 5]. 650 Ellis St., San Francisco, California. 605 p. Reprinted in 2001-02 in Tokyo by Nihon Tosho Senta. Series: Nikkei Imin Shiryôshû. Dai 5-kai [Collected Documents on Japanese Emigration. No. 5]. [Jap; eng]

• **Summary:** This book is read and numbered from “back to front” compared with typical English books; it is mostly (99%) in Japanese. The English-language title page reads: *The Japanese American Year Book*.

The book is divided into 17 parts, each numbered separately. Contents: (1) Front matter (5 p.) (2) Table of contents (3 p.). (3) Maps (2 p.): Map of the United States. Map of California (1 p. each, in Japanese). (4) Black and white photos on 6 unnumbered pages (single sided). (5) Advertisements (A-1 to A-32). (6) Front part (p. 1-168), including general information about America, Japanese in America, U.S. and agricultural census data, etc. (7) Ads from San Francisco printers (2 p.). Appendixes: (8) Appendix 1: Table of contents (2 p.) (9) Appendix 1. Japanese agricultural workers in the various states (p. 1-60). (10) Ads (p. B-1 to B-96). (11) Appendix 2 table of contents (2 p.). (12) Ads (3 p.). (13) Appendix 2. Japanese living in America, alphabetically by state, and within each state by city (p. 1-148). (14) Ads (2 p.). (15) Ads on numbered pages (C-1 to C-66). (16) California ads (p. C-1 to C-42). (17) Publication data / Copyright page (1 p.).

Basic information about how this book was compiled and the survey conducted is given on pages 60-66, 140-41, and on the title page of Appendix 1 of this year book. Pages 60-66 show various existing government registration forms that Japanese are required to fill out, such as birth, marriage, death, and divorce certificates, employment / occupation, agricultural details (employer, land use, nature of relationship with employer, etc.), and visa.

The tariff (import duty) on shoyu and miso from Japan is 40% for each (p. 32).

The value of the 1900 soybean crop in the United States is \$7,634,262 and the value in California is \$1,022,586 (p. 69). Note: This is the earliest document seen (March 2009) that gives soybean production or area statistics for either the USA or California—much earlier than any U.S. Dept. of Agriculture statistics. Unfortunately, the source of these statistics is not given. During the period 1900 and 1909 many Japanese were farming land in California, and there was a significant number of soyfoods manufacturers in California and, more broadly, west of the Rocky Mountains.

Therefore it we should not be surprised to learn that these farmers were growing soybeans in California, either for use as edamamé (green vegetable soybeans in the pods) or for sale as whole dry soybeans to soyfoods makers.

Value of selected imports from Japan to the USA in 1906: Miso—Imported to the mainland \$55,648. To Hawaii \$43,108. Total \$98,756. Shoyu [soy sauce]—Imported to the mainland \$241,345. To Hawaii \$211,265. Total \$452,610 (p. 119).

Retail prices of Japanese foods in San Francisco (on 1 Nov. 1908): Amazake [cup] for 15 cents (100 cents apparently = \$1.00). Kikkoman shoyu: 1 cho for 300 cents. Yamasa shoyu: 1 cho for 280 cents. Miso: 1 cho for 180 cents. Tai [sea bream] miso: 1 piece (*ko*) for 10 cents. Note: A *cho* is an undefined, vague unit of Japanese measurement. A photo shows the inside of a Japanese retail store (p. 120). Note: The meaning of “1 cho” is unclear.

In 1908 the Japanese population in the United States totaled 103,630, including 93,149 men (89.9%), 6,379 women, and 2,100 male children, and 2,010 female children. Six pages of tables give the Japanese populations of different U.S. states and cities.

The directory (p. 5) gives a listing of sake and shoyu sellers in San Francisco: Hokubei Boeki Kaisha, 318 Front St. Tel. [Phone] Kearny 451. McKendry Shosha, 149 California St. Tel. Kearny 2970. Iwagami Shokai, 441 Commercial St. Tel. 2447. Kagawa Soko Shiten, 41 Commercial St. Tel. 1263. Ichida Shoten, 1968 Bush St. Tel. West 1688. Murai Ishikawa Shokai, 2001 Pine St. Tel. West 5407. Tanaka Kyodai Shokai, 1609 Gough St. Tel. West 6615.

The Directory shows Japanese companies making soyfoods in California, Colorado, Nevada, New York, Oregon, Utah, and Washington. Address: San Francisco, California.

430. Saito, Kendo. 1909. Tôyô-san yûyô hakkôkin [Useful fermentation microorganisms from East Asia]. Tokyo: Hakubunkan. 200 p. See p. 14-17, 108-09, 122-25, 144-47, 162-64. [Jap]

• **Summary:** This book contains a little information about *Rhizopus oligosporus*, onchom, and miso or *Tao-Tjung* [a term, and perhaps a product, between *doujiang* and *tao-tjo*, Indonesian-style miso]. Address: Botanical Inst., Tokyo Univ., Japan.

431. Wilcox, E.V. 1909. Summary of investigations: Miscellaneous crops. *Hawaii Agric. Exp. Station, Annual Report*. p. 9-16. For the year 1908. See p. 16.

• **Summary:** “Several varieties of soy beans have been grown for use as fodder, green manuring, and human food, particularly in the Japanese product, Miso. The yields have been very encouraging. About 500 tons of soy beans are annually imported from Japan, and the demand is

increasing. The beans are sold in Honolulu for \$3 per 100 pounds. The market can easily be supplied by home production.

“Peanuts have yielded gratifying results in various localities. On the trial grounds of the station a number of varieties have been grown, including Spanish, Bunch Jumbo, Running Jumbo, and Virginia Running.”

Note: In 1898 Hawaii was annexed as a U.S. Territory. Address: Special agent in charge.

432. Yukawa, Genyô. 1909. Ueber die absolut vegetarische Ernahrung japanischer Bonzen [The strict vegetarian (vegan) diet of Japanese Buddhist monks]. *Archiv fuer Verdauungs-Krankheiten* 15:471-524. [5 ref. Ger]

• **Summary:** The author studied a group of 12 strict vegetarian [vegan] Buddhist monks in Japan and found them to be in good health. He estimated that their daily diets, if evaluated for a 150-pound male, supplied 3,575 calories and 113 gm of protein. The older men ate somewhat less. The diet consisted chiefly of rice and barley, with soy products, vegetables, and rape seed oil.

A table (p. 478-79) summarizes the author's research on the protein content of vegetarian meals by previous Japanese researchers. These meals contained various soy products: Miso (*Soybohnennmus*), soy sauce (*Soy*), and tofu. On pages 489-91 are definitions of miso soup, miso, soy sauce (*Soy*) koji, grilled tofu (*Yakidofu*), cooked soybeans (without the hulls removed), azuki bean paste, and mochi, which are served at Nanshuji temple. A table (p. 497-98) gives the nutritional composition of these and other foods. Amounts served at each meal are shown on p. 501, 514, 522, including daikon pickled in miso. The terms “Makrobiotik” and “Makrobier” are used. Address: Aus der Privatklinik fuer Magen- und Darmkrankheiten von Dr. Yukawa in Osaka, Japan.

433. Japan, Bureau of Agriculture (Norinsho, Nomukyoku), Dep. of Agriculture and Commerce. 1910. Outlines of agriculture in Japan. Tokyo: Agricultural Bureau, Department of Agriculture and Commerce. 132 p. March. Illust. No index. 23 cm. [Eng]

• **Summary:** This book was compiled to acquaint foreigners with agriculture in Japan. Company name with diacritics is: Nôrinshô, Nômukyoku. A map near the front shows Japan and its empire (incl. Korea, Formosa, Kwantung, Karafuto, and the Kurile Islands, with an inset pie chart showing the value of Japan's agricultural products). Oval photos show Japan's six top agricultural officials. A full-page table shows the moneys, measures and weights of Japan with English equivalents. Contents of the first part of the book: Introduction: Geographical location, area, population, topographical position, climate. 1. General remarks. 2. Condition of farmers. 3. Condition of agricultural land.

The section titled “Upland fields” (p. 18) states: “Upland fields are those portions of land being located in high and dry places which by wanting means of irrigation could not be converted into paddy fields. The utilization of these fields is commonly made by the rotation system and crops are raised twice a year. The commonest instance is that barely, naked barely, and wheat are raised as the first crop in winter whereas soja beans, sweet potatoes and millets are raised during the summer as the second crop.” The profits from upland fields are generally smaller than from lowland / paddy fields. The average yield of soja beans over the past 10 years is given in Japanese units (p. 19).

In Japan only cows and horses are kept as work animals. In 1907 Japan had 1,008,922 cows and 2,204,031 horses. But they were used more for their manure than for plowing.

A table (p. 28) shows the value (in yen) of the principal commercial fertilizers in Japan from 1905 to 1907. “Soja bean cakes” (a key source of nitrogen) is by far the largest, averaging 12.9 million yen for these three years, followed by superphosphate of lime, mixed manure, rape-seed oil cakes, herring cakes, bone dust, and cotton-seed oil cakes. Note 1. This is the earliest English-language document seen (Nov. 2005) that uses the term “cotton-seed oil cakes” (plural or singular) to refer to cotton-seed cakes.

A table (p. 37) gives the cultivated area (in 1,000 *cho*) of major Japanese crops in 1887, 1892, 1897, 1902, and 1907. In 1907 rice had by far the largest area (2,906), followed by naked barley (694), barley (658), soja bean (471), wheat (444), mulberry tree (390), sweet potato (288), Indian millet (202), rape seed (143), small red bean ([azuki], 135). Soja bean area remained almost unchanged between 1887 (466) and 1907 (471).

A table (p. 39) gives average yield (in *koku/tan*) of the same major Japanese crops for the same years shown in the previous table. Yield of soja beans rose from 0.698 in 1887 to 0.777 in 1907. Since 1 *koku* = 4.963 bushels and 1 *tan* = 0.245 acres, the 1907 yield is 15.74 bushels/acre.

A table (p. 40) gives the production (in 10,000 *koku*) of the same major Japanese crops for the same years shown in the previous table. Production of soja beans rose from 325 in 1887 to 366 in 1907. Since 1 *koku* = 4.963 bushels, and 10,000 *koku* = 49,630 bushels, then 366 *koku* is 18.164 million bushels. The next table (p. 42) shows the value (in yen) of each of these agricultural products in 1905-07, and a table (p. 46) compares the cultivated area of each of these crops with rice; soja beans are 16.2% of rice.

In the section on “Food crops” (p. 47+) is a detailed discussion of each. Concerning “Soja bean” (p. 50-51) we read: “The use of this bean is extremely extensive since they are used for the purpose of supplying to the people low priced starchy food by being made into *miso* (pea cheese), soy, *tofu* (bean curd), and other food-stuffs required by the Japanese. The residue obtained from making these food-stuffs from the bean is used for the purpose of feeding cattle

or of pressing oil while as manure it is highly valued. Soja bean is easily cultivated requiring less amount of manure and labour. It is therefore cultivated all over the country and occupies the principal position among summer crops of upland fields. Within recent years the demand for it has considerably increased at home and also the export of various food-stuffs prepared out of bean has shown some increase so that no small amount of bean is imported either from China or Korea. The amount imported actually reaches 10,000,000 *yen*. Over and above these, the import of bean cakes is approximately figured at 20,000,000 *yen* so that the domestic output has somewhat been affected.”

Also discusses: Barley and naked barley. Indian millet, Barnyard millet and sorghum. Small red bean [azuki] (“A large amount of small red bean is used as a material for cakes [confections], Hokkaido being the principal producing district.” p. 51). Flax and hemp. Green manure crops, incl. *genge* (*Astragalus sinicus*, *umagoyashi* (*Medicago denticula*)), soja beans, etc.

Note 2. This is the earliest English-language document seen (March 2006) that uses the term “small red bean” to refer to the azuki bean.

Chapter 4, titled “Animal industry and poultry” (p. 69+) contains many statistics which may be of interest to vegetarians. Japanese traditionally ate fish rather than meat. “Even at present, the amount of meat consumed per capita a year does not exceed 1.7 pounds while that consumed in America is 150 pounds and in England 118 pounds per capita.” etc.

A table (p. 85) shows imports of principal agricultural products (quantity and value) each year from 1906 to 1908. Imports of soja beans increased from 286 to 352 (x 10,000 piculs) during this period, while imports of [soja] bean cake increased from 433 to 776. Both were imported mainly from China. However “the output of *soy* [sauce] and *miso* made of soja bean is exported to the amount of 1,200,000 *yen*, while bean cake forms the principal fertilizer in Japan” (p. 86). Address: Tokyo.

434. *New York Times*. 1910. Latest customs rulings. Japanese “miso” for use in preserving soups is dutiable at 20 per cent. April 22. p. 14.

• **Summary:** “The United States Circuit Court for the Territory of Hawaii has handed down a decision favorable to importing interests regarding the classification under the tariff of so-called ‘miso,’ a preparation used for the most part in making soup.

“The article in controversy is a Japanese preparation, and is used by both the Japanese and Americans. The question at issue was whether the commodity is subject to duty at 20 per cent., as claimed by S.B. Fujiyama, the importer making the test case, or at double that rate under the tariff provision for ‘preserved vegetables’ or as ‘a sauce.’ The Board of General Appraisers found in favor of

the Government’s contention at the higher rate. The importer then appealed to the Circuit Court, which finds for the protestant...”

“This Japanese product is made from [soy] beans and rice by process of cooking and fermentation, which have the effect of changing its taste and flavor, though not entirely destroying its form. The chief use of miso is in preserving soup with which it is used.”

435. Brenier, H. 1910. La question du soja [The soya question]. *Bulletin Economique de l’Indochine (Hanoi)* 13(83):105-28. March/April. Series 2. [22 ref. Fre]

• **Summary:** This is an in-depth look at the relevance of the soybean to France, both now and in the future. It is prompted by the rapid growth of soybean imports to Europe from Manchuria. The author has a good knowledge of the literature on soybeans and a familiarity with the crop in the field in French Indochina and China.

Contents: 1. Soybean cultivation: Species and varieties, major soybean producing countries (China, Japan, Korea, Indochina), other countries (Java and the Dutch East Indies, France, USA. The Imperial Institute of London is conducting trials in the Cape of Good Hope and Natal [South Africa], in British West Africa, and in Gambia), methods of cultivation and yield. 2. Commerce: Exports of soybeans and soybean cake (beancake, *tourteaux de soja*) from China and especially Manchuria (Newchwang, Dairen/Dalny, Antung, Ta tung kow, Suifenho [Suifenhe] / Sui-fen-ho), importing countries in 1908 in descending order of amount imported (Russian ports on the Pacific [Vladivostok, for re-export to Europe], Great Britain, France, Holland, Italy, Belgium, Germany), prices. 3. Soybean utilization: Chemical composition, use as a forage plant and for improving the soil, use in human foods (tofu, shoyu, Worcestershire sauce, tuong [Annamite soy sauce], miso, natto, soymilk), the soybean as an oilseed (yield of oil from various oilseeds), soybean cakes. Conclusions.

Page 109 discusses soybeans in Indochina, according to information received from M. Crevost, Curator of the Agricultural and Commercial Museum of Hanoi, and from the article by Bui-quang-Chiêu (Dec. 1905). The names of the soybean are different in the various parts of Indochina. In Cochin China (especially in the provinces of Chaudoc and Baria), in Annam (sporadically), and in Tonkin it is called *dau-nanh* or *dau-tuong* (*Tuong* is a sauce made with soybeans, described later under “Uses”). In Cambodia (*Cambodge*) it is called *sandek sieng*. The variety most widely cultivated in Indochina seems to be one with a yellowish-white color, more oblong than round, a little flattened (*soja platycarpa* of Harz [1880, 1885] (?)), different therefore from the fine (*belle*) varieties of Manchuria and Japan that are well rounded and pure yellow.

A table (p. 112) shows soy bean grain exports (in 1,000 metric tons) from different Manchurian ports for the years

1905-1908. The author notes that Indochina could be exporting soybeans to France. One factor that stimulated the large exports of soybeans from Manchuria in 1908 (besides an excellent harvest in 1907) was a program to suppress the cultivation of opium by expansion of soybean acreage (p. 113). The author uses the scientific *Phaseolus radiatus* to refer to the *petit haricot vert* (probably mung bean). He observed soybeans planted in mixed culture in Szechuan.

Page 116 notes that the rise of soybeans in Manchuria is due in part to the power of the Japanese commercial house Mitsui Bussan Kaisha and the large English oil mills, which joined to develop an industry that had not previously existed. At the end of 1906, which had a dominant commercial role in Southern Manchuria, sent one or two trial shipments of soybeans to England. Mitsui was followed mainly by the British trading houses (Samuel & Samuel, Jardine, Matheson), then by the Germans (Otto Reimers, Arnhold Karberg), and the Russians. Continued suppression of opium growing led to further expansion of soybean cultivation.

A table (p. 117) gives the price of soybeans (per picul of 300 catties = 180 kg), soybean cake (per 10 cakes of 53 catties each or 318 kg for the 10), and soybean oil (per picul of 100 catties = 60 kg) in New chwang [Newchwang] taels and in French francs in the average year from 1882-1891, and in the year 1897. Prices were up in 1897.

Page 124 states: "A factory was recently founded near Paris (at Saint Germain en Laye), with Chinese capital, for the preparation of a series of products derived from soya: milk, "caséo-sojaïne," cheese [tofu], sauce, and sweet soya preserves (*confiture (?) de soja*)." A footnote states: "I owe this curious piece of information to the amicability of the secretary of *Ecole française d'Extrême-Orient*, Mr. Ch. Maybon, who pointed it out in the January 1910 issue of the *Bulletin de l'Association amicale franco-chinoise*."

A table (p. 125) shows that the soybean gives the lowest yield of oil of all major oilseeds: copra (from coconut) yields 67-70% oil, sesame seeds 50-56%, poppy seed (*pavot*) 43-50%, castor oil plant 42-50%, rapeseed (*colza*) 42-45%, linseed 43%, peanuts 35-47%, cottonseed 21-26%, soybeans from Manchuria 16-18%.

Note: This is the earliest document seen (March 2000) that describes *caséo-sojaïne* as a product. Yet this may well be a mistake since its source of information is given as *Bulletin de l'Association Amicale Franco-Chinoise* (Jan. 1910)—which uses the term to refer to a business name. Address: Inspecteur-Conseil des Services Agricoles et Commerciaux de l'Indochine.

436. Langworthy, C.F. 1910. Apéndice. La soya como alimento para el hombre [Appendix: The soy bean as human food]. *Boletín de la Sociedad Agrícola Mexicana* 34(20):389-92. May 25. [1 ref. Spa]

• **Summary:** This is a Spanish-language translation of USDA Farmers' Bulletin No. 58 (1897, Revised 1899). The soybean is referred to throughout as "La haba soya." It describes and gives the nutritional composition of various Japanese soyfoods, including natto, miso (3 types; *miso blanco, colorado, Suiza* [Swiss]), tofu (*Tofu o queso de haba; Tofu fresco*), soymilk (*leche de la haba soya*), frozen tofu (*Tofu helado*), yuba, shoyu (*salsa de la haba soya*).

Note 1. This is the earliest Spanish-language document seen (Oct. 2008) that mentions yuba, which it calls *yuba*.

Under the name of coffee beans (*habas de café*), soybeans (*las habas soya*) are sometimes consumed in Switzerland as legumes (*como legumbres*); when they are dry and toasted, they are used as a substitute for coffee (*sustituir al café*). No mention is made of soybeans or soyfoods in Mexico.

Note 2. This is the earliest Spanish-language document seen (July 2000) that mentions tofu, which it calls *Tofu or queso de haba*.

Note 3. This is the earliest Spanish-language document seen (Feb. 2004) that mentions natto, which it calls *natto*.

Note 4. This is the earliest Spanish-language document seen (March 2009) that mentions miso, which it calls *miso*.

Note 5. This is the earliest Spanish-language document seen (Feb. 2004) that mentions soy as a substitute for coffee, which it calls *sustituir al café*.

Note 6. This is the earliest Spanish-language document seen (Oct. 2003) that uses the term *leche de la haba soya* to refer to soymilk.

Note 7. This is the earliest Spanish-language document seen (Feb. 2004) that mentions frozen tofu, which it calls "Tofu helado." Address: PhD, Office of Experiment Stations, USDA, USA.

437. Nippon Shubyo Kabushiki Kaisha (Japan Seed & Plant Co., Ltd.). 1910. Eigyô annai [Sales information]. Tokyo, Japan. Spring. 26 cm. [Jap]

• **Summary:** On the cover of this Japanese-language catalog we read (in characters from right to left): Number on seed store in the Orient (*tôyô*). Capitalization: 700,000 yen. 43rd year [of Meiji], spring. Sales information.

Page 3 is devoted entirely to beans (*mamé rui*). Shipping and tax free. Each small bag costs about 2 *sen*. The first section described 7 varieties of soybeans: (1) Large white soybeans (*Ooshiro daizu*). 5 *sen* per *gô* (100 *sen* = 1 *yen*; 1 *gô* = 180 cc = 0.763 cups {U.S.}). 32 *sen* per *shô* (1 *shô* = 1.8 liters = 1.903 quarts {U.S.}). Large, shiny beans. Good tasting. Good for making *nimame* (boiled, seasoned whole soybeans) or kinako (roasted soy flour) (2) Black soybeans (*Kuro daizu*). 5 *sen* per *gô*. 32 *sen* per *shô*. Black beans, large beans, extremely productive. (3) Large green soybeans (*Ao ômamé*). 5 *sen* per *gô*. 23 *sen* per *shô*. The seed coat is green. Good for making kinako and roasted soybeans (*irimamé*). (4) Black soybeans for rice fields (*Ta no*

kuromamé). 5 sen per *gô*. 32 sen per *shô*. Planted on the sides of the foot paths between rice fields (*azé*), these will produce a big crop. Good for making a type of boiled (?) soybeans and miso. (5) Branch and pod *Sangorô* soybeans (*Eda saya sangorô daizu*). 7 sen per *gô*. 60 sen per *shô*. Pull up the whole plant, boil the beans in the pods, and enjoy. Satisfies large demands. (6) “Little bells” soybeans (*Suzunari daizu*). 5 sen per *gô*. 40 sen per *shô*. Although the beans are small, they grow in many clusters, so you get a big crop and a big profit. (7) “Goose eating” soybeans (*Gan-kui mamé*). 5 sen per *gô*. 40 sen per *shô*. Black, large-seeded soybeans. Good for making *nimame* (boiled, seasoned whole soybeans).

Next come 5 varieties of azuki beans: (1) Summer azuki (*Natsu shôzu*). 5 sen per *gô*. 35 sen per *shô*. Early type, therefore if you grow them, they could be profitable. (2) White azuki (*Shiro shôzu*). 6 sen per *gô*. 40 sen per *shô*. Small and white, they are used to make high quality sweet azuki bean paste (*an*). (3) Dainagon *shôzu*. 5 sen per *gô*. 35 sen per *shô*. Large and high quality, they are the best to make sweet azuki bean paste (*an*). You can get a large crop on any type of land. (4) “Thin seed coat” azuki (*Usu kawa shôzu*). 5 sen per *gô*. 35 sen per *shô*. Although small seeded, they have thin seed coats and are good quality. (5) Mottled azuki (*Kasuri azuki*) 5 sen per *gô*. 40 sen per *shô*. White beans with white kasuri pattern. Tasty. Note: Kasuri is a famous type of Japanese dyed cloth with a splashed or mottled pattern, usually white on blue. (6) Green beans (*Yainari*. [Also written “yaenari”]). 7 sen per *gô*. 60 sen per *shô*. The very small green seeds can be used [ground] to make green kinako (*ao kinako*) or sweet azuki bean paste (*an*). Note: Yainari / yaenari is the most expensive variety of azuki. Address: Near Shinjuku Station, Tokyo, Japan.

438. Crowe, E.F. 1910. Japan. Report for the year 1909 on the trade of Japan. *Diplomatic and Consular Reports, Annual Series (Foreign Office, Great Britain)* No. 4511. 86 p. July.

• **Summary:** “Imports of manures.—The question of manures forms one of the most interesting items of 1909. A detailed table showing the quantities and values imported during the past three years will be found in Table 1 (B), page 61. Bean cake, of course, heads the list as regards value. The total amount imported in 1909 was 575,180 tons, worth £2,283,700, or £3 19s. 4d. a ton, as compared with 461,950 tons, worth £2,220,000 in 1908, or an average of £4 16s. 1d. a ton.

“Next comes the sulphate of ammonia, but in this item there was a big drop from 66,445 tons, valued at £898,000, to 45,835 tons, worth 604,700, while in the case of both phosphate rock and fish guano there was a decrease of about £100,000. Nitrate of soda made a small gain.

“It is a well-known fact that bean cake has for years occupied the position of the most popular imported fertiliser

in Japan. Now, however, that the United Kingdom, and the Continent of Europe and America to a lesser extent, have become purchasers of Manchurian beans the questions arises as to whether Japan will be able to continue to buy bean cake in huge quantities if the price rises appreciably. In studying this question two factors should not be lost sight of; one is that Japan is herself a large grower of soya beans, having, according to the latest available returns (1908) over 1,200,000 acres under cultivation, producing annually some 19,000,000 bushels of beans, while the other is that Japan imports very large quantities of soya beans from China and Korea.

“The greater part of these beans is used for the purposes of human food, *i.e.*, the making of “soy,” “miso,” and bean curd, but a portion, by no means small, is used also as a fertiliser.

“The Russo-Japanese war had such an effect in curtailing the supplies of beans and cake that to arrive at a just appreciation of the position it is necessary to go back a good many years.” A table (p. 18) shows imports of [soy] beans and bean cake (in piculs; 1 picul = 132.27 lb), the value of each, and the average price of silver each year from 1900 to 1909. Imports of [soy] beans increased from 1,575,022 piculs in 1900 to a record 3,623,377 piculs in 1909. Imports of bean cake increased from 2,280,687 piculs in 1900 to a record 9,663,036 piculs in 1909. The average price of silver fell by about 16% during this period. “Should the price in future be forced up very high in consequence of British and other demand, the presumption is that Japan would turn to sulphate of ammonia if the cost per unit of nitrogen therein were to be less than in the bean cake. On the other hand it must be remembered that the removal of duty on sulphate of ammonia in the United States of America means that that country will probably absorb large quantities of the British output and that Japan will have to pay a bigger price if she wants a share of this fertiliser.

“Thus the outlook for nitrate of soda becomes a good deal brighter and now that, owing to the subsidised Japanese line which runs to South America, it is possible to get cheap direct rates of freight, it looks as though the nitrate of soda will be a serious competitor to the other nitrogenous fertilisers, except in the matter of wet rice cultivation.”

Page 31 shows the shares of principal countries in the import and export trade of Japan during the years 1908 and 1909. Japan’s biggest imports came from the United Kingdom, followed by the USA, then China. The biggest customer of Japan’s exports was the United States, followed by China then France (p. 31). Japan’s biggest port (in terms of value of imports and exports) was Yokohama, followed by Kobe than Osaka (p. 37). Japan’s population at the end of 1909 was estimated at 49,769,704 (not including Formosa or Karafuto [Japanese Sagalien]). Japan’s most valuable exports in 1909 were tea, followed by rice then

fish. Exports of “Soy” (probably soy sauce) rose from £110,500 in 1907 to £111,100 in 1909.

Summarized in *J. of the Board of Agriculture (London)*, Aug. 1910, p. 410.

Note: This is the earliest document seen (Sept. 2001) that gives statistics concerning industrial utilization of soybeans—in this case soybean meal used as a fertilizer in Japan. Address: Attaché, British Embassy, Tokio [Tokyo].

439. Paton, G.P. 1910. Japan. Report for the year 1909 on the trade and navigation of the port of Dairen. *Diplomatic and Consular Reports, Annual Series (Foreign Office, Great Britain)* No. 4504. 22 p. July.

• **Summary:** On pages 3-4 key weights and measures are defined: Chinese: catty = 1.333 lb, picul = 133.33 lb, *li* = 1/3 miles, *mow* = 736½ square yards; Japanese: 1 *koku* [liquid] = 39.703 gallons, 1 *koku* [dry] = 4.963 bushels. The Japanese, Chinese, and total populations are given for Dairen, Shaokangtzu [Shao-kuan, in Kwantung Leased Territory], Port Arthur, Chinchou [Chin-chou] and Pitsewo [Pikou, in Kwantung Leased Territory]. One map (p. 5) shows part of Manchuria, with the main towns, railroads, and where major commodities are produced. Next comes a large fold-out map of the Kwantung Leased Territory [and peninsula] (Dairen Consular District).

Dairen may now be considered the principal outlet for the produce of South Manchuria. The Central Laboratory is doing good work in the manufacture of bean cake and bean oil, and soap from bean oil. “The manufacture of soap from bean oil has been commenced on a very small scale by three different firms in Dairen, but the excessive price of bean oil since the end of 1909 is proving a great handicap.” The South Manchuria Railway Company takes a major share in the development of South Manchuria as well as the Kwantung Peninsula. Its work during the past year is discussed. An ice-breaker has been added to facilitate the berthing of ships during the winter months.

“Export trade.—Thanks to the very large increase in the export of beans, the export trade is in a very thriving condition... Beans and bean products.—The most striking feature in the exports is the enormous increase in the shipments of beans and bean products, viz., oil and cake” which accounted for nearly 70% of all exports from Dairen. Export of [soy] beans rose from 206,653 tons in 1908 to 462,423 tons in 1909. In 1909, some 56% of these beans went to Europe, 29% to Japan, 12% to north China, and 21.4% to south China. “Of the amount sent to Japan, probably some was re-shipped to Europe; while of the quantity sent to Europe about 90 per cent. went to the United Kingdom.” There follows a long discussion of economic factors causing the prices of soybean and bean cake to be currently high in Manchuria. If, as seems probable, the French, German, and U.S. governments remove the import duty on [soy] beans, then a great impetus

will be given to the export... The farmer in Japan has learned the value of bean cake as a fertiliser for the paddy field and the mulberry plantation, and immense quantities are exported to that country. In 1909, indeed, Japan took over 99 per cent. of the bean cake exported from Dairen... A small quantity is exported to South China where it is used both as a fertiliser and as a food for pigs. A shipment was also made last year to Formosa [today’s Taiwan] for trial in the sugar plantations and, as the result was successful, the experiment will probably be repeated this year.”

“Bean oil.—In Manchuria the primary object of the bean mills is the manufacture of bean cake, and the oil is only of secondary importance. The mills are worked on the press system and only extract 7 or 8 per cent. of the 17 or 18 per cent. of the oil contained in the bean... The largest purchaser of bean oil is South China, which takes about one-half of the output. Of the remainder, the bulk goes to Japan, where it is mostly transhipped [transshipped] to Europe and America.” The value of “Soy” (soy sauce) imports to Dairen increased from £22,367 in 1907, to £27,431 in 1908, falling to £21,551 (3,307 tons) in 1909. The value of miso imports to Dairen increased from £2,128 in 1907, to £5,422 in 1908, falling to £2,815 (656 tons) in 1909. Tables (p. 19-21) show returns of: (1) Import trade of Dairen during 1907-09 (2) Export trade of Dairen during 1907-09 (3) Shipping entered at the Port of Dairen during 1908-09. Note: In some parts of this report, the £ sign is written as “l.”

Summarized in *J. of the Board of Agriculture (London)*, Sept. 1910, p. 502. Address: Acting British Vice-Consul, Dairen.

440. Société Française des Distilleries de l’Indo-Chine. 1910. Nouveau procédé de traitement des légumineuses et particulièrement du Soja (*Glycine hispida*) pour la fabrication des sauces, condiments ou produits alimentaires [New process for the treatment of legumes and particularly of Soya (*Glycine hispida*) for the making of sauces, condiments or food products]. *French Patent* 415,026. Sept. 16. 3 p. Application filed 1 July 1909. [Fre]

• **Summary:** Soya or other leguminous seeds, with or without addition of cereals, are suitably cooked, and after being cooled aseptically are seeded with pure cultures of the organisms necessary to produce the desired results. They are then aged. The process is very delicate and the aging sometimes very long (as in the preparation of *shoyu*, which can last from 8 months to five years). Other products include *tao-yu*, *miso tao-tjing*, and *tuong*. The sauces or condiments produced are sterilized or pasteurized in trade packages. Address: Boulevard Gia-Long 53, Hanoi [Hanoi] Tonkin [French Indochina].

441. Gilbert, A.W. 1910. Soy beans and fertilizer question. *Daily Consular and Trade Reports (U.S. Bureau of*

Manufactures, Department of Commerce and Labor
13(79):55. Oct. 5. [1 ref]

• **Summary:** The following is an extract from the *National Review*, of Shanghai, China: "It is well known that soy-bean cake has for years been the most popular fertilizer in Japan. Now, however, that the United Kingdom, and the Continent of Europe and America to a less extent, have become purchasers of Manchurian beans, the question arises whether Japan will to be able to buy bean cake in huge quantities if the price rises appreciably. In studying this question two factors should not be lost sight of: One is that Japan is herself a large grower of soy beans, having according to the latest available returns (1908) over 1,200,000 acres under cultivation, producing annually some 19,000,000 bushels of beans, while the other is that Japan imports very large quantities of soy beans from China and Korea. The greater part of these beans is used for the purpose of human food—i.e., in making of 'soy,' 'miso,' and bean curd—but a portion by no means small is used also as a fertilizer.

"The Russo-Japanese war had such an effect in curtailing the supplies of beans and cake that to arrive at a just appreciation of the position it is necessary to go back a good many years. In making such a review it will be noted that, both in the case of beans and of cake, the amounts imported in 1909 were record importations, but that the average price was the lowest since 1903. Should the price in the future be forced up very high in consequence of British and other demands, the presumption is that Japan would turn to sulphate of ammonia, if the cost per unit of nitrogen therein were less than the cost of bean cake. On the other hand, it must be remembered that the removal of the import duty on sulphate of ammonia in the United States of America means that the United States will probably absorb large quantities of the British output, and that Japan will have to pay a higher price if she wants a share of this fertilizer. Thus the outlook for nitrate of soda becomes a good deal brighter, and now that, owing to the subsidized Japanese line to (South) America, it is possible to get cheap freight rates, it looks as though (Chilean) nitrate of soda will be a serious competitor to the other nitrogenous fertilizers, except in the matter of wet rice cultivation.

"There is a point which, though obvious enough to those intimately connected with the trade, is sometimes overlooked in general discussions on the subject of bean cake, viz, that the British farmer can afford to pay a proportionately higher price for cake than the Japanese farmer, the reason being that in the United Kingdom the cake, after serving for provender, turns into a fertilizer, whereas in Japan it is employed as a fertilizer directly, without any intermediate use.

"As regards rock phosphate, most of the supplies have hitherto come from Ocean and other islands. Owing, however, to the new fertilizer law which prohibits any

admixture in Japan of earth and sand with rock, it will probably be found that the phosphate from the above-mentioned islands, being pure and expensive, will be displaced by the cheaper varieties of rock from Tennessee and Algiers, which are naturally mixed with impurities." Address: Vice-Consul, Nanking.

442. *Los Angeles Times*. 1910. Fertilizers for Japan. A scarcity of soy beans makes a market for Tennessee rock phosphate. Oct. 13. p. I13.

• **Summary:** "It is well known that soy-bean cake has for years been the most popular fertilizer in Japan. Now, however, that the United Kingdom, and the Continent of Europe and America to a less extent have become purchasers of Manchurian [soy] beans, the question arises whether Japan will continue to be able to buy bean cake in huge quantities if the price rises appreciably.

"In studying the question, two factors should not be lost sight of: One is that Japan is herself a large grower of soy beans, having according to the latest available returns (1908) over 1,200,000 acres under cultivation, producing annually some 19,000,000 bushels of beans, while the other is that Japan imports very large quantities of soy beans from China and Korea. The greater part of these beans is used for the purpose of human food—i.e., in making of 'soy' [sauce], 'miso,' and bean curd [tofu]—but a portion by no means small is used also as a fertilizer.

"The Russo-Japanese war had such an effect in curtailing the supplies of beans and cake that to arrive at a just appreciation of the position it is necessary to go back a good many years." In 1909 Japan imported record amounts of beans and cake, but "the average price was the lowest since 1903. Should the price in the future be forced up very high in consequence of British and other demands, the presumption is that Japan would turn to sulphate of ammonia, if the cost per unit of nitrogen therein were less than the cost of bean cake."

The "British farmer can afford to pay a proportionally higher price for cake than the Japanese farmer," since in the UK the cake, "after serving for provender [feed], turns into a fertilizer [manure], whereas in Japan it is employed as a fertilizer directly, without any intermediate use. "

443. *Oil, Paint and Drug Reporter*. 1910. The soya bean and the fertilizer question. 78(17):41. Oct. 24. [1 ref]

• **Summary:** "An extract from the *National Review of Shanghai*, regarding the relation of the soya bean to the fertilizer question, has been sent to the Department of Commerce and Labor by Vice-Consul A.W. Gilbert from Nanking. The discussion of the subject by the Review is as follows:" There follows a long excerpt.

444. *Times (London)*. 1910. Soy bean as a fertilizer. Nov. 21. p. 14, col. 6.

• **Summary:** “Several subjects of importance to this country are discussed in the *Daily Consular and Trade Reports* published by the Bureau of Manufacturers, Department of Commerce and Labour, Washington [DC]. A note upon soy beans as a land fertilizer is particularly noteworthy in view of the doubt expressed in this country last year as to their manurial value.”

There follows a summary of: Gilbert, A.W. 1910. “Soy beans and fertilizer question.” *Daily Consular and Trade Reports* (U.S. Bureau of Manufactures, Department of Commerce and Labor). Oct. 5. p. 55.

445. Li, Yu-ying. 1910. Produits alimentaires et condimentaires à base de graine de soja [Food products and condiments made from soya]. *French Patent* 424,125. 2 p. Application filed 27 Dec. 1910. Issued 5 May 1911. [Fre]

• **Summary:** “This invention has for its object the manufacture of products based on cooked soybeans (*graines de soja cuites* (*pois chinois* = Chinese peas)), which can be divided into two large categories: 1. Products fermented with salt, including soy sauce (*la sauce de soja*) and soybean paste (*la pâté de soja*). 2. Non-fermented, sweetened products, including sweet soya preserves (*la confiture de soja*) and soy powder (*la poudre de soja*), which can be utilized in pastry (*la pâtisserie*) and confectionery (*la confiserie*).

The process for making each type is described in general terms. To the fermented sauces “can also be added spices such as pepper, cloves, ginger, nutmeg, pimento/allspice, etc. Or sugar can be used in place of the spices. The soy sauce or paste obtained, as has just been said, can be concentrated or dried by heat or evaporation.

“For the non-fermented, sweetened products, including soy confectionery and soy powder, one proceeds as follows: For the confectionery, the soybean seeds are dehulled, cooked, and crushed. Then this pulp is mixed with about one-third part sugar. Or, one can add dry fruits, chestnuts, almonds, hazelnuts, cocoa*, etc. The product can be dried to obtain a soy-based powder, which can be employed in various ways in pastry and confectionery. This powder is different from flour, not only because it comes from cooked soybeans, but also because it contains none of the cellulose in the soybean hulls.”

* Note: This is the earliest suggestion seen stating that soy can be used with cocoa. *Webster’s Dictionary* defines cocoa (pronounced CO-co, a modification of the Spanish term cacao), a term first used in 1577, as “1: Cacao. 2a: Powdered ground roasted cacao beans from which a portion of the fat has been removed.” *Webster’s Dictionary* defines cacao (pronounced kuh-KAO, derived from the Spanish from Nahuatl *cacahuatl* cacao beans, and first used in 1555) as the dried partly fermented fatty seeds of the cacao (a South American tree, *Theobroma cacao*), used in making

cocoa, chocolate, and cocoa butter—also called cacao bean, or cocoa bean. Address: Resident in France (Seine).

446. Piper, Charles V.; Morse, W.J. 1910. The soy bean: History, varieties, and field studies. *USDA Bureau of Plant Industry, Bulletin* No. 197. 84 p. Dec. 31. Includes 8 plates showing plants, pods, and seeds, and an excellent 6-page index. [27 ref]

• **Summary:** Contents: Botanical history and identity of the soy bean. Botanical classifications of soy-bean varieties. Varietal characteristics of soy beans: Habit of growth, foliage, pubescence, flowers, pods, seeds. Frost resistance. Period of maturity (soybeans were planted at the Arlington Experimental Farm, near Washington, DC, from 3 June 1905 to June 1909). Changes in life period (soybeans were planted at the Arlington Farm in 1902). Pollination and hybridization. Mutations. Nomenclature and classification. Early agricultural history in the United States. Varieties introduced in the United States independently of the Department of Agriculture or previous to 1898: Enumeration, Ito San, Mammoth, Buckshot, Guelph, or Medium Green, Butterball, Kingston, Samarow, Eda, Ogemaw, or Ogema.

Varieties grown in Europe (p. 32-33; Early history, Samarow, Etampes, Chernie [from Khabarovsk, Siberia], “Yellow Riesen,” Buckshot, “Yellow,” “Brown,” Butterball, S.P.I. No. 5039. European seed companies carrying soybeans include Dammann & Co., Naples, Italy; Haage & Schmidt, Erfurt, Germany; Vilmorin-Andrieux & Co., Paris, France).

The soy bean in Asia (p. 34-35): Asiatic sources of soy beans, list of varieties with SPI numbers from each of the following countries and places: Siberia (South Usuri [Ussuri], Khabarovsk, Merkoehofka), Manchuria (Newchwang, Harbin, Tieling), Korea (Pinyang, Ko-bau), Japan (Tokyo, Kobe, Yokohama, Hokkaido, Anjo), China (many places), Formosa (Taihoku), Cochin China (Saigon), India (Darjiling [Darjeeling] and Khasi Hills—Assam; Pithoragarh—Kumaon Dist.; Safipur, Hasangani, Ranjitpurwa—Unao, Uttar Pradesh; Etawah, Manipuri—Uttar Pradesh; Cawnpore, Dehra Dun, United Provinces; and Poona Bombay), Java (Buitenzorg), Celebes (Macassar).

Desirable characters in soy-bean varieties (p. 36-37): Considerations governing choice, habit of the plant (“Erectness of stem with upright or ascending branches is a prime requisite of a desirable variety. A tall habit is also important, as dwarf varieties usually bear pods very close to the ground, so that many will be left on the stubble...”), coarseness (a coarse, woody stem makes mowing difficult. However slender varieties often have small pods and seeds, often with vining tips and a tendency to lodge), ability to retain leaves, color of the seed (“Yellow or green seeds are preferable to darker colors, as the shattered seeds are more easily found by hogs pasturing the field or stubble”),

shattering, resistance to disease (“In sections where nematodes and cowpea wilt occur most soy-bean varieties are seriously affected by both these diseases”), nonfilling of pods. Synopsis of the groups (plants bushy vs. twining). Synopsis of the varieties (within each group lists the total number and acquisition numbers of varieties with various colored seeds and germs: Group I–190 varieties (seeds straw-yellow, germ yellow–71 varieties; seeds olive-green, germ yellow–45 varieties; seeds chromium-green, germ green–17 varieties; seeds brown to olive, germ yellow–28 varieties; seeds black, germ yellow–18 varieties; seeds black, germ green–7 varieties; seeds bicolored, germ yellow–4 varieties). Group II–4 varieties. Group III–8 varieties. Group IV–76 varieties. Group V–7 varieties.

Of the 285 varieties in the five groups, 152 varieties (53.3%) have yellow (straw-yellow or olive-yellow) seeds, 55 varieties (19.3%) have black seeds, 44 varieties (15.4%) have brown seeds, 24 varieties (8.4%) have green seeds, and 10 varieties (3.5%) are bicolored).

Catalogue of soy-bean varieties (by S.P.I. number, from no. 480 in 1898 to no. 27,501 in 1909; p. 39-74). In 1908 USDA acquired soybean seeds from Vilmorin-Andrieux & Co. (Paris, France), Haage & Schmidt (Erfurt, Germany), and Dammann & Co. (Naples, Italy) (p. 57-60).

The best varieties of soy beans (p. 75, in 7 groups from very early to very late). Explanation of plates. Index.

The “Catalogue of soy-bean varieties” (p. 39) is “a complete list of soy beans imported by the United States Department of Agriculture, arranged chronologically in accordance with the sequential S.P.I. (Seed and Plant Introduction) numbers assigned to them by the Office of Foreign Seed and Plant Introduction.” These numbers start at #480 (imported from South Ussuri, Siberia, in 1898) and end at #27501 (imported from Shanghai, Kiangsu, China, in 1909). Concerning No. 21825 (p. 58): “From Hokkaido, Japan, 1908... This variety is said to be used principally in the manufacture of ‘soy,’ ‘miso,’ ‘tifu’ [sic, tofu], etc. It has also been obtained again from the same place and grown under Nos. 21830 and 21831.”

“The best varieties of soy beans” (p. 75) lists 35 varieties, each with a name and S.P.I. number, arranged in seven groups based on time to mature, from “Very early.–Ogemaw, 17258” to “Very late.–Barchet, 20798; Riceland, 20797 (In 1908 at Biloxi, Mississippi, it displayed astonishing diversity).” This list is “based primarily on the results at Arlington Experimental Farm [in Virginia], but those obtained in cooperation with various experiment stations have also been given due consideration:

“Very early.–Ogemaw, 17258.

“Early.–Early Brown, 25161 (from Indiana Agric. Exp. Station, 1909); and Vireo, 22874.

“Medium early.–Chernie, 18227; Auburn, 21079 A; Merko, 20412 (from Merkoechofka, Siberia); Elton, 20406; Chestnut, 20405 B.

“Medium.–Ito San, 17268; Medium Yellow, 17269; Tashing, 20854; Shingto, 21079; Swan, 22379; Brindle, 20407; Sedo, 23229; Lowrie, 22898 A.

“Medium late.–Brooks, 16789; Flava, 16789 A; Cloud, 16790; Ebony, 17254; Haberlandt, 17271; Peking, 17852 B; Wilson, 19183; Taha, 21999; Austin, 17263.

“Late.–Mammoth, 17280; Edward, 14953; Acme, 14954; Flat King, 17252; Tokyo, 17264; Hope, 17267; Hollybrook, 17278 (from Arkansas Agric. Exp. Station, 1904); Farnham, 22312.

“Very late.–Barchet, 20798; Riceland, 20797.”

Matsuura (1929 and 1933) cites this as the world’s earliest publication on soybean genetics: “Recording segregation of seed- and flower-color in its natural hybrids.” Page 11 notes that soybeans named “New Japan peas” were obtained from Norway (Source: Martens 1869). Page 20 notes that the Ogemaw variety of soybeans, which takes 92-97 days to mature, was obtained in 1908 from the Idaho Agricultural Experiment Station, where it had been grown for several years. Note 1. This document contains the earliest date seen for soybeans in Idaho, or the cultivation of soybeans in Idaho (about 1906).

Page 20 also notes that Buckshot variety of soybeans, which takes 92 days to mature, was obtained in 1908 from the Minnesota Agricultural Experiment Station, where it had been grown for several years. This is the second earliest document (April 2004) seen concerning the cultivation of soybeans in Minnesota. “Potomac Flats” is not mentioned in this report.

Concerning “Habit of Growth” (p. 12-13), the author states: “All soy beans are strictly determinate as to growth; that is, the plants reach a definite size according to the environment and then mature and die. The great majority of the varieties are erect and branching, with a well-defined main stem (Plates I and III)... In other varieties the stems and branches, especially the elongated terminals, are more or less twining, and usually weak, so that the plant is only suberect or even procumbent (Plates I-III).”

Photos show: (1) Plants of a wild soy bean grown in a greenhouse in a pot. (Fig. 1) Plants of a wild soy bean from Soochow, China, grown at the Arlington Experimental Farm. (2) Plants of a soy bean from Cawnpore, India. (3) Rows of different varieties of soy beans at Arlington Farm. (4) Plants of seven varieties of soy beans, showing types of habit: Meyer, Peking, Austin, Pingsu, Hollybrook, Haberlandt. (5) The same seven varieties shown in plate 4 after hanging in a dry room for 6 months. (6-7) Eleven soy bean pods, ranging in size and shape. (8) 36 varieties of soy bean seeds, showing variation in size and form.

Note 2. This is the most important document ever published on early soybean varieties in the USA. Note 3. This is the earliest document seen (June 2008) that uses the word “determinate” in connection with soybeans. Determinate plants terminate main stem elongation at, or

soon after, the onset of flowering. Indeterminate cultivars continue main stem elongation several weeks after beginning flowering.

Note 4. This is the earliest publication see (Feb. 1999) written jointly by Piper and Morse, two of the most influential early advocates of the soybean in the USA. It is also the earliest document by or about Morse in connection with soybeans. Morse graduated from Cornell University, New York, on 20 June 1907 and 2 days later reported for duty at the Bureau of Plant Industry in Washington, DC, to work under Dr. C.V. Piper.

Note 5. This is the earliest document seen (Feb. 2004) in which Piper or Morse mention miso, tofu, or the use of soy beans as a coffee substitute.

Note 6. This is the second earliest document seen (July 1998) that uses the word “shatter” (or “shattered” or “shattering”) in connection with soybeans. The earliest document (in 1854) used the word “shatter” in a very general sense. This document uses it more precisely, as the title of a section and for comparing varieties (p. 36): “When grown for grain alone, shattering is a serious fault. Some varieties, like Guelph, shatter inordinately; others, like Peking, scarcely at all... As a rule the varieties with large pods and seeds shatter much worse than those with small pods and seeds...”

Note 7. This is second the earliest English-language document seen (Oct. 2004) that uses the term “germ” to refer to a part of a soy-bean seed. The germ or embryo is the part of the seed inside the seed coat. The section titled “Seeds” (p. 15) states: “The germs or embryos of soy-bean seeds are yellow, except in the green-seeded and part of the black-seeded sorts, in which they are green.” Address: 1. Agrostologist; 2. Scientific Asst., Forage-Crop Investigations, Bureau of Plant Industry, USDA, Washington, DC.

447. Friedenwald, Julius; Ruhräh, John. 1910. The use of the soy bean as a food in diabetes. *American J. of the Medical Sciences* 140:793-803. Dec. [9 ref. Eng]

• **Summary:** The article begins: “The soy bean (*Glycine hispida*), sometimes incorrectly called the soja bean, is an annual leguminous plant...” It continues with a brief but accurate history of the soy bean in Europe and the USA, a botanical description of the plant, examples of food uses such as boiled whole dry soybeans, green vegetable soybeans (“The beans are eaten as a vegetable, in soups, sometimes picked green, boiled and served cold with a sprinkling of soy sauce and sometimes served as a salad... If the beans are green, the preliminary soaking may be omitted.”), soy sauce or shoyu, natto, tofu, miso, yuba, a coffee substitute, and whole dry soybeans. A brief description of the process for making tofu is given, together with nutritional analyses of tofu, and 4 varieties of soybeans. “The most striking point about the bean is that it

contains no starch, or, at least a very small quantity, which is strange when one considers it resembles the various beans very closely and all other varieties of beans are extremely rich in starchy materials.” An analysis of the “gruel flour from the soy bean” made by the Cereo Co., Tappan, New York, shows it to contain 14.64% protein, 19.43% fat, no starch, and no reducing sugars. “Our own experience with the soy bean in diabetes extends over a series of eight cases.” The 8 cases are then described individually. Cooking directions and recipes are given for making gruels, broths, and muffins using “soy gruel flour” or “soy flour.”

The authors conclude: “(1) The soy bean is a valuable addition to the dietary of the diabetic on account of its palatability, and the numerous ways in which it can be prepared. (2) The soy bean in some way causes a reduction in the percentage and total quantity of sugar passed in diabetic subjects on the usual dietary restrictions.” Address: 1. M.D., Prof. of Diseases of the Stomach, College of Physicians and Surgeons, Baltimore, Maryland; 2. M.D., Prof. of Diseases of Children and Therapeutics same college.

448. Honcamp, F. 1910. Die Sojabohne und ihre Verwertung [The soybean and its utilization]. *Tropenpflanzer (Der) (Berlin)* 14(12):613-34. Dec. (Chem. Abst. 30:45). [9 ref. Ger]

• **Summary:** Contents: Introduction. Utilization as food and food adjuncts (stimulants / enjoyables) (*als Nahrungs- und Genussmittel*). Use for technical purposes. Use for fodder.

According to English consular reports the total production of soya beans in China amounted in 1907 to 580,000 tons, rising in the following year to 850,000 tons. During the year 1909 no less than 35 million kg of the beans passed through the Suez Canal.

Harz classified the varieties of *Soja hispida* into 2 main groups, one containing those of strongly compressed form and of olive green to brownish-black color, and the other swollen varieties more or less sickle-shaped, and of yellowish-brown to deep brown color.

Dietrich and König [1891] conducted 20 analyses of the soybean and found the following average composition: Water 11.34%, crude protein 35.11%, crude fat 16.98%, nitrogen-free extract 26.18%, crude fiber 5.88%, and ash 4.51%.

An analysis of the inorganic constituents of the beans by Schwackhöfer gave the following results: Potassium oxide, 44.56%; sodium oxide, 0.98%; lime, 5.32%; magnesia, 8.92%; iron oxide, trace; silica, trace; phosphoric acid, 36.89%; sulphuric acid, 2.70%; and chlorine, 0.27%.

Both in China and Japan the black varieties are boiled and roasted and eaten with rice, while the green and white varieties are ground to meal and baked into cakes, etc. The soy sauce, which is now largely exported to England and America, and used in the manufacture of other sauces, is

prepared from wheat and a small light yellow variety of the bean, with the addition of salt and water, the prepared mass being fermented in open vessels at as low a temperature as possible for a period of 8 months to 5 years, and the sauce then separated from the residue. Another product made from the beans in Japan, and used in the preparation of soups and flavors for cooking, is known as miso. In addition to these, a so-called bean cheese (tofu), and a similar product from which the bulk of the water has been removed (kori-tofu), are prepared from soya beans in Japan.

Attempts to acclimatize the plant in Germany have not yet proved successful, although it may be possible to introduce an early-ripening variety with a short vegetation period.

Note: This is the earliest document seen (Aug. 2007) that gives soybean production or area statistics for China. It is not clear whether or not this includes Manchuria, or refers only to Manchuria. Address: Prof., Germany.

449. Honcamp, Fr. 1910. Die Sojabohne und ihre Abfallprodukte [The soybean and its by-products]. *Landwirtschaftlichen Versuchs-Stationen* 73:241-84. Dec. (Chem. Abst. 4:3099). [18 ref. Ger]

• **Summary:** Largely a good review of the literature. Contents: Introduction and history. Botanical and microscopic characteristics. The best varieties for production of seeds / beans (incl. Soja platycarpa, Soja tumida, etc.). Soybean cultivation (incl. Fesca, Haberlandt). Chemical composition. Utilization of the soybean and its products: Use as food and food adjuncts (stimulants / enjoyables) (*Genusmittel*) (incl. boiled or roasted soybeans, shoyu or soy sauce {*Shoyu oder Bohnensauce*} made with rice- or wheat koji {*Reis- oder Gerstenkoji*}, miso, tofu {*Bohnenkäse*}, dried-frozen tofu {*Kori-Tofu oder Eisbohnenkäse*}, soybean meal {*Sojabohnenmehl*}, soybean oil {*Sojabohnenöl*}), industrial and technical uses of soybean oil (illuminant, soaps, table of constants), use as a livestock feed (Sheep were fed soybean oil meal and meal {*Sojakuchen, Sojamehl*}, pressed residue {*Pressrückstand*}, or solvent processed {*Extraktionsrückständen, Sojamehle, Sojakuchenmehl*}; soybean hay {*Sojabohnenheu*} and straw also make good feeds).

Illustrations show: (1) A soy bean plant with pods (non-original, p. 245; from an original in Fesca 1898). (2) Soy bean pods, seeds, and cells (non-original, p. 246; from an original in C.O. Harz 1885).

Note: This is the earliest German-language document seen (Feb. 2004) that uses the term “Eisbohnenkäse” to refer to dried-frozen tofu. Address: Rostok, Germany.

450. Inouye, Jukichi. 1910. Home life in Tôkyô. Tokyo, Japan: Printed by the Tokyo Printing Co. vii + 323 p. No index. Illust. (some color). 23 cm. Facsimile edition reprinted in 1985 by KPI (London & Boston). [Eng]

• **Summary:** Chapter 5, “Meals,” states (in a description of making breakfast): “But in point of utility the soy bean comes next to rice, for our soy sauce which enters into almost all dishes is made from the bean, wheat, and salt. So extensively is this sauce employed that table salt is comparatively little needed. The bean is also the principal ingredient in *miso*, which is a mixture of the soy bean, steamed and pounded, with rice-yeast [koji] and salt. This *miso* is largely used in making soup; and the soups into which it does not enter are usually flavoured by boiling shavings of sun-dried bonito and straining them off” (p. 58).

“After the rice-pot is removed, another pot is put over the hearth for making *miso*-soup... *Miso*-soup contains strips of garden radish [daikon], edible seaweed (*alopteryx pinnatifida*) [wakame], bean-curd [tofu], egg-plant, or other vegetables according to season. These two, the rice and the soup, are all the cookery required in the morning. There must, of course, be hot water for tea.” Pickled vegetables (called *kôkô* or *kô-no-mono*) especially garden radish, invariably accompany Japanese meals (p. 58-59).

“The breakfast, then, is very simple. Sometimes the family take their meals at a large low table which is set before them [as they sit on their heels in the *seiza* position on tatami mats] at each repast; but often a small tray, about a foot square and standing six inches or more high, is placed before each member. In the left corner of the tray near the person before whom it is set, is a small china bowl of rice, while on the right is a wooden bowl of *miso*-soup. A tiny plate of pickled vegetables occupies the middle or the farther left corner, while any extra plate would fill the remaining corner. This plate also holds something very simple, such as [*umeboshi*] plums preserved in red perilla leaves, boiled kidney beans, pickled scallions, minute fish or shrimps boiled down dry in soy sauce, a pat of baked miso, shavings of dry bonito boiled in a mixture of soy and *mirin*.” An illustration (line drawing) shows such an individual meal tray, with chopsticks resting on the rim of the tray (p. 59-60).

“Soy [sauce] is usually sold in wooden kegs as it does not change [spoil] with time; but the poor buy it in half-pint bottles” (p. 68).

The midday meal is very simple. But the “evening repast is the principal meal of the day... fresh fish is more frequently served than at noon. The fish may be boiled in a mixture of *mirin* and soy, be put into a soup made with an infusion of dried bonito shavings, be roasted on the iron netting with a sprinkling of salt or repeated coatings of soy, or be taken raw in thin slices [*as sashimi*]. This raw fish is a peculiarly Japanese dish” (p. 70).

Note: In Japan, almost everything is done in an orderly way, followed by nearly everyone. There are rules (often unwritten) for how to do almost everything.

Chapter 6, “Food,” states: “Sea-weeds are also in great demand. Of these the principal are the *konbu* (*Laminaria*

japonica), which is largely exported into China, and the laver [*Porphyra tenera*], which is obtained in this sheets [*nor*] and taken with soy alone or with rice rolled into it." Yellow chrysanthemum flowers are also used as food, "either fried with a coating of *kuzu* (*pueraria Thunbergiana*) or boiled in brine and pressed" (p. 72).

Eels are eaten, with bamboo skewers passed through them; "they are roasted over a fire, being from time to time dipped in a gravy [sauce] of *mirin* and soy. Tokyo is especially noted for eels served this way." Sun-dried cuttlefish, which are flat and hard, "are cut into slices which are roasted and dipped in soy" (p. 73).

"As we do not use a knife and fork at table, all fowls have to be cut up before they are served... The commonest method with the domestic fowl and duck is to boil them in small slices in a shallow pan with bits of onion in a gravy [sauce] of soy, *mirin*, and sugar." "It is only of recent years that we have begun to eat beef and pork; but we have in Tokyo a large number of shops where they are sold." One kind of shop is "a sort of restaurant where beef is served in the same manner as the domestic fowl and duck above mentioned" (p. 74).

"Though cooking is mostly done at home, no small quantity of small quantity of prepared food is bought for the meals. The most important of such food is the bean-curd [tofu]. For this the soy bean is soaked in water, ground, steamed, and strained; and the liquid is allowed to coagulate by the addition of brine [*nigari*] and then pressed in a square box with a cotton-cloth bottom until the water has been drawn off, leaving behind a soft white curd. This curd is cut into small slices and put into soup in the morning; it is sometimes thrown into hot water, and as soon as it is warmed [as *yudofu*], dipped into a mixture of soy and *mirin* and eaten. It is also fried. Indeed, the bean-curd shares with the *tai* [sea-bream] the distinction of having a special treatise dealing with a hundred ways of dressing [cooking / serving] it" (p. 74).

"As there is no dessert at a Japanese meal, fruits are commonly eaten at odd hours, especially by children." Apples are grown mostly in Yezo [Hokkaido], "the most northerly of the larger islands" (p. 75).

A common dish for the beverage [a light lunch eaten between meals] is the (*soba*) or buckwheat noodles. *Soba* "is dipped before eating, into an infusion of bonito shavings flavoured with a little soy and *mirin*, to which small bits of onion [*negi*] and Cayenne pepper have been added" (p. 77).

Another inexpensive food "is a kind of cracknel [*senbei*] made by baking and dipping small disks of rice or wheaten flour in soy" (p. 78).

"The bulk of confectionery is made of rice, red beans [*azuki*], millet or sugar. Glutinous rice is steamed, pounded in a wooden mortar into a pasty consistency, and left to cool" [to become *mochi*]. The red bean is boiled, pounded, strained and mixed with sugar to make "red bean jam" [*an*],

which "is the most important ingredient of Japanese sweetmeats..." "Starch extracted from the root of the *kuzu* (*pueraria Thunbergiana*) is also much employed in confectionery." "By steaming a mixture of red beans, sugar, wheat, and *kuzu*, we get a sweet dark-red cake, which is almost as popular as the sponge-cake" (p. 80).

Inouye, who lived 1862-1929, lived to witness the Meiji period end and westernization begin. A scholar, journalist, translator and Japanese diplomat, he served at Japanese embassies in Belgium and the United States. Returning to Japan in 1918, he devoted the remaining years of his life to compiling English-Japanese and Japanese-English dictionaries.

Note: This book comes in an elegant, traditional "folding case" (*chitsu*), consisting of five stiff pieces of paperboard, covered with cloth, and held in place by two ivory-looking pegs (each 3 cm long), each of which slips into a cloth sleeve. This folding case performs much the same function as a Western slipcase. Address: Tokyo, Japan.

451. Lafar, Franz. 1910. Technical mycology: The utilization of micro-organisms in the arts and manufactures. Vol. I. Schizomycetic fermentation. Translated from the German by Charles T.C. Salter. London: Charles Griffin & Co. xvi + 312 p. Introduction by Dr. Emil Chr. Hansen (Principal of the Carlsberg Laboratory, Copenhagen). Illust. (90 figs). Index is in Vol. II. 23 cm. [Eng]

• **Summary:** This first volume discusses bacterial ("schizomycetic") fermentations. Richly illustrated, it also includes accurate historical background on many subjects. An extensive bibliography for both this volume and volume II appears at the back of volume II (p. 417-518).

The Preface, by Emil Chr. Hansen of Copenhagen, states (p. vi): "Within the last two decades the study of Microbiology has made gigantic strides, both in the pathological and technical branches of the subject; and just as investigations into the Physiology of the higher plants gave the first impetus to the establishment of Agricultural Experiment Stations in all countries, so, in like manner, have the Physiology of Fermentation and Technical Bacteriology called into existence, within the last few years, a number of Stations and Laboratories for the development of those branches of industry where micro-organisms play an important part." The first three chapters, comprising the introduction, give an interesting early history of the discovery of fermentation. Their contents: 1. The theory of spontaneous generation: Definition, discovery of fermentative organisms, Needham's demonstration in favour of 'Generatio Aequivoca', Spallanzani's experiments, Franz Schultze's experiment, foundation of the science of antiseptics by Schwann, labours of Schröder and Dusch, Pasteur's examination of the theory, Béchamp's microzome theory, spontaneous generation only unproven, not impossible. 2. Theories of fermentation: The alchemists–

Stahl's theory of fermentation, Gay-Lussac's opinion, Cagniard-Latour's vitalistic theory, Th. Schwann's researches, Fr. Kützing's general theory, Liebig's decomposition theory, Pasteur's theory. Nägeli's physico-molecular theory, the enzymes and M. Traube's ferment theory, general definition of fermentation, so-called spontaneous fermentation of sweet fruits, decompositions effected by light and air.

In Chapter 31, titled "The fermentation of cheese and allied decompositions" (p. 243-52) are sections on "Pure culture ferments" (p. 246-47) and "Natto and miso" (p. 247-48; each a kind of "vegetable cheese"). The latter section also discusses the Soja bean, Fr. Haberlandt, koji, shoyu (called shojou, soy or shoyu), tofu and nukamiso. Reports by H.C. Prinsen-Geerligs "on the preparation (by the aid of fungoid ferments) of other dishes from soja beans in Chinese cookery, such as Taohu or bean-cheese [tofu], the sauce Tao-yu, &c."

In Chapter 33, titled "The fixation of free nitrogen by bacteria" (p. 259-71) are sections on "The discovery of leguminous nodules" (p. 261-62; Malpighi, Boussingault, Hellriegel), "Formation and functions of the nodules" (p. 262-64; Lachmann, Frank, Woronin, Hellriegel, Wilfarth), "The nodule bacteria" (p. 264-66; organized albuminoids, *Bacillus radicicola*), and "The bacteroids" (p. 266-69). Concerning bacteroids: "The first successful, artificial production of nodules by the aid of pure cultures was made by A. Prazmowski. This worker, in view of the absence of the sporogenic faculty in these organisms, changed the name of *Bacillus radicicola*, bestowed on them by Beyerinck, into *Bacterium radicicola*."

Note 3. This is the earliest English-language document seen (March 2003) that uses the word "bacteroids" (or "bacteroid") in connection with root nodules on plants.

Note 4. This is the earliest English-language document seen (Feb. 2004) that uses the word "Taohu" to refer to Chinese-style tofu. Address: Prof. of Fermentation-Physiology and Bacteriology, Imperial Technical High School, Vienna.

452. Lafar, Franz. 1910. Technical mycology: The utilization of microorganisms in the arts and manufactures. Vol. II. Eumycetic fermentation. Part II. Translated from the German by Charles T.C. Salter. London: Charles Griffin & Co. ix + p. 191-748. Illust. Index. 23 cm. [3240* ref. Eng] • **Summary:** An extensive bibliography on mycology and fermentation (3,240 references) for both this volume and volume I appears at the back of this volume (p. 561-695). The first chapter in this volume is Chapter 49, titled Mineral Foodstuffs (p. 191-202).

Chapter 55, titled "Classification of the families Saccharomycetaceae and Schizosaccharomycetaceae" is on p. 270-295. Section XVII (starting p. 456) is titled "The enzymes and the enzyme actions of yeast." It begins with

Chapter 53, on "Alcoholase," by Dr. Rudolf Rapp, which starts with an historical introduction. Page 506 mentions the "Amylo process."

Chapter 56, by Prof. Dr. Carl Wehmer, titled "Morphology and subdivision of the family Aspergillaceae" discusses (p. 296-346): Eighteen illustrations of *Aspergillus conidiospores* (p. 300-19). "*Aspergillus Oryzae* (Ahlburg) Cohn (= *Eurotium Oryzae* Ahlburg). This species is of practical importance as a saccharification fungus, and has been cultivated for centuries in Japan for the preparation of the rice mash for Saké, as well as for the production of Soja sauce and miso." It was first identified (as *Eurotium oryzae*) by Ahlburg in 1876, and was renamed *Aspergillus oryzae* by Cohn in 1883, though a full morphological description was not given until 1895 (by Wehmer) (p. 308). *Aspergillus Wentii* (Wehmer), which is used in Java to make Tao-Yu (Chinese-style soy sauce). It appears spontaneously on the boiled Soja beans that have been covered with *Hibiscus* leaves, as described by Wehmer in 1896 (p. 311).

Chapter 57, also by Prof. C. Wehmer, titled "Chemical activity of the Aspergillaceae," discusses (p. 350-74): Saccharification of starch, Takamine's research using *Aspergillus* to make diastase (Taka-diastase) and its efficiency compared with similar enzymes of different origins, koji extract which contains amylase and other enzymes, use of *A. oryzae* in the preparation of rice-wine, Soya [shoyu], and Miso (p. 352).

This volume also discusses: The degradation of proteids and their derivatives, protease (p. 369-70). Film-forming surface yeasts and their accompanying phenomena, *Mycoderma* (p. 411-15). Invertase (p. 516). Other enzymes discussed in this chapter include maltase, melibiase, lactase, trehalase, raffinase, and amylase. Address: Prof. of Fermentation-Physiology and Bacteriology, Imperial Technical High School, Vienna.

453. Li, Yu-ying. 1910. Ta tou: Le soja [The soybean]. Paris: Societe Biologique de l'Extreme Orient. 66 p. Illust. 28 cm. [Chi]

• **Summary:** This remarkable work, written entirely in Chinese, was the first of Li's major works on soybeans and soyfoods. Published in Paris, it was written in Chinese and meant to be read by young people in China interested in coming to Paris to study or in helping Li with research on Chinese soybean varieties. An expanded and revised version was published into French the next year (1911).

Contents: Soybeans: 1. Introduction. 2. Names and varieties (colors, sizes, and shapes) of soybeans. 3. Where soybeans are produced and their history. 4. The place of soybeans in the hierarchy of plants (taxonomy). 5. Nutritional composition of soybeans. 6. Characteristics of soybeans (physiological, morphological, etc.). 7. Food uses of soybeans (incl. tables comparing the price of tofu with various meats, and the various sicknesses associated with

eating different types of meat). 8. Equipment used in making soyfood products (a photo shows the equipment in Li's modern soymilk and tofu plant near Paris; p. 37), and compares soymilk with cow's milk. A large soybean utilization diagram in Chinese (p. 44) shows all the products that can be made from soybeans using the wet process (from soymilk) or the dry process (from flour). Note: This is the earliest document seen (July 2002) that contains a diagram of this type.

9. Value of soybeans in agriculture (incl. fertilizer use).

10. Conclusion. Appendixes: (1) About the *Société biologique de l'Extrême Orient* (Far-East Biological Society). (2) Membership form for the Far-East Biological Society (Paris): Date, name, A.K.A., Address, Occupation or subject of study, Place of birth. Please enclose 2 yuan membership fee (p. A6). (3) Bibliography of publications on soybeans by the Society of the Far East (p. A7-8). (4) Special announcement concerning soybean research (p. A9).

Illustrations (line drawings) show: (1) Comparison of shapes and colors of 7 different colors of soybeans (p. 5). (2) Five views of soybean pods with beans, incl. outside of pod, inside of both halves when open, with beans in one half, the two cotyledons of a single soybean (p. 11). (3) Soybean plant with pods (p. 12). Photos show: (1) The cellular components and layers of soybeans and hyacinth beans (p. 22, 23). (2) The interior and equipment in Li's soymilk and tofu plant on the outskirts of Paris (p. 37). (3) Microscopic views of soymilk (*doujiang*) and a liquid resembling soymilk made from soy flour (p. 38).

Tables show: (1) Size range (length, width, and thickness; maximum, average, and minimum) of 7 colors of soybeans: yellow bean, green skin bean, green bean, dark bean {"black" or "crow" bean}, black bean, red bean, spotted bean (p. 4). (2) Composition of four parts of a soybean plant: Comparison, water, protein, oil, carbohydrates, ash (p. 18). (3) Comparison of oil and protein content of 5 colors of soybeans (red, black, green, white, yellow) from various countries and regions: China, Japan, Southeast Asia, Russia, Hungary, and France (p. 19). (4) Composition of soybeans, hyacinth beans, and wheat (p. 21). (6) Comparison of the price of tofu with that of various meats (p. 29). (7) Ash content of soybeans, hyacinth beans, duck, uncooked rice, cabbage, egg, beef, chicken, lamb, pork, carp, wheat flour (p. 31). (8) Carbohydrate content of uncooked rice, wheat flour, hyacinth bean, soybean (p. 32). (9) Weight of products containing 100 gm of protein: Soybeans, tofu (somewhat firm), hyacinth bean, uncooked rice, bread, cooked rice, vegetables (p. 32).

Publications listed in the Bibliography (p. A7-8): *Ta tou—The soybean* (this book; published 1909). *Bean curd—20 centuries of great craftsmanship around the world* (1908). *Soycrafting—China's manufacturing specialty* (1908). *The Paris Bean Curd Company* (1908, illustrated).

An outline of the agricultural societies of France (1908).

Note: the above publications concern industrial matters.

A description of herbs (Chinese medicinal plants etc.) (1909). *TB [Tuberculosis] and its cure* (1909). Note: the above publications concern medicinal herb and health matters.

The benefits of soyfoods (1909). *Smoking and its relationship to health, economics and industry* (1909). Note: the above publications concern industrial and health matters.

Special announcement concerning soybean research (p. A9): "Gentlemen—Many of us in this society are researching the benefits of the soybean. It may be considered as China's greatest resource. We have already published a number of specialized reports. These have been made available to you. In view of the fact that there are so many varieties of soybean in China and that the regions of cultivation are so extensive, we must rely upon you, our colleagues, in all parts of the country to go into the field and collect data for us. Only then will we be able to complete our research into every variety of Chinese soybean. If we should receive your kind consent, we beg you to be so good as to send the soybean varieties to the Peking postal address of this Society (address is given). We are interested only in soybeans (see pages 1-6 of this book) and need one or two cattles (0.5-1.0 kg) of each. Once our research into the benefits and properties of these beans is complete, we will submit a further report to this Society, in order to repay your goodwill. If you would please advise us of the cost of the beans and the postal charges, we will make the appropriate refunds. We will also send you a copy of this book as a modest token of our gratitude. Enclosed please find an explanatory document. Please take the trouble to complete this and send it together with the beans.

"The Paris/Far-East Biological Research Society"

On page A-10 is a form to be used when submitting the Chinese soybean varieties.

454. Sawyer, E.R. 1910. *Studies in agriculture. Series 2. The soya bean.* Div. of Agriculture and Forestry, Natal, South Africa. 33 p. Reprinted from the Natal Mercury. [10 ref]

• **Summary:** Contents: 1. The agricultural romance. 2. The commercial aspect. 3. The adaptability of the bean. 4. The cultivation of the crop. 5. Soya bean oil. 6. A food for man. 7. A stock food and fertiliser (the cake is widely used as an agricultural fertiliser in the Far East). A photo (opposite contents page) shows two men standing in a crop of soy beans at the Central Experiment Farm, Cedara, 1908-09.

Concerning "Soya bean oil": "In the Far East it is largely employed for edible purposes; it is suitable for cooking, for a salad oil, and as a component in such butter substitutes as margarine. In the 'Mark Lane Gazette' for Jan. 20, 1910, it is stated that one third of the frying oil used in London

kitchens now comes from the soya bean, instead of from cotton seed as heretofore” (p. 21).

Illustrations on unnumbered pages show: (1) A typical soya bean plant. (2) Botanical characters of soya bean, with close-ups of vegetative parts, floral parts, and fruit. (3) Seeds and pods of 7 varieties of soya beans. (4) Soya bean seedlings, with roots. (5) Roots of soya bean plant, with nodules (by Blanchard). (6) Curing frame for harvesting soya beans. Address: Director, Div. of Agriculture, Natal, Durban, South Africa.

455. Shaw, Norman. 1911. The soya bean of Manchuria. *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series No. 31. 32 p.* Also published by P.S. King & Son, 2 Great Smith St., Westminster, London SW, England. [6 ref. Eng]

• **Summary:** Contents: Introductory. Varieties. The plant. Soil and climate. Cultivation. Soil infestation. Yield. Uses of the soya bean: In the Far East: Bean sauce or soy (called shoyu in Japan [whence the name “soya”] and *chiang-yu* in China), the Chinese paste *chiang* (incl. *ta chiang* {great, made with yellow soybeans} and *hsiao chiang* {small, made with soybeans and maize}), tofu (incl. firm tofu {*tou-fu kan-tzu*}, tofu curds {*tou-fu nao*, curded with calcium sulphate instead of brine}, curd skin or yuba {*tou-fu p'i*}, layers of tofu pressed in cloth [pressed tofu sheets] {*ch'ien-chang tou-fu*}, and “frozen curd” {*tung tou-fu*, tofu that is frozen then dried}), bean flour, bean refuse {okara}, bean oil for food or industrial uses. Beancake and its uses. Uses in the Western world (beancake in Europe, and bean oil in Europe). The bean oil and cake industry in Manchuria. Trade development (statistics on exports from Newchwang have been kept since 1864). Beginnings of the European trade. Bean oil and cake production in South Manchuria. Chief sources of supply. Map references. Supplementary note.

Appendixes: 1. Table showing values (in Haikwan taels) per picul of [soya] beans, beancake, and bean oil at Newchwang, 1864-1909. 2. Graph showing monthly values (in silver yen) at Dairen of beans, bean oil, and beancake, 1907-10. 3. Table showing estimated [soya] bean production of Manchuria in normal years, compiled by the South Manchuria Railway Co. in 1909. 4. Estimates of [soya] bean production of Manchuria for the last 5 years by province and territory, compiled by the South Manchuria Railway Company in 1909: Fengtien province 1,092,350 tons. Kirin province 626,500 tons. Heilungkiang province 280,250 tons. Grand total for all Manchuria: 1,999,100 tons. Estimated soya bean production in Manchuria has increased from 600,000 tons in 1906 to a peak of 1,500,000 tons in 1908, to 1,400,000 tons in 1910. Percentage contributed by various colors of soya bean in 1910: Yellow 80.1%, green 9.4%, white-eye 3.8%, black-eye 3.2%, and black 3.4%. 5.

Table showing total export of [soya] beans and bean products from Manchuria, 1909. For export of soya beans: Dairen 51% of total, Suifenhö [Suifenhö] 25%, Newchwang 23%. For export of bean cake: Newchwang 50%, Dairen 44%, Antung 2%. For export of oil: Newchwang 75%, Dairen 21%, Harbin 1%. The writer frequently refers to Sir Alexander Hosie’s book on Manchuria (1901, 1904).

The introduction begins: “It is only in the last three years that soya beans have become important in intercontinental commerce, and their rapid emergence from obscurity has, indeed, been one of the most remarkable commercial events of recent times. The circumstance that ‘the rise of a great export trade in beans is that fact that overshadows all others,... the soya bean thus taking at a bound a position equal to that of tea in the list of exports and, with the addition of beancake, even challenging the position of silk at the top of the list’”* (Footnote: * = “Statistical Secretary’s Report on the Foreign Trade of China in 1909”).

The “bean district *par excellence* is the upland country beyond Moukden [Mukden] where the hills... are overlaid with wind-deposited soil...”

“Cultivation: In Manchuria the beans are produced almost entirely by hand methods. The plough, which is drawn by quaintly mixed teams of oxen, mules, and donkeys, has only one handle and a rough steel-tipped cutter. The seed is sown by hand, on top of the drills, in April, and is covered by hand. A heavy hoe is used for a good deal of the turning and breaking. When the plant appears the earth is heaped up round it, so that the roots may derive the maximum of nourishment from the soil.”

“The harvest takes place in September, and the pods are usually harvested before they are quite ripe, as otherwise they are liable to burst on drying, a loss of seed being thus occasioned. The plants are pulled up by hand or cut with a straight-bladed sickle in Manchuria, and collected into small heaps in order to facilitate drying, and, when dry, the seed is separated by means of a cylindrical stone roller having longitudinal cuts on its surface, which is dragged over the plants by a mule as they lie on the threshing-floor. After this primitive threshing operation has been completed, the beans are winnowed in the usual Chinese method—that is, by throwing them against the wind. The only manure used is a compost of stable manure and earth, which is often taken from the miry pools formed in the roads—the despair of the carter but a boon to the farmer. In countries where chemical manures are used, it is only necessary to apply potash and phosphoric acid where they are lacking, for nitrogenous manure is unnecessary, owing to the property which the soya bean possesses, in common with other leguminous plants, of obtaining nitrogen from the air by means of colonies of bacteria.”

Yield: In 1867 the Rev. A. Williamson, who travelled in the upper Sungari district at the time and who appears to

have been a very close observer, estimated a maximum yield of 2,000 lb., or 15 piculs, to the acre.

The Chinese paste *chiang* is not the same as the Japanese paste miso. *Chiang* “is made by farmers and eaten with fish, meat, and vegetables, while the more expensive Chinese soy [sauce] is only made by wealthy families and restaurant keepers and is not consumed by the very poor. There are two kinds of *chiang*: *ta* (great) and *hsiao* (small).” Describes in detail how each is made. Great *chiang* is made from yellow soybeans, salt, and water. Small *chiang* contains a small amount of maize (p. 7).

Industrial uses of bean oil: (1) As an illuminant, where it has not been superseded by kerosene oil. One advantage is that “no lamp is needed to hold it, the wick being inserted into the basin or plate containing the oil.” (2) As a lubricant, bean oil is used to a very considerable extent in north China and Manchuria “for greasing axles and parts of native machinery” (p. 8-9).

In China, bean oil “is used as a substitute for lard, in cooking. Although it is inferior to rapeseed and sesamum oils for this purpose, these oils cannot compete with it in point of price... In spite of its unpleasant characteristic odour and unpalatability, the poorer classes in China consume it in its crude state, but among the rich it is boiled and allowed to stand until it as become clarified” (p. 8). In Europe “Refined bean oil may be used as a salad dressing in place of other oils (but, owing to its unpleasant odour, is usually mixed with an oil of animal origin or with rapeseed oil), or in the manufacture of margarine, when a greater percentage of soya oil than of copra oil is allowed” (p. 10).

Traditional methods of pressing out the oil yield only about half of that present in the seed (9% of the weight of the beans); the rest is left in the cake, and this distracts very much from its fertilizing value. “By gasoline extraction the beans give up practically all their oil, which, as refined by this process, is a clear, pure liquid, hardly resembling the muddy, dark oil produced in the old way” (p. 14).

Photos on unnumbered pages show: (1) Seven varieties of soya beans: Large black, small black, large flat black, small flat black, two green, and two yellow. (2) Soybean root nodules. (3) A massive granite roller for crushing beans. (4) “Steaming vat with grating on which [soya] beans are placed in gunny bags during the steaming process. (5) Native bean press, showing cakes in receptacle and log wedges driven in to press out the oil. (6) Modern bean press [hand turned screw?] set up in bean mill. (7) Oil-motor and crusher. (8) Modern crushing machinery. (9) Piles of beans in sacks awaiting loading onto trains at Changchun. (10) Color fold-out map titled [soya] “Bean districts of Manchuria.” A schematic diagram (in the form of a rhombus / diamond) shows the probable relationships of the different groups of soya beans based on their color. A beautiful map, approximately 17 by 22 inches, is attached between page 26 and page 27. “Wuchang” [not Wochan] is in the area labeled

“Yellow Beans” in the map. Other labeled growing areas on the map include “Grasslands,” “White eye,” “Black beans” [soy], “Maize” and “Green beans.” The major railways, rivers, roads, and towns / cities (with their Chinese characters) are shown. The major soybean markets (underlined) are Fenghwa / Maimaikai, Kungchuling, Changtufu, Tungkiangtze, Sinminfu, Tienchwangtai, Newchwang, Kaiyüan, Tiehling, Mafengkow, Moukden, Takushan, Antung, Harbin, and Shwangcheng.

Shaw finished writing this yellow book on 31 December 1910.

Note 1. This is the earliest document seen (July 2000) that mentions the South Manchuria Railway Company in connection with soybeans. This company was run by Japan. According to the *Encyclopedia Nipponica* (vol. 22, at “Minami”), the South Manchuria Railway Company (*Minami Manshu Tetsudo K.K.*) was established in 1905 based on the Portsmouth Treaty ending the Russo-Japanese War; Japan took over the rights to the railway from Russia. The company started to actually run the railway in 1907.

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the term “frozen curd” to refer to dried-frozen tofu.

Note 3. This is one of the earliest English-language documents seen (Sept. 2006) that repeatedly uses the word “bean” (not preceded by the word “soya”) to refer to the soya bean.

Note 4. This is the earliest English-language document seen (Oct. 2008) that uses the term “toufu p’i” to refer to yuba. Address: 4th Asst., Custom House, Dairen.

456. Bontoux, Emile. 1911. *Le Soja et ses dérivés* [The soybean and its products]. *Matières Grasses (Les)* (Paris) 4(36):2195-99. April 25; 4(37):2239-43. May 25; 4(39):2326-29. July 25; 4(40):2364-66. Aug. 25; 4(41):2405-07. Sept. 25. [48 ref. Fre]

• **Summary:** Contents. Introduction. The plant: origin and history, species and varieties, culture, and production: USA, Japan, Manchuria, France, England, China, Korea, Indochina (it is cultivated for the needs of the population in Cochin China {especially in the provinces of Chaudoc and Baria}, Annam, Tonkin, Cambodia), Formosa, Java, India, Africa. The soybean—a food plant: The plant, the seed, large table showing many analyses from many countries of the chemical composition of many soybean seed varieties.

Introduction to food products made from soybeans in East Asia. Shoyu [soy sauce] (and koji). Miso. Natto. Tao-yu. Tao-tjiung (doujiang, from China). Tuong (from Annam). Tofu. Li Yu-ying. Table showing composition of powdered soymilk, fresh tofu, and soy flour.

The soybean—an oilseed plant. The soybean as an oilseed in the Far East. Table showing exports of soybean cake and oil from various Manchurian and Chinese ports in 1908 and 1909. The soybean as an oilseed in Europe and the United

States. Table showing imports of soybeans to various British ports in 1909 and 1910 (the leading port by far is Hull, followed in 1909 by Liverpool, London, Bristol Channel, Scotland, and Other ports {Rochester, etc.}). Table showing exports of soy oil from Great Britain in 1910: To Germany, Austria, Australia, USA, Belgium, Denmark, Egypt, France, Holland, Italy, the Indies (*Indes*), Norway, Russia, Sweden, other, total (115,372 barrels, each weighing 175 kg). Discussion of soy oil and cake in most of the above countries.

Trade in soybean seeds: Mitsui Bussan, Manchuria, England, China, Japan. Soybean cake.

Soy oil: Physical and chemical properties. Applications and uses as food and in industry: Margarine, for illumination, soaps, as a drying oil, paints and varnishes, linoleum, artificial rubber. An extensive bibliography is at the end of the last article in the series.

Note: This is the earliest document seen concerning the cultivation of soybeans in Cambodia. This document contains the earliest date seen for the cultivation of soybeans in Cambodia (April 1911). Earlier documents imply that soybeans were being cultivated in Cambodia by 1900, and it is highly likely that they were being cultivated for at least a century before that time. Address: Ingénieur-chimiste E.C.I.L., France.

457. Nishimura, Torazô. 1911. Tamari miso sonota miso no kôbo kinrui ni kansuru kenkyû [Studies on the yeasts of tamari miso and other misos]. *Nogaku Kaiho (J. of the Scientific Agricultural Society, Japan)* No. 106. p. 21-50. May 5; No. 107. p. 8-48. June 6; No. 108. p. 20-40. July 5. [Jap]

458. Dahle, Alfred. 1911. Ueber das fette Oel der Sojabohne [On the oil of the soybean]. Dissertation from University of Jena. Published in Neustadt by J.K.G. Wagner (Wagnerschen Buchdruckerei). 43 p. 22 cm. See Jena Dissertations 1910-11. v.1, no. 7. [28 footnotes. Ger]

• **Summary:** The author's advisors were Prof. Dr. H. Matthes, and Prof. Dr. Haussner. Contents: Introduction: Nomenclature, history in Asia and Europe (Kaempfer, Haberlandt), taxonomy, chemical composition, Maggi and shoyu, miso, tofu, soy bread for diabetics, coffee substitute, soy oil in China and Japan, in England and Germany, use in soaps and as a substitute for linseed oil, constants (such as iodine number), fatty acids, the work of Prof. Matthes. Experimental part.

In Japan and China, two fermented products are made from soybeans: Shoyu or bean sauce (*Bohnensauce*) and miso. Shoyu is enjoyed with almost all foods as a seasoning, and for quite some time has been exported in abundance to England and America, where it is used in the manufacture of English and American sauces. Shoyu is even used in the well-known Maggi seasoning. With respect to its nutritional

value and stimulating effect (on the appetite), shoyu sauce (*Shoyu-Sauce*) is somewhat comparable to meat extract. For the preparation of shoyu sauce, milled wheat, soybeans broken into large pieces then cooked until half soft, water, and table salt are combined in specific proportions and allowed to ferment in large vats. The fermentation lasts anywhere from 8 months up to 5 years.

The preparation of miso seems similar to that of shoyu except that barley or rice are used [instead of wheat]

Moreover, in Japan, a type of raw cheese, so-called "bean cheese" (*Bohnenkäse*), is made from soybeans (*Soja*); in Japan it is called tofu (p. 8). (p. 8).

Biography: The author was born on 20 March 1884, in Halberstadt, the son of a chemist, who was later the director of a sugar factory. Address: Halberstadt, Germany.

459. Krauss, F.G. 1911. Leguminous crops for Hawaii. *Hawaii Agric. Exp. Station, Bulletin* No. 23. 31 p. Sept. 20. See p. 23-27, 30.

• **Summary:** "Soy bean (*Glycine hispida*): While possessing most of the good qualities common to other leguminous forage plants, the great diversity of type to be found in the soy bean adapts it to many uses and conditions unsuited to other legumes."

"Among its most important uses is that for culinary purposes especially in the manufacture of the Japanese products (soy and miso). These products are imported into Hawaii from Japan in large quantities, but their manufacture is being rapidly extended in Hawaii. This has created quite a demand for the bean locally. At present two and one-half million pounds of the bean are being imported into Hawaii annually. The average cost is about \$3 per hundred pounds landed in Honolulu and the beans sell for \$3.25 to \$3.40 per hundred pounds. The Japanese coffee growers in the Kona district in Hawaii have been growing the bean as an intercrop for years. The total production is said to be about 200,000 pounds per annum. It will thus be seen that the immediate local demand is very far from being supplied at present."

Note 1. This is the earliest document seen (Jan. 2005) that gives soybean production or area statistics for part or all of the United States (Hawaii).

"The yield of seed obtained by the station from small experimental plantings ranges from 600 to 1,000 pounds per acre for the dwarf early maturing varieties, and about twice that amount from the medium late and medium tall sorts."

"The following list has been selected from about 100 varieties tested by the station. It is believed to include the best sorts for each of the several purposes for which the soy bean is especially recommended. In the case of culinary varieties, both quality and yield of seed have been considered. The soy and miso manufacturers demand a large, hard, light colored seed, with a thin skin, and the writer is indebted to Mr. N. Yamakami, manager of the

Hawaiian Soy Co., for his assistance in selecting varieties according to these qualities.

“Under Group I has been collected the best culinary varieties. These are usually found among the dwarf, early maturing sorts, qualities which make them well suited for intercultures, short rotations, and catch crops. Group II contains the heaviest seeding sorts irrespective of their culinary qualities. These varieties are especially well suited for growing as grain for cattle feeding. Group III contains the rankest growing sorts. These supply the maximum yields of both forage and grain, which makes them especially valuable for fodder and green manuring.” Two photos show two types of soy bean plants: (Fig. 1) Three dwarf types (culinary varieties). (Fig. 2) Three intermediate types (general purpose varieties). These are accompanied by a list of the soybean names in the 3 groups with SPI numbers and basic characteristics. The six culinary varieties in Group I include Hollybrook, Manhattan, Swan, Elton, and Acme. The four culinary and grain varieties in Group II include Acme, Edward (“Mr. Yamakami, of the Hawaiian Soy Co., pronounces this the largest seeded yellow soybean he has ever seen and considers it a very desirable variety for the production of miso and other Japanese food products”), Ito San, and Ruralnook. The two forage varieties in Group III (tall, rank-growing, and best suited for green manuring) are Riceland and Barchet.

Another photo (Plate VIII) shows “Seeds of leguminous plants described in this bulletin, natural size—including three colors and sizes of soy beans.

Note 2. This is the earliest English-language document seen (June 2005) that uses the word “intercrop” (or “intercropped” or “intercropping”) in connection with soybeans.

460. Barrett, O.W. 1911. Rice ally crops. *Philippine Agricultural Review* 4(11):592-98. Nov. See p. 594-96. [1 ref]

• **Summary:** The section titled “Soybeans” (p. 594-96) begins: “Probably every tourist who has visited any of the cities of Japan or China has noticed in the markets these peculiar blocks of a grayish white, jelly-like substance and wondered whether they were really good to eat, but comparatively few have ever tried there the three or four varieties of vegetable ‘cheese’ prepared from the soybean*.”

*Footnote: A 3/4 page footnote, extracted from USDA Farmers’ Bulletin No. 58 by Langworthy, discusses five preparations commonly made in Japan from the soybean: natto, tofu or bean cheese (eaten in the fresh state or frozen), miso, yuba, and shoyu.

“Experts in threpsology, the new science of nutrition, seem to be in accord on the fact that in dietary matters two kinds of food are at least four times as good as one... Recently the European food experts have realized the high nutritious value of the soybean and a factory has been

established near Paris [by Li Yu-ying] for the manufacture of various food products from this wonderful seed.”

“Now is the time for the Philippine Agriculturist to take up soybean culture in earnest, and to develop it in the same way, even if not to the same degree, as our neighbors across the way have been doing for centuries. The fact that there are practically no seeds of this valuable crop at the present in the Philippines is a sad commentary on the progressiveness of the Philippine farmer; but it is never too late to learn” (p. 596). Address: Chief of the Div. of Exp. Stations, Philippines.

461. Giles, Lionel. comp. 1911. An alphabetical index to the Chinese Encyclopedia *Ch'in ting ku chin t'u shu chi ch'êng* (of 1726). London: British Museum. xx + 102 p. 32 cm.

• **Summary:** The author was born in 1875. The Introduction contains a lengthy discussion of Chinese encyclopedias (*lei-shu*), starting with the *Erh Ya*, dating from the 5th century B.C.; the 19 classes or categories of the *Erh Ya* are given. The next great encyclopedia was the *T'ai P'ing Yü Lan*, produced in 1,000 *chüan* or books A.D. 987. Unlike Western encyclopedias, these contain “no original articles on any subject, but consist simply of grouped extracts from previously existing literature.” “Another even more famous compilation of the same class is the *Wen Hsien T'ung K'ao*, by Ma Tuan-lin, published in 1319.”

For soybean chiang, see p. xxvii and p. 299-300. Address: Asst. in the Dep. of Oriental Printed Books and Manuscripts at the British Museum.

462. Hutchison, Robert. 1911. Food and the principles of dietetics. 3rd ed. New York, NY: William Wood and Co. viii-xx + 615 p. See p. 234-36, 496. Illust. Index. 22 cm. [100+* ref]

• **Summary:** Contains exactly the same information about soy and related products as the 1906 edition, in the same chapters, except it is on slightly different pages: See p. 234-37, and the section on diabetes, which has a subsection on “Diabetic breads” (p. 496-97). Robert Hutchison was born in 1871. Address: M.D. Edinburgh, F.R.C.P., Physician to the London Hospital [London].

463. Jingu Shicho. 1911. Koji ruien [Encyclopedia of early references to things Japanese]. Tokyo: Koten Kokyusho. Revised editions publ. in 1931 and 1971 by Yoshiko Bunkan; 51 volumes. Key volumes are Inshoku (#39) and Shokubutsu (#50). [50+ ref. Jap]

• **Summary:** Koji means “ancient things” or “origins.” Rui means “varieties” or “description.” En means “dictionary.” This is one of the best books for doing historical research on Japanese culture, including foods. The book is divided into 30 major subject areas, such as Food and Drink. Within that section all basic Japanese foods and beverages are listed. After each one is listed many of the important early works

in which that food is mentioned, with a quote of what is said. Furigana are used liberally to assist with pronunciations of hard-to-pronounce early document names and terms. Compiled from 1896 to 1914, volume 1 of the original edition is dated 1908. The works cited are from ancient times to 1867. The final volume is an index to the whole.

The volume on Food and Drink is titled *Inshoku-bu* (Vol. 51). Whole soybeans, p. 229-35. Black soybeans, p. 235-36. Green soybeans (*ao-daizu*), p. 236-37. Green vegetable soybeans (*edamame*), p. 239-40. Soybean cultivation, p. 240-42. Soybean utilization, p. 243-47. Daizu-ko Mochi, p. 555. Amazake, p. 695-97. Shirozake, p. 697-98. Hishio (Chiang), p. 836-40. Shoyu, p. 840-49. Miso, p. 851-68. Kuki (soy nuggets), p. 868-71. Natto, p. 871-74. Tofu (incl. Dengaku), p. 984-1005. Yuba, p. 995-96.

464. Kagawa (T.) Company 1911. Importers and distributors (Ad). In: Nichibei Shinbun-sha. 1911. *Nichi-Bei Nenkan [Japanese-American Yearbook. No. 7]*. p. C-64. [Eng; Jap]
 • **Summary:** Ad (full page). About ¼ of this ad is given in English. This company imports and sells various goods. These include (in Japanese) shoyu [soy sauce], shiro miso [sweet white miso], and aka miso [red miso]. And (in English) “Japanese refined sake (Aramakiya-Masamune), rice, miso, sauce, canned goods, dried fish, vegetables & pickles.” Address: 442 Merchant St., San Francisco, California. Phone: Kearny 1263.

465. Lafar, Franz. 1911. Technical mycology: The utilization of microorganisms in the arts and manufactures. Vol. II. Eumycetic fermentation. Translated from the German by Charles T.C. Salter. London: Charles Griffin & Co. ix + 558 p. Illust. Index. 23 cm. [3240* ref. Eng]
 • **Summary:** An extensive bibliography (3,240 references) for both this volume and volume I appears at the back of this volume (p. 417-518). The opening chapter begins: “Already in the first volume (sect. 22) the algae and the fungi were arranged in a single group. that of the Thallophytes, in contradistinction to all other plants, the latter being classed in the group Cormophytes.” The latter group has “an articulation of the body of the individual organism into leaf and stem.”

Chapter 43, titled “Morphology and systematology of the Mucors (p. 48+) contains sections on “Subdivision of the Mucor family” (p. 49-51), “The genus Mucor” (p. 51-53; The genus was established by Micheli as far back as 1729. It contains *Mucor Rouxii* and *Mucor mucedo*), and “Rizopeæ” (p. 53-56). An illustration (p. 55) shows *Rhizopus nigricans* (After Brefeld). *Rhizopus nigricans* is the best and longest known member of this family. In 1818 it was described by Ehrenberg under the name *Mucor stolonifer*, which is still used by several workers.” “The name *Rhizopus oryzae* has been given by Went and Prinsen

Geerligs (I.) to a fungus discovered by them in Ragi (sect. 241), the sporangia and spore of which organism are considerably smaller than those of *R. nigricans*.

Chapter 44, is titled “Fermentation by Mucors” (p. 57-62). Chapter 45, titled “The use of Mucoreæ in the spirit industry” (p. 63-71) has three sections: Sect. 240. “*Mucor rouxii* and other species of Amylomycetes” (p. 63-67) states: “For the preparation of rice spirit there is produced in China, Cochin China, and neighboring countries, an article known as Chinese Yeast, and put on the market in the form of flat mealy balls, about the size of a half-crown. Its preparation, composition, and application were first described in 1892 by E. Calmette (I.), whose reports were extended and supplemented by C. Eijkman (II.) in 1894.” The method of preparation is given. More important than its bacteria are “the yeast cells, which must be regarded as the exciting agents of the alcoholic fermentation; and certain Mucors, which affect the saccharification of the starch. Of the last-named organisms, which concern us here., Calmette isolated a species which, in honour of his teacher and colleague, E. Roux, he named *Amylomyces Rouxii*.” Two illustrations show this organism, which produces a “diastatic enzyme” (p. 65). The so-called amylo process and the work of Colette and Boidin with β -*Amylomyces* and α -*Amylomyces* in this process are discussed (p. 65-66).

Sect. 241 titled “Ragi and tapej” [tapé or tapeh] (p. 67-69) states that “Tapej... is prepared from rice by the aid of a secondary auxiliary material, which the Malay natives of Java term Ragi or Raggi, and the Chinese settlers call Peh-Khah.” A.G. Vorderman (1893) describes the preparation of Ragi. According to Eijkman (1894) Tapej, which is also called Tsao, is prepared with the aid of Ragi, by boiling husked Mochigome rice (*Oryza glutinosa* [*Oryza sativa glutinosa*], known as “Ketan” in Java) in water until soft. The flora of Ragi and Tapej comprises three groups of microorganisms; bacteria, budding fungi, and fungi belonging to the family *Mucoraceæ*.

Sect. 242, titled “The so-called Amylomyces process,” (p. 69-71), or Amylo process for short, states that “this is the name given to the process for the industrial utilisation of the diastatic activity of *Mucor Rouxii* and several allied fungi. A company, the ‘*Société d’Amylo*, was founded by A. Collette and A. Bodin (I, 1897), who also, in 1897, took out in the name of this company a German patent for a ‘process for producing alcohol from starchy materials, by means of aseptic saccharification and fermentation with *Mucedineæ*,...’”

Fernbach (II, 1899) has given a lucid description of the practical performance of this process in the patentees’ works, the maize distillery at Seclin near Lille, France. This description is summarized. “An English patent for the mechanico-technological modification of the process was also taken out by Collette and Boidin (III.) in 1898.” See also two other 1897 English patents by Collette and Boidin

No. 19858 and No. 1155. “The reader interested in this matter will find more precise data in the review published by M. Delbrück (III, 1899). The chief advantage of the *Amylomyces* process is the abolition of the expensive additions of malt requisite in the older method of saccharification, the amount formerly needed being up to 15 per cent. in the case of maize, and 2 to 3 per cent. in the case of potatoes. With regard to the yield furnished by the *Amylomyces* process, it is stated that in the Seclin works, 37.8 litres of absolute alcohol are obtained per 100 kilos. of maize containing 57.5 p, a yield corresponding to 66.2 litres per 100 kilos of starch. Owing to the large amount of mycelial hyphae, the residue filters easily.” “Finally it should be said that, since 1898, the aforesaid patentees have replaced *Mucor (Amylomyces) Rouxii* by another species, namely, so-called β -*Amylomyces*, or *Mucor* β . This organism is capable of dealing with more highly concentrated mashes than the other, and enables a charge of 25,000 kilos. of maize to be mashed to 1000 hl (22,000 gallons) of goods. per cent. of starch

Page 213 states that *Pichia farinosa* (Synonym: *Saccharomyces farinosus* Lindner, a film yeast) has been found by K. Saito (II, 1905, *Botanical Magazine*, Tokyo) in Japanese Soja sauce.

Chapter 51 discusses the genus *Aspergillus* (p. 228-31) with many fine illustrations, including conidiophores, conidia, ascospores, different stages of *A. oryzae* and *A. glaucus*. Page 228-29 state: “*Aspergillus Wentii*, Wehmer, was observed by Went in the preparation of Tao Yu (see vol. I, p. 248) according to the method practised in Java, and was described by Wehmer (XIX.) in 1896. It appears spontaneously on the boiled Soja beans that have been covered with *Hibiscus* leaves, and affects a loosening and disintegration of the firm tissue of the bean. The species forms a pale coffee-coloured, dense mold vegetation (Fig. 167).”

In Chapter 57 titled “Chemical activity of the Aspergillaceæ,” by Prof. Dr. C. Wehmer, page 270 states: “Two species, *Asp. oryzae* and *Asp. Wentii* are reported as able to grow through the substance of soft-boiled rice and Soja beans...” The “enzyme mixture from *Asp. oryzae* (the so-called ‘Takadiastase’)” is also mentioned.

Chapter 62 titled “The Monillæ and Oidia,” by Dr. H. Wichmann mentions *Monilia javanica* (occurring in association with others in Ragi, p. 333)., “*Monilia sitophila* (Mont.), Saccardo, is said by Went (IV.; reference missing) to be used by the natives in West Java in the preparation of a sweetmeat known as ‘ontjom’ composed of the seeds of the ground-nut or earth-nut (*Arachis hypogæa*). The ground-nuts, which are thoroughly permeated by the fungus, are made up in the form of small, orange-colored cakes, the surface of which is covered with the conidia, whilst the interior is both chemically altered and loosened in structure by the mycelium.” Sect. 315 (p. 336-39) is titled “Oidium

lactis and allied species.” Also discusses *Oidium lupuli*, Matthews and Lott (p. 338). Address: Prof. of Fermentation-Physiology and Bacteriology, Imperial Technical High School, Vienna.

466. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1911. Nichi-Bei nenkan [Japanese-American yearbook. No. 7]. 650 Ellis St., San Francisco, California. 647 p. Reprinted in 2001-02 in Tokyo by Nihon Tosho Senta. Series: Nikkei Imin Shiryôshû. Dai 5-kai [Collected Documents on Japanese Emigration. No. 5]. [Jap; eng]

• **Summary:** This book is read and numbered from “back to front” compared with typical English books; it is mostly (99%) in Japanese. The English-language title page reads: *The Japanese American Year Book*.

The book is divided into 12 parts, each numbered separately. Contents: (1) Front matter, incl. 1 ad (5 p.) (2) Table of contents (6 p.). (3) Map of California agriculture (fold out, in Japanese, 1 p.). (4) Black and white photos on unnumbered pages (12 p., front and back). (5) Ads (p. A-1 to A-18). (6) Front part of Nichibei Nenkan No. 7 (p. 1-200), including general information about America, Japanese in America, U.S. and agricultural census data, etc. (7) Ads (12 p.). (8) Nichibei Nenkan continued (p. 108 p., incl. original printing and publication dates and data on last page). (9) Ads (B-1 to B-66). (10) Directory of Japanese businesses and other organizations in the USA (p. 1-152, as of 1910 Oct. 1) (11) Ads (C-1 to C66). (12) New printing and publication dates (2002 Feb. 25), data, and ISBN (1 p.).

This year book focuses on Japanese in California. In early 1909, the California legislature “approved an appropriation of \$10,000 to be utilized for investigating the conditions of the Japanese in that state. The duty of directing the investigation naturally devolved upon the State Commissioner of Labor Statistics (*Rôdôkyoku-cho*), Mr. John D. Mackenzie. The work was begun on April 15, 1909, with the appointment of 9 special agents,” 8 men and one woman, all white Americans. “There were no Japanese or other aliens employed in any capacity. To this force were added for the office work two expert statisticians and two stenographers.” In early 1910, Mr. Mackenzie submitted to the governor of California (Gov. Gillette) a 78-page report (K. Kawakami 1912, p. 343-44).

Basic information about how the survey was conducted, its scope, and reaction to it is given on pages 27-28, 36-45, 47, 61-62, 150-51 of this year book. The text is written in the Japanese of the day, which included old-fashioned characters, sentence structure, and grammar—and is thus difficult for modern Japanese to read or translate. The surveyors went to every part of California where Japanese believed to live, and eventually surveyed an estimated 95% of the Japanese in California.

Most Japanese welcomed the surveyors and responded accurately and in detail on forms which were printed in both

Japanese and English. A very high percentage of the forms were returned by mail to the survey headquarters. The Japanese were also asked to fill out more specialized forms such as business license, payment of taxes, no. of children in school (incl. where and in what grades), occupation, employment, land use, etc. This newspaper (*Nichibei Nenkan*) obtained much information from this survey, and (apparently) from another census begun on 15 April 1910 (or is it 1909?); this one took one year and 5 days—finishing the research in April 1911, at which point compilation began. A key reason for the census was the strong anti-Japanese feeling in California, stirred up by leaders of the labor movement. The survey praised Japanese in California.

A table of U.S. farm crops (p. 54, near the front of this book) shows that in 1911 some 2,785,516 bushels of soybeans were produced in the entire USA worth \$7,767,702. Note: What is the source of these statistics? These are very early statistics on soybean production in the United States—earlier than any known USDA statistics.

A table of U.S. imports and exports from Japan (p. 74) shows that \$109,316 worth of miso and shoyu were imported; they were considered dutiable items, with a 40% duty levied on each (part 2, p. 23).

The Directory shows Japanese companies making soyfoods in California, Utah, Colorado, New York City, Washington state, and Oregon. Address: San Francisco, California.

467. Noda Iwachi. 1911. [Hishigi miso] (Ad). In: *Nichibei Shinbun-sha*. 1911. *Nichi-Bei Nenkan [Japanese-American Yearbook*. No. 7]. p. C-41. [Jap]

• **Summary:** Ad (¼ page). This company sells various goods including shiro miso [sweet white miso], Kinzanji miso, and Hishigi Miso, made by Matsuda in Kobe, Japan, and imported to the USA. Only the address in California is given in English. Address: P.O. Box 114, Mountain View, California. Phone: San Jose 5417 R 1.

468. Okurasho Shuzeikyoku. 1911. *Naikokuzei isan 53* [Domestic tax; treasure from the past 53]. Tokyo: Tokyozeimu Kantoku-kyoku. 1 vol. 23 cm. [Jap]*

• **Summary:** This is a Japanese government publication. Note: This is the 3rd earliest book in WorldCat / OCLC that has miso as a subject or title word. Address: Japan.

469. Sawyer, E.R. 1911. *Cedara memoirs on South African Agriculture*. Vol. II. Containing reports on feeding crops and livestock experiments in South Africa. Natal/Pietermaritzburg, South Africa. 371 p. See p. 131, 177, 183-218. Report X. The Legumes as Grain and Oil Crops: Soya Beans. [15 ref]

• **Summary:** A superb, early overview of soybeans and their uses in South Africa and England. Contents: An agricultural romance. Early experiments with the soya bean [in Europe

and South Africa]. Export trade from Manchuria. The course of prices. Consumption in Great Britain. Botanical character. The commercial aspect. History of the oil market during 1910. The adaptability of the bean. Germination of seed. Climatic requirements. Classification of varieties. Variety tests at Cedara: Black seeded (Buckshot and Nuttall tested in 1906), brown seeded, green seeded (Samarow and Guelph), yellow seeded (Mammoth and Hollybrook, planted Nov. 1908). The cultivation of the crop. Times of planting. Distances of planting. Manure experiments at Cedara. Nodule formation and composition of the plant. Harvesting soya beans. Storage of seed. Comparative yields of grain. Soya bean oil. Uses of the oil [for cooking, paint, soap, etc.]. Soya beans as human food (incl. natto, tofu, miso, shoyu). Digestion experiments [on humans in Japan]. Milling experiments. Soya beans as stock food and fertiliser. Live-stock experiments. Soya cake as fertiliser. Soya bean as green forage.

Concerning industrial utilization: The Vice-Consul-General at Yokohama writes that “the annual value of fertilisers employed in this country (Japan) amounts on an average to about £8,000,000 represented in equal proportions by artificial fertilisers and soya bean cake.” The year 1908 was exceptional, however, in that the value of the bean cake was 3.5 times that of the artificial fertilizers.

During 1910 the linseed oil reached its highest price in 50 years. Soya oil, now produced in large amounts in Manchuria after the Russo-Japanese war took its place. It was used in making paints, candles, and soaps. “Soya bean oil has been found eminently suitable for the soap-makers’ purpose on account of its low content of free fatty acids and of unsaponifiable matter or impurities. In the latter respect it has been shown superior to any of the other oils or fats of commerce, whether of vegetable or animal origin. The glycerine, which is secured as a by-product of soap and candle manufacture, is subsequently distilled for explosives, such as dynamite, blasting gelatine, cordite, etc., and for various purposes in the arts, for filling gas-metres, for the manufacture of inks, printers’ rollers, etc. The residue from the distillation of glycerine is used in the manufacture of boot blacking.”

Concerning germination (p. 191): At Cedara: “The first crop was planted in 1903, and a maximum yield of 920 lb. of grain obtained per acre. In the following season, characterized by unfavourable weather conditions, the heaviest yield on a new series of plots was 780 lb. per acre. A third season’s trial on the same ground, however, witnessed a marked increase with local seed, the heaviest crop totalling 1,252 lb. of grain.”

Concerning soybean cultivation in British colonies in Africa (p. 192): “Early last summer the late Sir Alfred Jones shipped to West Africa soya beans for experimental purposes, and it was subsequently reported by Mr. A.G. Turner, who was entrusted with a special mission to

encourage this culture on the west coast, that the soya bean could be successfully cultivated throughout the Gambia, Sierra Leone, Nigeria, and the Gold Coast Colony, but that the yield to the first experiment had only been from six to eight bushels per acre, there having been a considerable loss owing to faulty germination. Later results, however, were phenomenally successful.”

Concerning soybean trials in South Africa (p. 192-93): “During the past year favourable results have been received from Umzinto [from Messrs. Archibald and Co., 52 miles south of Durban; elevation 300 feet], Nel’s Rust Estate [64 miles north of Durban; elevation 2,710 feet], Nottingham Road [elevation 4,807 feet], and Naval Hill [Mr. J.R.T. Clouston of Garrow planted a few acres in 1908], Colenso [elevation 3,200 feet], and Cedara [82 miles by rail from Durban; elevation 3,540 feet; a number of varieties were tested in 1906] in Natal; and from Barberton and Pretoria in the Transvaal.”

Concerning comparative yields (p. 203): “As a grain producer, the soya bean compares very favourably with other leguminous crops, such as field beans, peas, etc. At Cedara no other legume has produced, with chemical manures only, so heavy a yield of seed; and not other legume, except the lupine, has showed itself so much to be depended upon as a grain producer.” “Land that will produce 10 muids of maize per acre should yield at least six muids of beans after the second year’s cultivation,…”

Concerning human digestion experiments (p. 212): “The general opinion of Japanese investigators, and others familiar with Oriental dietetics, is that the protein in articles of food prepared from soya beans is in a very available form, and that these preparations are most valuable foods.”

Five photos show various men standing in a crop of soya beans and in some of the variety plots at Cedara (1909-11). An illustration (line drawing) shows a curing frame for soya beans.

Tables show: (1) Yields in lb. per acre of soya beans sown at different times, during 3 years (19-3-04 to 1905-06). For each year is given: Date of sowing, date of harvest, yield of grain and straw, and manures used (superphosphate, gypsum, and potash). The variety tested was Henderson’s Early Green (Guelph) (p. 198). (2) Results of manure experiments with soya bean (Early Green) in lb. per acre. Sown 4 Nov. 1904. Harvested 13 March 1905. Increasing yields “may be attributed to the association of nitro-bacteria, the benefits of constant cultivation, and the accumulation of humus and residues of fertilizers” (p. 200). (3) Feeding value of soya bean cakes for manure, based on experiments by Messrs. Lever Bros., Port Sunlight, Liverpool (p. 215).

Note 1. This is the earliest document seen (June 2004) that mentions the use of a soy oil derivative (glycerine) in printing inks.

Note 2. This is the earliest document seen (May 2004) that mentions the use of soy oil to make candles (one of two

documents).

Note 3. This is the earliest document seen (June 2004) concerning the use of soy oil (or the glycerine derived from it) to make explosives.

Note 4. The next section of this report (p. 218+) is about ground nuts (*Arachis hypogoea*). Address: Director, Div. of Agriculture and Forestry, Natal; Principal, Cedara School of Agriculture; Formerly Asst. Secretary of Agriculture, Southern Rhodesia.

470. Stuart, George A. 1911. Chinese materia medica: Vegetable kingdom. Soy [Chinese miso and soy sauce] (Document part). Shanghai, China: American Presbyterian Mission Press. 558 p. See p. 195-96. 23 cm.

• **Summary:** “Soy.—(Chinese character given) (Chiang). Common names are (Chinese characters given) (Chiang-yu [soy sauce]) and (Chinese characters given) (Shih-yu [soy nugget sauce]). Li Shih-chen says that the Chinese name indicates the power of this substance to counteract the poison which may exist in food. Several forms of soy exist, such as flour soy, made of wheat or barley flour; sweet soy, of similar composition, but varying slightly in the method of manufacture; and bean soy, made of various kinds of beans, but more particularly of the *Hispidia* [sic, *Hispidia*] bean. One method of manufacture is as follows: ‘Take of *Hispidia* beans three quarts, and boil in water. Mix with twenty-four cattles of flour and allow to ferment. To every ten cattles of the mixture take of salt eight cattles, of well water forty cattles; mix and allow to stand until it is ripe.’

“Several other methods of manufacture are given in the *Pêntsao*, differing in various respects from this, but the method here given will suffice to illustrate the mode of manufacture. Soy is a black, thin liquid, having an agreeable saltish flavor, and frothing up of a yellow color when even slightly shaken. It is the universal sauce of the Chinese and Japanese, and is largely exported to India and Europe as a convenient menstruum for other flavoring substances used as condiments. In China it is both made in large quantities by shops and in smaller quantities by domestic manufacture. It is considered to provoke the appetite and to correct any injurious qualities of food. It is laxative, cooling, and antidotal to various poisons, according to Chinese estimation. It is often applied to burns, scalds, eczema, and leprosy sores. Its use is considered beneficial in threatened abortion and the hematuria of pregnancy.

“Two other kinds of soy are mentioned in the *Pêntsao*, each made from the seeds of different species of elm tree. One is called (Yü-jên-chiang) and the other (Wu-i-chiang) (Chinese characters given before each term). In regard to these two terms for elm, see the article on *Ulmus*. Both these kinds of soy are considered to be laxative, diuretic, and anthelmintic [expelling or destroying parasitic worms esp. of the intestine]. They should not be used to excess, as

they are considered to have some deleterious properties.”
Address: Rev., M.D., Shanghai, China.

471. Ward, Artemas 1911. The grocer's encyclopedia—
Encyclopedia of foods and beverages. New York, NY:
Published by the author. 748 p. Illust. (color). 29 cm.

• **Summary:** Soy-related entries: Bean (p. 49-54): “The bean of European history is the Broad or Windsor variety,...” “The principal beans of United States cultivation are the Kidney and Lima, both of them believed to be native of South America. The Kidney Bean is the Haricot of the French and in Great Britain is sometimes called the French bean.” The many varieties can be classified into “tough podded” and edible podded.” “The ‘tough podded’ class produces the bulk of the dried beans of commerce, variously known as ‘Kidney Beans,’ ‘Navy Beans,’ ‘Marrow Beans,’ ‘Black Beans,’ ‘Turtle Beans,’ etc., in many colors, shapes and sizes.” “‘Flageolets’ are cultivated with special regard to the consumption of the fresh seeds or beans.” To the “edible podded” class of kidney beans belong Wax or Butter Beans, the Cranberry Bean or Red Speckled Bean, String Beans, Snap Beans, French Beans. “Pea Beans are the Cowpeas of the agriculturist.” “Among numerous other ‘special’ varieties are the Soy Bean (which see), Asparagus Bean, Frijole, Lab-lab (or Egyptian Kidney), Red Bean, and Scarlet Runner.” Asparagus Beans are known as *Tou Kok* by Chinese gardeners in California.

“Catsup, Catchup, Ketchup: a word derived from the name of an East Indian pickle, which was formerly applied specifically to the boiled spiced juice from salted mushrooms, but is now freely attached to various sauces (sold both bottled and in bulk) which consists of the pulp—bottled, strained and seasoned—of various fruits, as tomatoes, green walnuts, etc.” Note: At “Catchup” and “Ketchup” we are told to see “Catsup.”

Locksoy ([Lock Soy], p. 346): “Rice boiled into a paste and drawn into threads, imported from China. It is used to thicken soups.”

Nuts (p. 412-13): A table shows the nutritional composition of all major American nuts, including almonds, chincapin [chinquapin] or water chestnut, chufa (earth almond), cocoanut, peanut, and peanut butter. “Many special nut foods, such as malted nuts, meat substitutes, etc., have been devised and extensively advertised by manufacturers for general dietetic use and for the special needs of vegetarians and fruitarians. It is said that some of these products contain soy beans, but apparently the peanut is very important in their composition.

Sauces (p. 552-53): In bottled sauces, vinegar is the most common liquid ingredient. “Commercial sauces of the Worcestershire kind, if of good quality, generally have Soy (which see) as their chief character ingredient. A typical formula of Worcestershire-style includes, in addition to Vinegar and Soy, a considerable percentage of lime juice,

onions and tamarinds and small quantities of garlic, fish (as anchovies or pickled herrings), red chilies and spices. The product, after cooking, is strained through fine hair sieves. Leicester Sauce resembles Worcestershire in general characteristics but is less pungent.”

Soy (p. 576): “A brown sauce, valuable to the commercial sauce market, made from the Soy Bean, a native of Southeastern Asia [sic] and widely grown in China and Japan. The beans are boiled, mixed with ground wheat or other grain, salt, etc., and allowed to ferment for a month or 6 months. The liquid is then strained off and clarified. Molasses is frequently added. In appearance it resembles Worcestershire Sauce, of which it is an important ingredient. It should not be too salt [salty] or too sweet, and although thick and syrupy, should be clear. When shaken in a bottle or glass it should, if it is genuine, leave a bright yellow film on the glass. Being a very desirable article, it is often counterfeited.”

Soy bean (p. 577): “Commercial and government circles, both in Europe and this country are devoting increased attention to the cultivation of the Soy Bean as a food product, as it contains a large percentage of protein and a fair amount of fat, thus resembling meat in general nutritive value. The cell-walls of the raw bean are very tough, but thorough cooking makes it readily digestible. Boiled with bacon and other fatty broths until soft and then seasoned, the result is a vegetable dish very pleasing to the average palate. If the beans are dry, a preliminary soaking to remove the skins is necessary.

“The Soy Bean is largely consumed in Japan, China and other parts of Asia as an adjunct to rice and other foods, taking the place of meat in the popular dietary. It is most popular in these countries in fermented form, the best known types being *Shoyu* or Soy Sauce; *Tofu*, a kind of cheese; *Miso*, Soy Bean ‘Milk’ [sic]; *Yuba*, the evaporated product of ‘Miso’ [sic], and *Matto* [sic, *Natto*], a product obtained by simple fermentation of the boiled beans. The various degrees and styles of fermentation serve the double purpose of rendering the beans more easily digestible and producing new flavors, just as by the fermentation of milk and cream we produce the different flavors of cheese.

“The plant is an annual, growing chiefly in bush form...” The different varieties are classified principally by the color of the beans: “Black, Yellow, White and Brown,... Types of all these four classes are grown to some extent in Germany, Austria, and Switzerland, and the first three also in this country, in North Carolina and other Southern States. Under favorable conditions a single plant may bear a hundred or more pods.

“Because of the fact that the beans contain little if any starch, they have been recommended as a desirable food for diabetics, and Soy Bean Bread and Soy Bean Meal are prepared for that purpose in Paris. The dried beans are also used in Switzerland and elsewhere as a coffee substitute.”

An illustration shows the top of a soy bean plant, with leaves, pods, and flowers.

Note 1. This book is full of fascinating information about the food system in the USA in 1911, with entries such as cold storage (first attempted in 1860, it has grown to extraordinary proportions), coloring matter (great improvements, no longer harmful), ice and refrigeration (ice manufacture dates from about 1870; today nearly 200 companies produce ice for general sale, mostly using the compressor and anhydrous ammonia). Dictionary of food names in five languages (English, French, German, Italian, and Swedish, p. 710-724) and a dictionary in English of "Culinary and bill-of-fare terms" (p. 741-45).

Note 2. The author, Artemas Ward, lived 1848-1925. His father was Henry Dana Ward (1797-1884), his grandfather was Thomas Walter Ward (1758-1835), and his great-grandfather was Artemas Ward (1727-1800), the first Commander-in-Chief of the colonial troops before the arrival of George Washington (a little-known Virginia planter) on 3 July 1775. Thereafter he served as second in command after Gen. Washington and was a Major General in the American Revolutionary War. Address: Formerly (from 1874) founder and editor of *The National Grocer*, 30 Union Square, New York.

472. Yamato Shokai (Yamato Co.). 1911. Dealers in Japanese and American groceries and provisions and general merchandise (Ad). In: Nichibei Shinbun-sha. 1911. *Nichi-Bei Nenkan [Japanese-American Yearbook]*. No. 7]. p. C-33. [Eng; Jap]

• **Summary:** Ad (¼ page). The top 1/3 of this ad is in English. This company sells various goods including (in Japanese) shoyu [soy sauce] and miso. This ad also appears in the 1913 yearbook (p. 35). Address: 630 N. 6th St., San Jose, California. Phone: San Jose 3379.

473. Nishimura, Torazô. 1912. Shôyu oyobi miso ni kansuru kenkyû seiseki hôkoku [Results of studies on shoyu and miso]. *Nogaku Kaiho (J. of the Scientific Agricultural Society, Japan)* No. 115. p. 1-10. March 5; No. 116. p. 1-31. April 5. [Jap]
Address: Nôgaku-shi, Japan.

474. Li, Yu-ying; Grandvoinnet, L. 1912. Le soja [The soybean]. *Agriculture Pratique des Pays Chauds (Bulletin du Jardin Colonial)* 12(108):213-23. March. [7 ref. Fre]
• **Summary:** Contents (continued): Products and condiments based on fermented soybeans. 5. Condiments in paste form (*Condiments pâteux*): Miso (preparation, different varieties including white miso, Yeddo miso, Sandai [Sendai] miso or red miso, composition of miso {a table based on studies by Kellner and König}), Tao-Tjiung (Tou-chiang, doujiang) or Chinese-style miso (preparation, properties, composition {a table based on analyses by Prinsen-Geerlig}). Sauces:

Shoyu (Schoyou, soyou, schoyu, or Phek-sze-You in Chinese; preparation, raw materials used and their proportions, formation of molds and koji, fermentation, perfection of the fermentation process in an aseptic environment using soymilk or soy bouillon inoculated with pure cultures), properties of shoyu, chemical composition of shoyu (tables show: (1) Composition based on analyses by Kellner, Stif, Belohoubeck, Tahara & Kitao. (2) Composition and forms of nitrogen according to Suzuki, Azo [sic, Aso], and Mitarai (3 tables)), aroma of shoyu (2 tables based on analyses by Tahara and Kitao; Belohoubeck found two types of microbes in shoyu; the *Saccharomyces* and the bacteria). *Chiang-yu (Tsiang-yeou*; Chinese soy sauce), Ketjap (soy sauce from Java). Address: 1. Conseiller de 1ere classe au Ministère de l'Agriculture de la Chine; 2. Ingénieur agricole (G.).

475. Li, Yu-ying; Grandvoinnet, L. 1912. Le soja [The soybean]. *Agriculture Pratique des Pays Chauds (Bulletin du Jardin Colonial)* 12(109):302-08. April. [2 ref. Fre]

• **Summary:** Contents (continued): Products and condiments based on fermented soybeans (continued): Tuong (an Annamese condiment that can replace nuoc mam or fish sauce; preparation with rice or corn/maize as described by Bui), Tao-yu (a condiment widely used in China and Japan, as described by Prinsen Geerlig; preparation, properties, chemical composition).

6. Confectionery products (*Produits de confiserie*): Sweet soya preserves made from whole soybeans (*Confiture de soja*, such as soy-based *crème de marron*, a chestnut cream), soya powder (two types are made at Li's plant: one by drying soy pâté and one from roasted soybeans), soy chocolate.

7. Soya used as coffee (a table shows the composition according to Kornauth). 8. Ferments or starter cultures for fermentation: Kiu-tsee (a special ferment from Canton described by M. Daby de Thiersant), lactic ferments (fermented soymilks).

Industrial uses of soybeans: Uses of the oil to make soap, wax candles (*bougie*), paint, or artificial rubber. Uses of the protein (*caséine de soja*) to give products resembling those made from milk proteins: sojalithe or soy stone resembling lactite, insulators for electrical apparatus, soy glues, etc. Illustrations (line drawings, p. 305) show cellular elements of different soya confections. Address: 1. Conseiller de 1ere classe au Ministère de l'Agriculture de la Chine; 2. Ingénieur agricole (G.).

476. Suyama, Kenei. 1912. Miso chû no jiasutaaze no bunryô ni suite [On the diastase of miso]. *Seikai Geppo* No. 364. p. 236-39. June. [Jap]
Address: Infectious Disease Research Lab. (Densenbyô Kenkyujo Kagakushitsu, Jisen Igakushi).

477. Li, Yu-ying; Grandvoinnet, L. 1912. *Le soja: Sa culture. Ses usages alimentaires, thérapeutiques, agricoles et industriels* [The soybean: Its culture. Its food, therapeutic, agricultural, and industrial uses]. Paris: Augustin Challamel (Rue Jacob 17). 150 p. Illust. Index. 25 cm. Translated into French and expanded from the Chinese edition, published by la Société Biologique d'Extrême-Orient (1910). [151 ref. Fre]

• **Summary:** One of the earliest, most important, influential, creative, interesting, and carefully researched books ever written about soybeans and soyfoods. Its bibliography on soy was larger than any published prior to that time. It was first published as a series of eight articles in *Agriculture Pratique des Pays Chauds (Bulletin du Jardin Colonial)* from September 1911 to April 1912. Before being published as a book, it was revised slightly by adding a table of contents at the back, dividing the material into 5 parts with 19 chapters, and adding several photos (p. 16-17), a world map showing the distribution of soybean cultivation (p. 21), and an interesting 2-page table (p. 66-67).

Contents: The soybean: Origin and history. Part I: Soybean culture. 1. Species and varieties of soybeans: Botanical characteristics, species, varieties (Chinese, Japanese, Indian, Indochinese, Hawaiian, USA, European). 2. Needs of the soybean: Climatic, geographical area of the soybean by region worldwide, agrological/soil needs, fertilizers, soil preparation, the place of the soybean in crop rotations. 3. Soybean seeds: Study of seeds (by weight, by germination rate, selection of seeds), time of planting, plant spacing, depth of seeding, rate of seeding per hectare, method of seeding (broadcasting, in rows, in mounds). 4. The soybean during its vegetative stage: Germination, transplanting, types of care (e.g., second dressings), irrigation, flowering and fruiting, enemies of the soybean (e.g., insects). 5. Harvest of soybeans: Time for harvest (forage or grain), methods of harvesting (forage or grain; mechanical mower), threshing (use of machine), yields of soybeans (forage and grain in various countries, ratio of seeds harvested to straw is about 1 to 2, yield of nutrients). 6. Fixation of atmospheric nitrogen by soybeans, and improvement of the soil. 7. The soybean in mixed cultures and alternate rows: With corn, cowpeas, rice, sweet sorghum, or millet.

Part II: Chemical composition of the soybean. 1. Composition of the plant: Minerals in the leaves and total plant. 2. Study of the seed: Composition, chemical composition, microscopic comparisons, table of analyses by 28 previous researchers, albumins, sugars, starch, dextrin or dextrine, diastase, lipids, ash/minerals.

Part III: The soybean as human food and animal feed. 1. The soybean as feed for animals: Green forage and hay. 2. The soybean in human feeding: From the viewpoints of physiology, economy, and gastronomy. The role of soya in

special diets: Vegetarianism, remineralization, diabetic, and lactose intolerant.

Part IV: Food products based on soya. 1. Soymilk and its derivatives: Soymilk (Methods of manufacture, Chinese and modern at l'Usine de la Caséo-Sojaïne, nature and properties [physical and chemical] and composition of the milk, action of ferments and diastases (enzymes) on the milk, uses of the milk, the residue from the soy dairy [okara], condensed soymilk, powdered soymilk, fermented soymilk (kefir, yogurt, etc.)), tofu (called Caséo-Sojaïne, or fromage de soya; methods of production, coagulants, yield of tofu, storing tofu, composition and comparison with various meats, digestibility, culinary preparations made from tofu (smoked tofu, tofu pâté, tofu sausages)), Soy casein (food and industrial uses). 2. Soy flour and its derivatives: Soy flour, soy bread, wholemeal bread, other products based on soy flour (as biscuits and cakes for diabetic diets). 3. Soy oil and its by-products: Soy oil, physical and chemical properties, usage, residue of the oil mill: the cake, price, uses. 4. Use of the soybean as a legume: Whole soybeans (composition and digestibility), soy sprouts (*germes de soja*), green vegetable soybeans (*le soja frais*). 5. Fermented soy condiments: Solid condiments from Japan: Tokyo natto (*Le Tokio-Natto*) and Ping-Ming natto or tao-tche (*Le Ping-ming-Natto*; soy nuggets with salt, ginger, orange rind, etc. A similar product is made in China and called tao-tche). Paste condiments: Miso (four types and composition), tao-tjung (Chinese miso). Sauces: Shoyu (its production, varieties, properties, composition), chiang-yu (*tsiang-yeou*), ketjap [kechap, from Java], tuong (from Annam, with rice or corn), tao-yu (widely used in China and Japan, described by Prinsen Geerligts). 6. Confectionery products: Comparison with chestnuts, roasted soy flour to replace chocolate. 7. Soy coffee (with analysis by Kornauth). 8. Special fermented products: Kiu-tsee (a special commercial ferment from Canton described by Thiersant), fermented soymilks.

Part V: Industrial uses of soybeans. Oil based: soap, wax candles (*bougie*), and paint oils. Protein based: sojalithe or soy stone which corresponds to lactite, insulators for electrical apparatus, glue, etc. Conclusion. Addendum (*Complément*) to Part III, Chapter 1: Soybean straw and stems. Composition of various seeds, including soybeans. Soy flour. The cakes from oil mills. Soymilk and the cake from soy dairies (*tourteau de laiterie*, okara).

A very interesting table (p. 66-67, which does not appear in the original 8 articles) shows earlier nutritional analyses of the composition of soybeans by Steuf (from Hungary, Mongolia and China), Schroeder, Caplan, Pellet (from China, Hungary, Etampes), Muntz, Nikitin (black soybeans from Russia, 2 samples), Lipski [Lipskii] (yellow, from Russia), Giljaranski (yellow from Russia, China and Japan; black from China and Japan; green), König (*Hispida platycarpa* black, Tumida yellow, brown and black), Prinsen

(white from Java and China), Goessmann, Kellner, USDA, Chemiker Zeitung (white from Java and China, 29 Jan. 1896), Scuff (misomame; miso soybeans), Zulkovski (yellow from China, reddish brown from Mongolia), Institut Agr. de Vienne (Austria; yellow from Vienna, reddish brown from Tirol), Ecole Imp. et Roy d'Ag. Hong (yellow from Mongolia and China, reddish brown from China), Chez M. Olivier Lecq (from Moravia), Lechartier (Etampes and black), Joulie (yellow), Stingl and Morawski, Bloch (yellow, green, and black), Balland, Cavendish Evelyn Liardet (yellow, brown, green, black, and white), Jardin Colonial (Laos, Tonkin, China), Aufray (Tonkin, Yun-nan), Homes Laboratory (black from China, or white). Photos and illustrations are the same as those referenced in individual sections of the book, except for the following: A field of soybeans (p. 16). A soybean plant growing in Europe (p. 17). Color illustrations appear facing pages 12, 22, and 64. Address: Li is from Societe Biologique d'Extreme-Orient (Chine). Grandvoinet is from Ingenieur Agricole (G).

478. Nishimura, Torazô. 1912. Shôyu oyobi miso ni kansuru kenkyû seiseki hôkoku [Results of studies on shoyu and miso]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 7(4):1-8; 7(5):5-14; 7(6):16-24. [Jap]

479. Aki Shokai (Aki Co., Inc. (The)). 1912. The Aki Co. (Ad). In: Nichibei Shinbun-sha. 1912. *Nichi-Bei Nenkan [Japanese-American Yearbook. No. 8]*. p. [C-41]. [Eng; jap]
 • **Summary:** Ad (full page). The top ¼ of this ad is given in English. This company sells various goods including (in Japanese) miso and shoyu [soy sauce]. The company also has a Fresno branch at 1505 Kern St., Fresno, California. An illustration shows the face of a Tengu, a long-nosed mythological creature or goblin. Mock Joya (1960, p. 523) states: "The Tengu is the most widely feared of traditional superhuman monsters. It is known to abduct young women, kidnap little children, and do other mischief but at the same time, much superhuman power of punishing the bad and helping the good is attributed to it." It is part bird and part human, and is able to fly at terrific speeds. "It is dressed in a costume similar to that worn by *yamabushi* or mountain Buddhist priests... All Tengu live in high wooded mountains, far from villages."

This ad also appears in the 1913 yearbook. Address: 1122-1130 4th St., Sacramento, California (P.O. Box 258).

480. Giles, Herbert Allen. 1912. A Chinese-English dictionary. 2nd ed., revised & enlarged. 2 vols. Shanghai, China: Kelly & Walsh, Ltd.; London: Bernard Quaritch. 33 x 26 cm. Reprinted in 1964, 1978. [4 ref. Eng; chi]
 • **Summary:** These two massive volumes, each weighing about 9½ lb, contain more than 1,800 pages and 13,848 Chinese characters. Contents of Vol. I: Part I. By the same author (25 books). Dedication. Preface. Extracts from

preface to first edition. Dialects (The romanized pronunciation of each character is given in Cantonese, Hakka, Foochow, Wênchow, Ningpo, Peking, Mid-China, Yangchow, and Ssuch'uan {Szechwan} dialects, as well as in Korean, Japanese, and Annamese, each being distinguished by its initial letter). Tables: Insignia of official rank, the family names, the Chinese dynasties, topographical, the calendar, miscellaneous (the Chinese digits, the Chinese decimal system). The 214 radicals. Radical index. Part II. A Chinese-English dictionary (p. 1-1711, in two volumes). Examples of soy-related characters:

Chiang (p. 149, No. 1220). "A soy made by mixing salt with bean flour. Sauce." Fourteen compounds using this character are given, including: Bean sauce, soy. Pickled bean curd. Bean sauce. Soy is of two kinds, the clear and the thick. Dry relishes. Soy [sauce] colour—a dark reddish drab. He won't use money for vinegar to buy soy.

Ch'ih (p. 249, No. 1996). "Salted fruits, etc., dried and used as relishes." Four compounds incl.: Salted beans. Soy, sauce.

Fu (p. 458, No. 3686). "Rotten; putrid; worthless." Eleven compounds and sayings include: Bean curd, see No. 11,417. Bean curd officials—a term of contempt applied to certain of the poorer classes of official servants who are compelled to feed largely on this cheap food. Also explained as flabby or unenergetic officials. A Mongol name for cheese. A kind of milk made from beans (milk + fu) [Note: Probably fermented tofu].

Huang (p. 635, No. 5124). Yellow. Compounds: Yellow beans.

Mao (p. 955, No. 7,679). "Hair, down, feather." But the word *Maodou* ("Hairy beans") = edamame does not appear here.

Ta (p. 1,294-96, No. 10,470). "Great." But the word "Great bean" = soybean does not appear here.

Tou (p. 1,412, No. 11,417). "Beans; pulse." See also No. 11,412. Thirty compounds, incl.: Bean-sprouts. Bean-curd. A cheap restaurant (a bean-curd restaurant). Like making bean curd—very tedious. A tongue like a knife, but a bean-curd heart (soft). Bean-cake. Bean oil. Big bean, black bean, or yellow bean = the soja or soya bean (*Glycine hispida*, Max.), used for making bean-curd, soy, oil, etc. Ground-nuts.

Yu (p. 1,661, No. 13,409). "Oil, fat, grease." 45 compounds incl. Oil, salt, soy, and vinegar = condiments generally. Sesamum-seed oil. Linseed. Wood oil. An oil factory. Oil dregs. But "bean-oil" = soybean oil does not appear here.

Note 1 (see p. vii): Other earlier important Chinese dictionaries are: Morrison (1819, English). Medhurst (1843, English). Williams (1874, American). Giles (1892, English). Giles lived 1845-1935.

Note 2. Unfortunately, the pronunciation of the compounds is not given (as in Mandarin). Address: Prof. of

Chinese, Univ. of Cambridge, Cambridge, England; and sometimes H.B.M. Consul at Ningpo.

481. *Giornale di Farmacia, di Chimica e di Scienze Affini (J. of Pharmacy, Chemistry and Related Sciences) (Torino, Italy)*. 1912. Sopra una reazione cromatica dell'olio di soja [On a chromatic reaction of soya oil (Abstract)]. 61:495-96. [1 ref. Ita]

• **Summary:** A summary of: Settimj, L. 1912. "Sopra una reazione cromatica caratteristica dell'olio di soja [On a chromatic or color reaction characteristic of soy oil]". *Annali del Laboratorio Chimico Centrale delle Gabelle (Rome)* 6:461-65. Note: This summary says that the author of the original article was "L. Settimi."

482. Hokubei Shokai. 1912. Hokubei Shokai (Ad). In: Nichibei Shinbun-sha. 1912. *Nichi-Bei Nenkan [Japanese-American Yearbook]*. No. 8]. p. C-11. [Jap]

• **Summary:** Ad (½ page). This company (an original manufacturer and importer, under special contracts) imports various goods including miso and shoyu. Only the address in California (1 line) is given in English. Address: 246 Jackson St., San Jose, California.

483. Kinokuniya Co. (The). 1912. The Kinokuniya Co. (Ad). In: Nichibei Shinbun-sha. 1912. *Nichi-Bei Nenkan [Japanese-American Yearbook]*. No. 8]. p. C-16. [Eng; jap]

• **Summary:** Ad (¼ page). The top ¼ of this ad is given in English. This company sells various goods including (in Japanese) miso and shoyu [soy sauce]. Address: 224 Jackson St., San Jose, California. Phone: San Jose 1276.

484. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1912. *Nichi-Bei nenkan [Japanese-American yearbook]*. No. 8]. 650 Ellis St., San Francisco, California. 652 p. Reprinted in 2001-02 in Tokyo by Nihon Tosho Senta. Series: Nikkei Imin Shiryôshû. Dai 5-kai [Collected Documents on Japanese Emigration. No. 5]. [Jap; eng]

• **Summary:** This book is read and numbered from "back to front" compared with typical English books; it is mostly (99%) in Japanese. The English-language title page reads: *The Japanese American Year Book*.

The book is divided into 14 parts, each numbered separately. Contents: (1) Table of contents (4 p.). (2) Ads (4 p.). (3) Maps (2 p.): Map of the United States. Map of California (1 p. each, in Japanese). (4) Graphs and charts on 4 unnumbered pages: (A) Bar graph: Population of Japanese living in the USA from 1869 to 1911 (some years missing before 1904). Three pie charts: (B) In which U.S. states do Japanese live. (C) Occupations of Japanese in USA. (D) Japanese in USA by gender. (E) Bar graph: Agricultural land use by Japanese by state. (F) Bar graphs of four things for 7 years. (5) Black and white photos on 16 unnumbered pages. (6) Advertisements (A-1 to A-18). (7) Front part (p.

1-150), including general information about America, Japanese in America, U.S. and agricultural census data, etc. (8) Ads from San Francisco. (9) Back part (p. 1-136). (10) Assorted ads (B-1 to B-66). Appendixes: (12) Table of contents of Directory of Japanese living in America (2 p.). Appendix 1. Japanese living in America, alphabetically by state, and within each state by city (p. 1-194). Appendix 2. Assorted California ads (p. C-1 to C-42).

(4A) Population of Japanese living in the USA from 1869 to 1911. 40 people in 1869, 55 in 1871, 95 in 1874, 270 in 1878, 420 in 1884, 500 in 1885, 1,200 in 1887, 2,300 in 1890, 6,000 in 1895, 35,000 in 1899, 53,761 in 1904, 61,034 in 1905, 75,534 in 1906, 89,575 in 1907, peak of 103,683 in 1908, 98,718 in 1909, 93,644 in 1911.

(4B, top pie chart) In which U.S. states do Japanese live: Total Japanese population in USA: 93,359. California 56,760. Washington 16,817. Colorado, Arizona, and New Mexico combined 5,083. Rocky Mountain region (Nevada, Utah, Idaho, Wyoming, Montana?) (*Sanchubu-gun*) 4,896. Oregon 3,795. Colorado 3,731. New York 2,178. Idaho 1,168. Utah 1,472 (see also p. 79).

(4C, lower left pie chart) Occupations of Japanese in USA: Total 76,000. Farm laborers 36,000. Domestic 8,000. Merchants and hotel workers 7,500. Farm owners (*Nogyo keiei-sha*) 5,000.

(4D, lower right pie chart) Japanese in USA by gender: Total 93,359. Adult men 76,378. Adult women 9,673 (so 7.9 men for each woman). Boys-American born 3,237. Girls-American born 3,195.

(5) How Japanese worked agricultural land in the USA (3 bar graphs) (5A) Far left graph: Too hard to read bottom of graph. (5B) Right graph: California. Colorado. Idaho. Texas. Washington. Utah. Oregon. Nebraska. New York. Florida. Other. (5C) 3rd graph (full page): Gives data from 1905 to 1911 for the following states: California, Colorado, Idaho, Texas, Washington, Utah, Oregon, Nebraska, New York, Florida, and Other. For each state gives the following: black bar = *genkin shakuchi* = rent the land; pay cash (most prevalent). White bar with wavy line = *buai kôsaku* = pay a percentage of the crop (#2 most prevalent). Dark diagonal lines = *ukeoi kôsaku* = a person asks you to cultivate and manage the land (#3 most prevalent). Light diagonal lines = *shoyû* = Cultivators owns the land (least prevalent).

In 1910, the value of miso and shoyu imported from Japan to San Francisco topped \$100,000. Also imports of soybean cakes (*daizu kasu*) from Manchuria increased rapidly (p. 75).

In 1910, the value of shoyu and pickles imported from Japan to Portland, Oregon, was \$11,094 (p. 77).

Basic information about how the survey was conducted, its scope, and reaction to it is given on pages 67, 73, 79-80, 90, 98-100, and 114 of this year book. The date on page 1 of the directory is Meiji 44 (1911), Oct. 1. On page 67 is a comparison of Japanese and American import and export

data—this data compiled by both countries. Pages 73 on show existing government forms that Japanese had filled out: Marriage certificate, birth certificate, divorce, military draft, type of business and business license, agricultural work details, visa, etc. These provided important basic information for the surveys of Japanese in California.

Pages 79, 80, and 90 contains data compiled by the *Nichibei* newspaper, perhaps a survey conducted by sending out forms, with follow-up by phone calls. The first Japanese laborers came into California in Meiji 2 (1869); A Dutchman named Snail brought a group of 40 Japanese workers. In Meiji 11 (1878) a census of Japanese in California was conducted. In Meiji 37 (1904) the first detailed research on Japanese in California was conducted.

The Directory shows Japanese companies making soyfoods in California, Utah, Oregon, and Washington. Address: San Francisco, California.

485. Okurasho Shuzeikyoku. 1912. Naikokuzei isan 55 [Domestic tax; treasure from the past 55]. Tokyo: Tokyozeimu Kantoku-kyoku. 161 p. 23 cm. [Jap]*
 • **Summary:** This is a Japanese government publication. Note: This is the 4th earliest book in WorldCat / OCLC that has miso as a subject or title word. Address: Japan.

486. Okurasho Shuzeikyoku. 1912. Naikokuzei isan 56 [Domestic tax; treasure from the past 56]. Tokyo: Tokyozeimu Kantoku-kyoku. 133 p. 23 cm. [Jap]*
 • **Summary:** This is a Japanese government publication. Address: Japan.

487. Pacific Trading Co., Inc. 1912. General importers and exporters (Ad). In: Nichibei Shinbun-sha. 1912. *Nichi-Bei Nenkan* [Japanese-American Yearbook. No. 8]. Unnumbered page near front. [Jap; Eng]
 • **Summary:** Ad (full page). The top 1/5 of this ad is given in English. This company imports various goods including (in Japanese) shoyu and miso. In English: “Rice, soy, canned goods, vegetable wax, dried vegetable, crockery, chilli pepper, dried ginger, etc.” “Cable address ‘PacTrad.’”

The company’s full-page ad near the front of the 1914 Yearbook (p. 1) shows company trademarks / logos for Kikkoman Shoyu and Higeta Shoyu. Address: 441-443 Clay St., San Francisco, California. Phone: Kearny 1263. Douglas 170. Home C 5456.

488. Settimj, L. 1912. Sopra una reazione cromatica caratteristica dell’olio di soja [On a chromatic reaction characteristic of soy oil]. *Annali del Laboratorio Chimico Centrale delle Gabelle (Rome)* 6:461-65. (Chem. Abst. 7:908). [Ita]
 • **Summary:** The soybean seed (*semi di soja*) is furnished by the plant *Soja hispida*, which is a member of the legume family. In Japan, since ancient times, the seeds of the

soybean have been used to make miso and shoyu. In the United States, England, and Germany the soybean is used mostly as a source of oil, of which it contains 13-19%. During the past year, soy oil in Italy (*dell’olio di soja in Italia*) has assumed a new importance; it is coming to be used mainly for the manufacture of soaps but also for edible use, mixed with the oil of other seeds and olive oil. The Settimi Test is a color test which has been proposed for use with vegetable oils, including soy oil. On shaking together a mixture of 5 c.c. of soya bean oil, 2 c.c. of CHCL₃, and 3 c.c. of a 1:50 aqueous solution of uranium nitrate, a distinctly yellow emulsion is obtained. This yellow color is permanent. With sesame (*sesamo*), cottonseed (*cotone*), peanut (*arachide*), rapeseed (*colza*) and maize (*maiz*) oil, a white emulsion results. Olive oil gives a greenish tint, sometimes also a yellowish tint like that of an oil mixed with a little soya oil.

Note 1. This article was summarized in *Chemische Umschau auf dem Gebiete der Fette, Oele, Wachse und Harze* (1913, p. 61), *Pharmazeutische Zentralhalle für Deutschland* (1913, vol. 54, p. 522), and *Year-Book of Pharmacy* (1913, p. 107).

Note 2. This is the earliest Italian-language document seen (Sept. 2006) that mentions soy oil, which it calls *olio di soja*.

Also discusses: Sesame oil, peanut oil, olive oil, corn oil, and colza oil. Address: Rome, Italy.

489. Winkler, Hubert. 1912. Botanisches Hilfsbuch fuer Pflanze, Kolonialbeamte, Tropenkaufleute und Forschungsreisende [Botanical guidebook for colonial settlers and officials, buyers of tropical goods, and explorers]. Wismar: Hinstorffsche Verlagsbuchhandlung. 322 p. See p. 240-41. [1 ref. Ger]
 Address: Privatdozent an der Universitaet Breslau [Germany].

490. *New York Times*. 1913. Latest customs rulings. Seaweed is not shellfish—Amasake assessed as miso. Jan. 28. p. 13.
 • **Summary:** “The Board of United States General Appraisers yesterday overruled the Asia Company, who contended that bottled seaweed could be duty free under the Tariff act of 1909 as shellfish. The commodity was assessed by the Collector at 40 per cent ad. valorem under Paragraph 252 as prepared vegetables.”

“Amasake, a Japanese beverage imported by Okada and Ischida [Ichida], was properly assessed at 40 per cent. ad valorem under Paragraph 252 of the present law as being a product similar to miso. Amasake is composed of rice yeast [koji], combined with boiled rice.”

Note 1. This is the earliest English-language document seen (April 2004) that uses the term “amasake” to refer to amazake.

Note 2. This is the earliest document seen (April 2004) showing amazake in the United States.

491. Granato, L. 1913. A soja [The soybean]. *Sao Paulo Secretaria de Agricultura, Comercio e Obras Pulicas. Boletim de Agricultura, Series 14. No. 3. p. 159-67. March. Series XIV. [Por]*

• **Summary:** Contents: Names of the soybean: Scientific and in various foreign countries. Botanical characteristics. Soybean cultivation: In Russia, France, Italy, Austria. Harvest and yield: In Italy, Hungary, France, in Brazil at the Agronomic Institute of Campinas (*instituto Agronomico de Campinas*) where Dutra reported yields of 2,200 to 2,300 liters/hectare. The soybean as a food: Nutritional composition and food value of the seeds of varieties analyzed by König, of varieties cultivated in 1899 at the Agronomic Institute of Campinas and analyzed by Mr. R. Bolliger. Soja as a forage crop. Uses of the soy bean (esp. Japan and China): Miso, tofu (a type of cheese {*queijo*} called *To-fu*), shoyu, koji, soy flour.

Three bar graphs (p. 165-66) compare the protein (*albuminoides*), oil and fat, and carbohydrate content of the soybean with those of other major foodstuffs (of both animal and vegetable origin, such as common beans {*feijao*}, beef, eggs, wheat, etc.). Soybeans have the highest content of protein, and of oil or fat, of all foods with which they are compared.

492. Takahashi, Teizô; Abe, Goro. 1913. Preliminary notes on the chemical composition of miso. *J. of the College of Agriculture, Tokyo Imperial University* 5(2):193-98. March. Published in 1908 in *Tokyo Kagaku Kaishi* 29(2). Feb. [5 ref. Eng]

• **Summary:** This article begins: “‘Miso’ is a food very common in Japan. The raw materials used in making it are soy beans, rice or barley, common salt, and water. In preparing ‘Miso,’ rice or barley is changed first into ‘Koji’...”

A full-page table compares the chemical composition of Hatsuchô-miso [Hatcho miso], Sendai-miso, and Inaka-miso, including amino acid content. “Assuming 37.5 grams to be the least quantity daily consumed per head and that 30 million out of the 50 millions of the whole population eat ‘miso’ every day, the annual consumption of ‘miso’ would amount to nearly 45 million kilograms.”

Note: This is the earliest document seen (March 2009) that mentions “Hatsuchô-miso” [Hatcho miso]—a type of miso made with soybean koji. Address: Japan.

493. Woodhouse, E.J.; Taylor, C. Somers. 1913. The varieties of soy beans found in Bengal, Bihar, and Orissa and their commercial possibilities. *India Department of Agriculture, Memoirs. Botanical Series* 5(3):103-76. March. 4 plates. Also published as a book in Calcutta by Thacker,

Spink & Co. and in London by W. Thacker & Co. 28 cm. [15 ref]

• **Summary:** Contents: 1. Introductory. 2. Nomenclature. 3. Varietal characters of soy beans: Habit, foliage, pubescence, flower (morphology, pollination, extent of natural crossing), pods, seeds (morphology), seeds (composition; black, yellow, and chocolate seeded varieties grown by the authors from seed obtained in 1909; the back varieties contained significantly more nitrogen/protein and less oil), maturity, diseases. 4. Description of types: *Kala Bhetmas, Safed Bhetmas, Lal Bhetmas, Barmeli Bhetmas, Nepali Bhetmas* (obtained from Kalimpong and tested at Sabour in 1911). 5. Distribution. 6. Cultivation. 7. Yield. 8. Price. 9. Uses: Food-stuff, bean sauce (soy, or shoyu), chiang or miso, tou-fu (tofu), soy beans as a green vegetable, oil (for use in England in soap-making, or in China “as an illuminant, as a substitute for lard in cooking, though it is inferior to rapeseed and sesamum oil for this purpose, as a lubricant for greasing cart axles, or for waterproofing cloth”), cake and flour. 10. General conclusions.

“In 1909 the survey work on the crops of Bengal was commenced, and in July of that year a number of trial plots of the chief pulse crops of the Province were sown for identification and field study. Among these were three samples of *Bhetmas*, of which one sample of black-seeded *Bhetmas*, received from the Settlement Officer, Bhagalpur, was found to be pure for seed characters... All the plots did well and were identified as varieties of the Soy Bean, but in October it became apparent that the black-seeded type differed from the other two in having darker bullate leaves and a more prostrate habit...”

“In 1910 the seed of the single plants which had been analysed was sown together with some samples obtained by Mr. A.C. Ghosh from the Kurseong bazar [bazaar]... a distinctly earlier black seeded form was obtained from a plot (E256 of 1910) grown from seed collected at the Bankipur Exhibition. The trial plots of the seed from Kurseong failed.”

“In 1911... the success of the plots of the acclimatized American varieties induced us to exchange seeds of the Bengal types with Mr. Piper, of the United States Plant Industry Bureau, who kindly supplied us with seed of the varieties, Barchet, Duggar, Haberlandt, Hollybrook, Mammoth, Pekin [Peking], Pingshu. Another attempt was made to cultivate at Sabour the varieties grown in the Sikkim Himalayas, and plots of the Nepali, Barmeli, black seed, greenish yellow seed and chocolate seed varieties were obtained from Mr. Goodwin, Superintendent of the Kalimpong Homes Farm, and grown successfully at Sabour” (p. 104-05). Note 1. This is the earliest document seen (Sept. 2004) that spells the soybean variety named “Peking” as “Pekin.” This spelling also appeared in Cuba in 1920 (3 documents), in Argentina in 1922, and in the United States in 1925 (in Alaska, see Georgeson 1925).

Concerning seed morphology (p. 114-15): The weight of 100 seeds in some of the American varieties such as Barchet, Pekin and Pingshu have remained approximately constant, whereas others, such as Duggar, Hollybrook and Mammoth have decreased in weight more or less considerably during the past season. The Nepali type has decreased in weight from 24.4 grams to 12.8 grams per 100 seeds. The variation in weight per 100 seeds in the case of varieties cultivated in new localities would appear to give a good indication of the adaptability of a variety to its new environment."

The authors record the results of a large number of selection experiments which they have carried out with a view to obtaining early-maturing types rich in oil, and also deal briefly with the cultivation and uses of soy beans.

Concerning uses (p. 138): "In Bengal, soy beans are used very little for food as they are said to be too heat producing. It is usually taken after frying over a heated sand bath as *bhunja*, but it is also heated, crushed, and then used as *dal*, and also as *larua* mixed with *gur*." In the "Soya Bean of Manchuria" (1911), Shaw states that soy beans can also be used to make bean sauce or shoyu, chiang or miso, and tou-fu (tofu). They can also be used to make oil, cake, and flour.

"General conclusions (p. 140): At the present time, Soy Beans are grown to a slight extent only in the Darjeeling hills and to no appreciable extent elsewhere although satisfactory yields have been obtained in the experiments conducted by the Agricultural Department in both these areas. We may ascribe the present unpopularity of the crop to the following reasons. For export the price offered in Calcutta is not yet sufficiently attractive; as a food-stuff it is more potent than the ordinary pulses to which the people are accustomed; as a crop for growth in the plains it has the disadvantage of occupying the land during two seasons, it may suffer from waterlogging during the rains, and requires plenty of moisture in October, and it harbours rats during the last two months of its growth. These objections do not appear to us by any means unsurmountable [insurmountable]... The use of Soy Beans for food could be extended if the educated classes once appreciate its value as an addition to a rice diet, and experiment with its preparation for food on the lines suggested."

"Its cultivation in the hills would probably be largely extended on the present lines as soon as the price reached a satisfactory figure. It only remains to say that our work is being continued on the lines indicated in this paper with a view to isolating early maturing types possessing a high yield of oil."

Contains many tables, mostly showing the composition of various black, yellow, and chocolate soy beans and the history of descendants of various singly selected plants. Black soy beans contain on average 6.72% nitrogen and 13.52% oil. Yellow soy beans contain 5.61% nitrogen and

16.99% oil. Note 2. Therefore black soy beans contain 19.8% more nitrogen [protein] and only 79.6% as much oil as yellow soy beans. Chocolate-colored soy beans contain 5.57% nitrogen (the least of all three types) and 17.13% oil (the most of all three types).

A table titled "Life periods of American varieties of Soy Beans grown at Sabour, 1911" (p. 124) gives information on eight varieties: Barchet, Duggar, Haberlandt, Hollybrook, Mammoth, Pekin, Pingshu, and Riceland. For example, Duggar: Origin: S.P.I. No. 17268C. Date of planting: July 12, 1911. Date of harvesting: Oct. 11. Life period at Sabour: 91 days. Life period in the U.S.A.: 110-120 days.

Another table titled "Yield of the types of soy beans found in Bengal, Bihar, and Orissa lists 8 varieties, and for each: Where grown, dates of sowing, area sown, approximate yield in lbs/acre, corresponding yield (on unmanured land) in mds., srs., and chtks. [mds. = maunds; 1 maund = 82.28 pounds or 37.32 kg; srs. = seers; 1 seer = 2.05 pounds; chtks. = chittaks or chittacks or chattaks or chattacks; 1 chittak [also chattak or chattack] = 1/16 seer = 900 grains = about 2 ounces], and remarks. Two trials gave yields of more than 2000 lb/acre (2,189 lb from the variety Nepali in Kalimpong, and 2,164 lb for a Chocolate variety at Bankipur Farm). Seven additional trials gave yields of 1,000 to 1,400 lb/acre.

Photos on unnumbered pages near the end show: 1. Type I—"Late Black-seeded" soybean variety, photographed 28 Oct. 1911. 2. Type V—Barmeli variety. 3. Type VI—Nepali variety on left, and Type IIIa—"Upright long branched greeny yellow seeded variety on right." 4. Barchet variety, photographed 30 Oct. 1911.

Four graphs on the last page show the distribution of chocolate, black, and yellow soybeans according to both their nitrogen and oil contents.

Note 3. This is the earliest document seen that clearly refers to the cultivation of soybeans in Bengal (probably later Bangladesh). Address: Economic Botanist to the Government of Bihar and Orissa, India.

494. Winkler, Gustav. 1913. Die Sojabohne: Vortrag gehalten in der Monatsversammlung des Gartenbau- und Verschoenerungsvereins Fechenheim [Mainkur] am 17. April 1913 [The soybean: Lecture presented at the monthly meeting of the Gardening and Beautification Society of Fechenheim {Mainkur} on 17 April 1913]. Frankfurt am Main, Germany: Published by the author. 14 p. [Ger] Address: Mainkur bei Frankfurt am Main, Kreis Hanau, Waldstrasse 55.

495. Winkler, Gustav. 1913. Die Sojabohne: Vortrag gehalten in der Monatsversammlung des Gartenbau- und Verschoenerungsvereins Fechenheim-Mainkur am 17. April 1913. 2 Auflage [The soybean: Lecture presented at the monthly meeting of the Gardening and Beautification

Society of Fechenheim-Mainkur on 17 April 1913. 2nd ed.]. Fechenheim bei Frankfurt am Main, Germany: Published by the author. 16 p. 22 cm. [Ger]*
Address: Mainkur bei Frankfurt am Main (Germany).

496. Heyne, K. 1913-1917. *De nuttige planten van Nederlandsch-Indië* [The useful plants of the Netherlands Indies. 3 vols.]. Batavia [Jakarta]: Printed by Ruygrok & Co. Vol. 1, 250 + xxvii p. Vol. 2, 349 + xxxix p. Vol. 3, 402 + xlviii p. See vol. 2, p. 242-43, 316-22. See also 2nd ed. 1927 and 3rd ed. 1950. [12+ ref. Dut]

• **Summary:** Contains detailed information on soybeans in Indonesia, including various local names, soybean production in Indonesia by province from 1918-1925 (the top producers in 1925 were Madoera and Madioen; total production grew from 222,426 to 260,125), soybean culture, imports, exports, tempeh, tofu (tao hoe), tao koan, tao tjo (Indonesian miso), and soy sauce (ketjap). Also discusses ontjom and dagé made from peanuts.

Note: This is the earliest document seen (April 2001) that contains the term *tao koan*. Address: Chef van het Museum voor economische botanie te Buitenzorg (Bogor).

497. **Product Name:** Miso.

Manufacturer's Name: Marumi Miso Seizo-sho.

Manufacturer's Address: 2113 S. Vermont Ave., Los Angeles, California. Phone: 71525.

Date of Introduction: 1913.

New Product–Documentation: Nichibei Shinbun-sha. 1913. *Nichi-Bei Nenkan [Japanese-American Yearbook]*. Directory entry p. 126. Also in 1914, p. 128. But the address is now 607 N. Alameda St. Phone: A 2818. Note: This is the 2nd earliest known miso manufacturer in Los Angeles or in California (one of two).

498. **Product Name:** Miso.

Manufacturer's Name: Rafu Miso Seizo-sho [Los Angeles Miso Manufacturing Co.].

Manufacturer's Address: 6079 N. Alameda St., Los Angeles, California. Phone: A 2818.

Date of Introduction: 1913.

New Product–Documentation: Nichibei Shinbun-sha. 1913. *Nichi-Bei Nenkan [Japanese-American Yearbook]*. Directory entry p. 126. Note: This is the 2nd earliest known miso manufacturer in Los Angeles or in California (one of two). "Rafu" is the Japanese nickname for Los Angeles.

499. Asahi Shokai K.K. 1913. Asahi Co., Inc. (Ad). In: Nichibei Shinbun-sha. 1913. *Nichi-Bei Nenkan [Japanese-American Yearbook]*. No. 9]. p. 31 (near end). [Eng; jap]

• **Summary:** Ad (¼ page). The top ¼ of this ad is given in English. This Japanese company imports many items, including miso and shoyu. Ad also in the 1914 Yearbook, p.

40 in last block of ads near end of book. Address: P.O. Box 1057, Oxnard, California. Phone: Home 116. Red 322.

500. Friedenwald, Julius; Ruhrah, John. 1913. *Diet in health and disease*. 4th ed. Thoroughly revised and enlarged. Philadelphia, Pennsylvania: W.B. Saunders Co. 857 p. Illust. 24 cm. [4 soy ref]

• **Summary:** The section titled "The soy bean" (p. 124-26) states: "This bean (*glycine hispida*), sometimes called the soja bean, is an annual leguminous plant extensively used as a food in China and Japan. Until recently it has been regarded as a botanical curiosity in the Occident. It has recently been extensively used in America as a forage crop and to improve the soil if plowed under... There are a large number of different varieties, which vary in size, shape, color, and length of time they take to mature. Some are grown exclusively for the oil they contain, and it is used for culinary, illuminating, and lubricating purposes. The light-colored beans are eaten in soups, and the pods are sometimes picked green, boiled, and served cold with a sprinkling of soy sauce. The green varieties are often pickled in brine and eaten moist or dried with meals as appetizers; the same varieties are often sprouted, scalded, and served with meals in winter as a green vegetable. The bean forms the basis of the so-called soy sauces, used as a condiment all over the world. The Oriental races most frequently eat the bean, in more or less cheesy-like foods, which are prepared from it. The most common of these are natto, tofu, miso, yuba, and shoyu. Natto is a sort of bean cheese made by boiling the beans until they become soft and then placing the resulting mass in a warm cellar where it ferments. Tofu is made by soaking the beans in water, crushing between millstones, and boiling in about three times their bulk of water. The protein is precipitated and the resulting cheese eaten. The white milky liquid of the above has nearly the composition of cows' milk, and tastes something like malt. It may be used in infant feeding to advantage (see same).

"Americans may eat the beans in numerous ways described under the head of soy bean cookery in the recipes at the end of this book. The bean is of particular value in diabetic diets (see same). It may be used to increase the protein of the diet.

There are variations in the composition of the different varieties." A table shows the chemical composition of yellow soy beans grown in the USA, both as is and calculated on a water-free basis. "The Cereo Company of Tappan, New York, have made a soy bean flour which is useful." Its composition is given. "The percentage of protein in this flour is almost one-third greater than the percentage of protein in the whole beans. This is caused by removing the coarse fibrous hulls which contain little protein.

"Vegetable food of such composition certainly is remarkable when compared with round beef, medium"—

whose composition is given.

Soy flour can be used as a gruel, in broths, and in making biscuits. A table (p. 126) shows the "Composition of fresh and dried legumes (incl. soy beans, cow peas, chick-peas, peanuts) with that of other foods" (Based on Abel, Farmers' Bulletin No. 121 [1900, p. 17]).

The section on "vegetarianism" (p. 130-31) is the same as that in the 1909 edition (p. 113-14).

In the chapter on "Infant feeding," the section on "Other food for infants" has a subsection on "The soy bean" (p. 297-98) which begins: "In certain conditions the soy bean... is of great value. In cases when milk is badly borne, in certain forms of intestinal disorders, in diarrhea, and especially in the convalescence after diarrhea, in certain cases of marasmus and in malnutrition, the soy bean flour, properly used, is of great value. Each ounce contains 13 grams protein and 120 calories." A table shows the composition when mixed with various amounts of water. Recipes for making gruels are given.

In the chapter on "Diet in disease," in the section titled "Diseases in which diet is a primary factor," is a subsection on "The soy bean" (p. 592) states: "The bean contains about 8 per cent. of sugar and no starch, and furnishes a large amount of available protein and fat." "A patient on a strict diabetic diet, who is excreting a certain amount of sugar, will excrete less sugar when the soy bean is added to the diet. It seems to be of particular value in severe cases. In addition to this action, it is a very valuable food, both on account of its nutritious properties and owing to the fact that it may be prepared in a number of different ways, and so serves to vary the diet."

In the section on "Diabetic Foods" (p. 601-02) is based on Winton (1906) and contains the same information, including that about The Health Food Company of New York.

In the chapter on "Recipes" is a section on "Bread" (p. 740-41) which includes whole-wheat bread, zwieback, and bran muffins for constipation. The same chapter has a section on "Soy bean cookery" (p. 766-69) with the following recipes: Introduction, gruels, broths, muffins, nut-cakes, soy bean cakes, breakfast food (like oatmeal), pancakes, soy bean cheese ("In Seattle, Washington, and other places in the West we are informed that tofu is made by the Japanese and sold to the Oriental residents"). Goff (1911) offers the following: Grilled soy bean [dry roasted soynuts], [whole] soy beans with butter, soy beans au gras (fried with onions and fat), bread or cakes of soy beans.

Note: Julius Friedenwald lived 1866-1941. John Ruräh lived 1872-1925. Address: 1. Prof. of Gastro-Enterology; 2. Prof. of Diseases of Children. Both: College of Physicians and Surgeons, Baltimore, Maryland.

501. Iwakami & Co. 1913. Importers and wholesale dealers in Japanese merchandise (Ad). In: Nichibei Shinbun-sha.

1913. *Nichi-Bei Nenkan* [Japanese-American Yearbook. No. 9]. p. 1. [Eng; jap]

• **Summary:** Ad (full page). The top and bottom 1/5 of this ad are given in English. This company imports shoyu and miso from Japan. Address: 427-435 Commercial Street, San Francisco, California. Phone: Kearny 2447. Home C 2447.

502. Japan year book. 1913. Tokyo, Japan: Y. Takenob and G. Takeda (The Japan Year Book Office). 702 p. See p. 163-64, 230, 351, 356, 358, 438, 654, 659, 672, 690. [Eng]*

• **Summary:** In chapter 11, "Agriculture" (p. 155-77) is a table titled "Beans, sweet potato and potato (p. 163) which gives "Soy bean" production in Japan for 1906-1910 (in *koku*).

On page 164 we read: "The three daily articles of diet for all classes, viz. soy [sauce], *miso*, and *tofu* are manufactured from this bean..."

In chapter 15, "Industry," is a paragraph (p. 230) on the patented Suzuki process for brewing soy [sauce].

In Chapter 25, "Home trade" is a table (p. 351) titled "Prices of principal commodities in Japan," which includes prices for 1905-1911 in yen for soy beans (per *koku*), soy [sauce] (per *koku*), and miso (per *kwan*).

In Chapter 26, "Foreign trade" is a table (p. 356-58) titled "Imports" (in 1,000 yen). Under the heading "Staples articles of over yen 1,000,000" (p. 356) is given the value of soja bean imports for 1908-1912. Under the heading "Trade with China (p. 359) is given the value of imports of "beans" and of "oil-cakes" for 1906-1911.

In chapter 30, "Finance," is a paragraph (p. 438) titled "Tax on Japanese soy" [sauce].

In chapter 34, "Chosen (Korea)," a table (p. 654) on "Exports (in 1,000 yen), under the heading "Foreign trade" has data on beans and peas for 1906-1912. Under the heading "Agriculture" is a paragraph (p. 659) titled "Barley and soya bean," giving acreage and yield for soya bean (no year is specified) with the value (in yen) of exports to Japan in 1909.

In Chapter 35, "Taiwan (Formosa)," under the heading "Agriculture," a table (p. 672) titled "Agricultural products" has production data on "Beans and peas" (in 1,000 *koku*) for 1905-1909.

In Chapter 37, "South Manchuria," is a paragraph (p. 690) titled "The soya bean" which has information on South Manchuria's soya bean yield, [soya] bean-cake output, and amount exported. Address: Japan.

503. Jumelle, Henri L. 1913. Les cultures coloniales: Légumes et fruits. Deuxième édition [Crops of the colonies: Vegetables and fruits. 2nd ed]. Paris: Librairie J.-B. Baillière et Fils. 122 p. See p. 47-51. Illust. No index. 18 cm. [Fre]

• **Summary:** This is the 2nd volume of an 8-volume work. In Chapter V, "Vegetables," the section titled *Glycine*

hispidia Max. discusses soybeans and soyfoods.

Henri Jumelle lived 1866-1935. Address: Prof., Faculte des Sciences de Marseille [Marseilles], France.

504. Kin, Choshi. 1913. *Shōyu enkaku-shi*. ed. 3 [History of shoyu production. ed. 3]. Choshi, Japan. 186 p. First edition was 1909. 28 cm. [Jap]

• **Summary:** Contents: 1. Overview (p. 1): Shoyu as a special East Asian product, shoyu as superlative seasoning, relationship between shoyu and sauce, shoyu as an influence in life. 2. Origins of Japanese shoyu (p. 7): About Chinese jiang, Japanese shoyu in history, origin of the shoyu industry in Japan, trends and growth of shoyu production (output), the shoyu industry and taxation, household makers of shoyu and changes in home usage, the Japanese government's attitude toward shoyu, overseas demand for shoyu, the development of shoyu in the Kantō (Tokyo/eastern Japan) region.

3. Choshi shoyu (p. 117): Shoyu in the Kantō region, the shoyu makers guild in Choshi, the development of the shoyu-makers' union (or cartel) in Choshi and Noda, names and identification of the best quality shoyu brands, current varieties of shoyu, Choshi shoyu and raw materials (ingredients), Choshi shoyu and the local topography, Choshi shoyu and transportation, Choshi shoyu and microclimate, Choshi shoyu's trademarks and brands. 4. Higeta shoyu (p. 151): The origins of Higeta shoyu, how to judge good-quality shoyu, the raw materials for Higeta shoyu, a chemical analysis of Higeta shoyu, the handling of Higeta shoyu, shelf life (period of freshness) of Higeta shoyu, awards received by Higeta shoyu. 5. Conclusions (p. 174). A table (p. 35-36) shows national production statistics for shoyu for the years 1885-1910, including the amount and number of makers. Appendixes: 1. The reputation and names of Japanese shoyu in Europe (in English, French, and German) according to various early documents (p. 175). Historical documents in Asian languages about raw materials (soybeans and wheat) used for shoyu (p. 182).

Notes and observations by Mark Fruin: Kin Choshi was the pen name of Genba Tanaka XIII, the head of an important shoyu brewing family in Choshi during the Tokugawa and Meiji periods. Forty percent of the book is early shoyu history and 60% is the history of Choshi Shoyu-Higeta.

Yuasa shoyu appears to be the first true shoyu in Japan; it gradually separated from miso production. Yuasa shoyu was sold throughout Japan by Osaka merchants and it benefited as well from the political protection of the Daimyo of Wakayama. The Osaka shoyu trade developed gradually and it was not important until the 17th century. Yet shoyu developed somewhat independently in Western Japan (Yuasa) and Eastern (Noda and Choshi).

The earliest record of an Osaka merchant (one Komatsuya Ibei) handling Yuasa shoyu dates from 1535;

some 50 years later some Osaka merchants had certain ships earmarked for the exclusive task of carrying Yuasa shoyu to and from market, which by this time had spread from Osaka to the Inland Sea trade area.

In 1908 shoyu was the fifth most important export from Wakayama prefecture [to other parts of Japan]; there were 59 makers in a locally organized cartel producing 52,700 koku with a value of 850,000 yen.

Tatsuno shoyu began its history some 319 years ago (from the year 1594) when in 1594 a local farmer in the Tatsuno area, Yokoyama Gorobei, began to make sake as a sideline to his farming. Later he added shoyu to his household industries. In 1596 Yokoyama turned over his sake making activities to a branch household established for that purpose and concentrated his own efforts on farming and shoyu manufacture. By the late Tokugawa Period (1600-1868) the Yokoyama family sold its shoyu business to the Kataoka family and the latter merged with the Nakahara family in 1893 to form Kikuichi Shoyu.

Shodoshima shoyu began being made in the middle of the Tokugawa period. In 1882 production stood at 34,000 koku and in 1908 at 98,832 koku. In 1901 many of the various shoyu makers in numerous villages on the island amalgamated into a cartel and in 1908, the first corporation for making shoyu in Japan was formed. Later, three other forms merged to establish Marukin Shoyu. p. 35-36 gives Japanese national statistics for total shoyu production and the number of manufacturers each year from 1885 to 1910. In 1,176,535 units? were produced by 10,971 companies. In 1910 some 2,205,574 units were produced by 14,364 companies.

505. Marusan Joto Shiromiso. Renamed Marusan Miso Seizo-sho in 1920. 1913. Marusan Sweet White Miso (Shiro-Miso), Special Koji. 607-609 North Alameda, Los Angeles, California. [Eng; jap]

• **Summary:** Nichibeishinbun-sha. 1913. *Nichi-Bei Nenkan (Japanese-American Yearbook)*. Ad (full page), p. 27 near end of book. Our goods are the best (*Marui beppin*). Mr. Saburo Takasugi, owner. This company makes sweet white miso (*shiro miso*) and special koji, which it says are better than similar products imported from Japan. This ad also appears in the 1914 Yearbook, p. 28 near end of book.

A similar half-page vertical ad appears in the 1917 Yearbook (p. 31). "L.A. Miso Mfg. Co., 605-7-9 N. Alameda St., Los Angeles, California." Trade mark: Shows 3 horizontal lines in a circle ("Reg. U.S. Pat. Off."), pronounced either "Marusan" or "marumi" (the latter means "flavor" in Japanese). In Japanese is written (in big, bold characters). *Rafu Shiro-miso Seizō-sho. Takasugi Saburo. Shiro-miso seizō-sho.*

The Japanese American Directory. 1920. p. 274. Ad (¼ page), top right. The company name and address are written in English at the top of this ad: L.A. Miso Co., 607 N.

Alameda Ave., Los Angeles, California. But 80% of the ad is in Japanese. The large Marusan brand and logo (three horizontal lines in a circle) is at the top center of the Japanese portion. Phone: 12818. Making and selling shiro miso [sweet white miso]. The original maker of miso in the United States. Marusan Joto [high class] shiro miso and special koji. Note: This company (which now has only an English name) was one of two which began making miso in Los Angeles in 1913. Of the two, this company may very well started to make its miso first, and/or started to sell its miso commercially first. Sweet white miso takes less time to make than any other type of miso.

The Japanese American Directory. 1920. p. 296. Directory entry reads (all in Japanese): Marusan Miso Seizô-sho, 605 N. Alameda St. Phone: 12818. Also in 1921, p. 305. Ad (¼ page) all in Japanese. A huge Marusan logo fills the top half of the ad. The address is now given as 605 N. Alameda St. (607-609). Also in 1921 directory, p. 314. Also in 1922, p. 303 (½-page ad. At top of ad is written in English: "L.A. Miso Mfg. Co., 605-7-9 N. Alameda Street, Los Angeles, Calif." Large, bold Marusan logo below that. KATO Shigetaro is now owner), and p. 315 (directory). Also in 1923, p. 332 (ad) and p. 355 (directory). Also in 1924, p. 371 (impressive full-page ad. Founded in 1912 [but SC's earliest record is 1913]) and p. 394 (directory; new phone number: 826773). Also in 1925, p. S-15 (full-page ad; new phone number: VAndike 6773. Founded in 1912) and p. S-44 (directory; new phone number: VA 6773). Also in 1926, p. S-35 (directory). Address: Los Angeles, California. Phone: A 2818.

506. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1913. Nichi-Bei nenkan [Japanese-American yearbook. No. 9]. 650 Ellis St., San Francisco, California. 716 p. Reprinted in 2001-02 in Tokyo by Nihon Tosho Senta. Series: Nikkei Imin Shiryôshû. Dai 5-kai [Collected Documents on Japanese Emigration. No. 5]. [Jap; eng]

• **Summary:** This book is read and numbered from "back to front" compared with typical English books; it is mostly (99%) in Japanese. The English-language title page reads: *The Japanese American Year Book*.

The book is divided into 13 parts, each numbered separately. Contents: (1) Front matter (incl. how this book was created) (5 p.). (2) Table of contents, general (4 p.). (3) Table of contents, ads (4 p.). (4) Photos (black and white on 12 unnumbered pages). (5) Graphs and charts on 4 unnumbered pages: Three pie charts for 1912: (A) In which U.S. states do Japanese live. (B) Occupations of Japanese in USA. (C) Japanese in USA by gender. Two pie charts (D-E). Increase and decrease of Japanese population by gender. (F) Bar graph: Agricultural land use by Japanese by state. (G) Agricultural crops grown by Japanese. (6) Photo of the site to be of the Panama-Pacific International Exposition (1915) in San Francisco. (7) Two maps: Map of the United States.

Map of California (2 p.). (8) Advertisements (A-1 to A-18). (9) Front part (p. 1-152), including general information about America, Japanese in America, U.S. and agricultural census data, etc. (10) Ads (p. 1-16). (11) Back part (p. 1-142). (12) Ads (B-1 to B-64). Appendixes: (13) Table of contents for directory of places where Japanese live in America, by state, and within each state by city: In Japanese (2 p.). In English (2 p.). (14) Directory of Japanese living in America, interspersed with ads (p. 1-228). (15) Ads (p. 1-50). (16) Copyright page.

In a table (p. 57), one vertical line gives soybean production statistics in Japan from 1905-1909 (five year average): Area: 464,021 *cho* (1 *cho* = 2.45 acres; so 1,136,851 acres). Production: 3,766,962 *koku* (1 *koku* = 180 liters = 47.6 gallons = 308 lb = 5.13 bushels; so 1,932,452 bushels). Average yield 0.87 *koku/tan* or *tanpo*. Note: Something seems to be wrong with these soybean statistics. The yield of Japanese soybeans seems too low; only about 1-2 bushels per acre.

A table (p. 92) shows Japanese population in the top 8 U.S. states in 1912. There are 7 columns: Male adults, female adults, male children born in USA, male children born in Japan, female children born in USA, female children born in Japan, and total. The totals are: California: 58,555. Washington: 16,037. Colorado 3,556. Oregon 3,518. New York 2,002. Idaho 1,392. Utah 1,390. Montana 972.

Individual lines in various tables (p. 115-150) show tofu, miso and shoyu makers in the United States by state, and within California by city. There are 7 columns: Location, total no. of shops, no. of owners, investment (\$), sales (\$/year), workers, salary (\$/year). The number of tofu makers by state is: California 28. Utah (Ogden) 1. Idaho 2. Colorado (Denver) 2. Oregon 1. Washington 9. There are also 2 miso makers in Los Angeles and 1 shoyu maker in Oregon. Columns 1-2 are filled out for all entries, columns 3-4 for all California entries, and columns 5-6 for about half the California entries.

A table (p. 26-27) shows import tariffs on goods from Japan. These include: Soybeans \$0.45/bushel. Shoyu, miso, deep fried tofu pouches (*aburage*), dried frozen tofu (*Koyadofu*) and yuba 40% of their value, but a request is being made to change the shoyu, the two tofu products and the yuba to 20%.

The Directory shows Japanese companies making soyfoods in California, Utah, Idaho, Colorado, New York, Washington state, and Oregon. Address: San Francisco, California.

507. Paerels, J.J. 1913. Tweede Gewassen [Second crops]. *Oost-Indische Cultures* (Dr. K.W. van Gorkom's) 3:276-88. [11 ref. Dut]

• **Summary:** See Prinsen Geerligs (1913, vol. 3, p. 276-88). Address: Indonesia or Netherlands.

508. Prinsen Geerligs, H.C. ed. 1913. Dr. K.W. van Gorkom's Oost-Indische Cultures, opnieuw uitgegeven onder redactie van H.C. Prinsen Geerligs. Compleet in drie deelen [Dr. K.W. van Gorkom's East-Indian crops. New edition. 3 vols.]. Amsterdam, Netherlands: J.H. de Bussy. See vol. 3, p. 276-88. Illust. Index. 27 cm. [7 ref. Dut]

• **Summary:** In vol. 3 is a section on "Second crops (*Tweede Gewassen*)" (p. 243-91). Chapter 4 (*Hoofdstuk IV*) of that section is titled "Soybeans (*Soja*)" (p. 276-88). Contents: Origin and native land. The soybean plant: Botanical description (flowers, seeds, fertilization, germination), types and varieties, geographical distribution. Cultivation of soybeans: General instructions for growing, planting, manuring, diseases and pests. Production, trade, and use of soybeans: Tofu (*Tao-Hoe*), Chinese soy sauce (*Tao-Yoe*), soybean paste (*Tao-Tjong*), Tempeh, composition and value as a food (*samenstelling en voedingswaarde*).

Note: This is the earliest document seen (Feb. 2009) that contains the term *Tao-Tjong*, a term, and perhaps a product, that appears to be between *doujiang* (Chinese-style miso) and *tao-tjo* (Indonesian-style miso).

Photos show: (1) A soybean plant that bears black-seeded varieties (p. 277). A soybean plant that bears white-seeded varieties (p. 278).

Also discusses (in vol. 2): Peanuts (p. 227-41). Sesame seeds (p. 247-51).

Reprinted in Van Gorkom 1918, p. 839-51. Karel Wessel van Gorkom lived 1835-1919. Address: Amsterdam, Netherlands.

509. Tanaka Shoten. 1913. K. Tanaka Co. (Ad). In: Nichibei Shinbun-sha. 1913. *Nichi-Bei Nenkan [Japanese-American Yearbook]*. No. 9]. p. 43 (near end). [Eng; jap]

• **Summary:** Ad (¼ page). The top ¼ of this ad is given in English. This Japanese company imports many items, including sake, white rice, miso and shoyu. Address: 1531 Geary St., San Francisco, California. Phone: Filmore 2179. S 2947.

510. Grimme, Clemens. 1914. Die Sojabohne und ihre Verarbeitung zu Nahrungs- und Genussmitteln [The soybean and its processing for food and stimulants]. *Konserven-Zeitung* 15(1):1-3, 10-11. Jan. 2. [1 ref. Ger]

• **Summary:** The author discusses the many food uses of soybeans and how they are made and use, drawing heavily on *Le Soja* by Li & Grandvoinnet (1912). He notes that there is a steadily rising interest in soyfoods in almost all branches of the German food industry [perhaps in anticipation of World War I].

Foods made from natural [unfermented] soybeans include: Soymilk (*Sojamilch*), tofu (*Sojakäese*), frozen tofu (*Kori-Tofu*), soy flour (*Sojamehl*), soy bread (*Sojabrot*), soy confections (*Sojakonfekt*), soy chocolate

(*Sojaschokolade*), soy coffee (*Sojakaffee*), and green vegetable soybeans (*Soja als Gemuese*). Foods and seasonings made from fermented soybeans include: (1) Solid seasonings: Natto, and tao-tche (Chinese natto [sic, soy nuggets]); (2) Seasonings in paste form: Miso (4 types), and Tao-tjiung (*Doujiang*, Chinese miso); (3) Liquid seasonings: Shoyu (*Schoyou*), Tsiang-Yeou (Chinese soy sauce), Ketjap (Javanese soy sauce), Tuong (Annamite soy sauce, made with rice or corn), Tao-Yu (soy sauce made with black soybeans in China and Japan).

Note 1. This is the earliest German-language document seen (Oct. 2004) that mentions green vegetable soybeans, which it calls *Soja als Gemuese*.

Note 2. This is the earliest German-language document seen (Oct. 2003) that uses the term *Sojamilch* to refer to soymilk. As of Jan. 2009 *Sojamilch* is the modern German word for soymilk.

Note 3. This is the earliest German-language document seen (Jan. 2009) that uses the word *Sojaschokolade* to refer to soy chocolate. The German word for "chocolate" is *Schokolade*. Address: Dr.

511. Eddington, Jane. 1914. Economical housekeeping: More about soy beans. *Chicago Daily Tribune*. Feb. 4. p. 16.

• **Summary:** Because of its high protein content, the [whole dry] soy bean must be soaked for a long time then cooked gently for "several hours to reduce it to the required softness.

"It does not make as smooth a purée as the pea or peanut—in fact a rather granular one is obtained—but that nevertheless is palatable when dried over a hot fire, with a seasoning or butter, pepper, and salt if needed." We should manufacture "soy sauce from this bean—that sauce without which chop suey and many other Chinese dishes would not be what they are. In a government bulletin on the legumes we have a general description of how this is made." There follows a summary, with long quoted excerpts, of the section titled "The soy bean and its preparations" in: Oshima, Kintaro. 1905. "A digest of Japanese investigations on the nutrition of man." *USDA Office of Experiment Stations, Bulletin* No. 159. 224 p. See p. 23 on. Shoyu, tofu, miso and natto are discussed briefly.

512. Eddington, Jane. 1914. Economical housekeeping: Soy beans. *Chicago Daily Tribune*. Feb. 11. p. 11.

• **Summary:** It is called "the soy or soja bean." "In an English food magazine of two years back there is an interesting and very suggestive article, 'About the Soy Bean.' In the first paragraph it is said that medical men have been experimenting with it and writing about it for a year or so. Then it says:

"The soja (or soy) hispida is the only representative of a genus of leguminosae or the tribe papilionaceæ, and it has

been cultivated from time immemorial in Japan and China. It grows freely in tropical countries, and since 1878 it has been grown successfully in the warmer parts of Europe. There are a number of varieties of the soy bean, the difference lying in the size, shape, and color of the seeds. The Japanese is the most highly esteemed and in appearance it is a good deal like the common dwarf kidney or French bean...

“The bean, which has a most agreeable flavor, is used by the orientals in many ways. The oil is expressed, used as a food, and the residual cake, which contains 40 per cent of flesh forming material, is eaten by the poorer classes [sic]. A paste [miso] and a kind of cheese [tofu?] are also obtained from the bean, but one of its principal uses—perhaps the best known to us—is for the manufacture of the celebrated soy sauce, the making of which has always been surrounded by a certain amount of mystery.

“It is the chemical composition of the soy bean which has attracted so much attention of late, and it has been found to be worthy of the highest place among pulses. It is rich in albuminoid, or flesh forming constituents, also in fat or oil, and contains but a very small proportion of starch or sugar.

“The bean has been said to favor digestion, and it is a fact that the protein it contains is particularly easy of assimilation. A delicate infant, unable to digest cow’s milk, often will thrive on a gruel made of the soy bean flour and water, and during the little intestinal disturbances of summer, to which children are so liable, it is much to be recommended. Diabetic patients find it an invaluable article of diet on account of the small amount of starch and sugar which it contains.

“One might well expect that so valuable a food necessarily would be expensive, but when one learns that both bean and flour are sold for about 3d (6 cents) a pound, one feels that it is high time to give it a trial.

“It is in the form of flour that the soy bean is likely to be most popular on this side of the globe, although the beans themselves, when properly cooked, make good soups and form the basis of many of those little dishes beloved of those who prefer a meatless fare [vegetarians]...

“The soy bean thus is a cheap substitute for meat. In the dried state it looks more like a pea than a bean, but when soaked in warm water it expands and assumes its beanlike appearance...”

“The article says that these beans soaked and cooked are excellent mixed with a well flavored tomato or other sauce and made up into cutlets, croquettes, etc., to be used with cheese, etc., because its flavor is not pronounced, for which reason it is more valuable in the kitchen.

“These beans can be obtained at a seed store at just the price one pays for other sorts of beans at a grocery.”

513. Sahr, C.A. 1914. Report of the Assistant Agronomist. *Hawaii Agric. Exp. Station, Annual Report*. p. 43-49. For

the year 1913. March 16. [1 ref]

• **Summary:** In this report’s only section, titled “Experiments with leguminous plants,” all crops are grouped into three types based on the length of their growth period. The soy bean appears in both the first group (quick rotation, short season, 3 to 4 months) and the second group (medium time, 4½ to 6½ months). The importance of inoculation is emphasized.

The subsection on “Soy bean” (p. 46-49) states: “Soy beans were grown more or less extensively by Japanese farmers in Kona to defray expenses while their coffee trees came into bearing, finding a ready market for culinary purposes and also among local soy sauce brewers. Since the coffee orchards now demand the entire attention of the growers, the soy brewers depend upon soy beans imported from Japan for their supply.

“The brewing of Japanese soy sauce having become a well-established industry in Hawaii, a visit of inspection to several of the largest factories was made to ascertain the method of manufacture, which is given here briefly...” Equal parts of boiled soybeans and roasted California wheat are mixed, “poured into molds, and left to stand for 3 or more days, or until slightly covered by mold fungi. The molds are then emptied into large cedar vats of 500 to 800 gallons capacity. A starter made from cass [soybean presscake] and brine is then added, and the mass is left to ferment for a period ranging from 6 months to a year or 18 months, the mass being thoroughly stirred twice each day. The fermented mass is then transferred into a large press and the liquid sauce is pressed out, boiled 2 or 3 hours, and put in cedar tubs of 4½ to 6 gallons capacity... The ferment starter is made of a small quantity of soy-bean cake, or cass, sprinkled over a few handfuls of parboiled soy beans and left in a warm place for several days. The cass is sold for 20 cents per 100 pounds to rice planters as a fertilizer, and contains about 20 per cent salt. It is also fed to hogs, after soaking in water to draw out the salt. The brewers buy imported soy beans at \$72 per ton in Honolulu, wheat at \$40, and salt at \$10. The tubs in which the soy sauce is put up are made of Japanese cedar, shipped knocked down from Japan, and put together as wanted. The cost per tub is from 40 to 70 cents, according to their capacity, which ranges from 4½ to 6 gallons. Soy sauce is eaten by all classes of Japanese as a table sauce, with their rice, fish, and meats. It has the color of strong black coffee.

“Miso, another Japanese table sauce, is brewed from soy beans and rice. The brewed liquid is clear white. The climate of Hawaii is too warm for its manufacture.”

A table (p. 48) shows five soybean varieties (each with an “Agronomy accession number, three also with an S.P.I. number—20798, 19183, and 14953) and their yields as hay, fodder and/or seed, and stages of growth in Hawaii. The only named variety, Ootoan [black seeded], was “grown from seed received from the College of Hawaii in May

1911. This variety is undoubtedly the coarsest, rankest soy bean ever grown by this station. It is also most tolerant of both dry and wet conditions, but only makes a rank growth during a cool and moist growing period." Trials of this variety were made at the Hilo and Glenwood substations.

No. 698, a Russian soy bean, was received from S.R. Cope of London, England. Seven varieties were received from the College of Hawaii. Eight varieties were received from the Bureau of Plant Industry (USDA) under the [S.P.I.] numbers 19183, 22379, 32906, 32907, 34857, 34934, 34924, 34987, and 34123; they were planted in May. "Four varieties, said to be rich in oil content, were received from an eastern paint and oil company for trial by this station. Samples of these will be analyzed and the oil content determined."

A photo shows two Ootoan variety soy bean plants, valuable for forage and green manuring; one is bigger than the other and both are hanging up-side down.

Other leguminous plants tested: Kulthi or horse gram, cowpeas, sunn hemp (*Crotalaria juncea*), a variety of Cuban peanut, asparagus bean (*sasagi*; probably yardlong cowpea) and sesbania.

Note 1. This is the earliest document seen (Aug. 2004) that mentions the soybean variety Ootoan.

Note 2. This is the earliest document seen (March 2004) that mentions the asparagus bean (*Vigna sesquipedalis*). Address: Asst. in Agronomy.

514. Loomis, Henry M. 1914. Food products from the soy bean. *American Food Journal* 9(8):472-74. Aug.

• **Summary:** Loomis collected information on soybean products while stationed on the Pacific Coast. "Probably the most interesting and important of these food products is soy sauce, or shoyu, as the Japanese call it. It is the only one which is used to any extent among Occidental nations, with whom it forms the principal ingredient of Worcestershire and similar table sauces. It is also used to some extent as an ingredient of bouillon cubes. König estimates that the consumption of this product in Japan amounts to two or three fluid ounces per day for each person, which would make a total consumption for that country alone of three to four hundred million gallons. No figures are available as to the amount of this sauce which is used in China, but all except the poorest class eat it habitually on rice and fish, which form their principal articles of diet."

Japanese soy sauce "is prepared on more scientific principles and it is considered much superior to Chinese soy. Each manufacturer of Japanese soy has special brands or trade marks under which his products are sold. Japanese soy is usually imported into this country in wooden tubs holding about three gallons each and sells at wholesale price of from 75 cents to \$1.50 per tub" [i.e. 25 to 50 cents per gallon]. A brief description of the Japanese process for making soy sauce follows; it mentions Koji.

Brief descriptions are also given of the following foods and their method of preparation: (1) "Soy bean curd, or, in Japanese, Tofu, is as its name implies prepared by coagulating or precipitating the legumin or vegetable proteid, of the soy bean by mineral salts. (2) "The frozen bean curd, or 'Koritofu,' ..." (3) [Yuba]. "The liquor or bean milk is the milky fluid produced in the manufacture of bean curd after straining and before coagulating. Chinese bean curd [sic], or Toufu-pi, is prepared by drying the scum produced on boiling the bean milk. It is imported in the form of vitreous, brittle, yellowish sticks in appearance like dried casein. (4) Soy bean oil. (5) "Kinako is prepared by roasting and grinding soy beans. It has a very agreeable flavor and is much used in the preparation of confections, particularly as a sort of coating powder. (6) Miso, which is made from "Koji, the same ferment as is used in the making of soy. There are two principal kinds imported into this country, the white and red Miso. They differ principally in the rapidity of fermentation and in the amount of salt used."

"Winton and others have suggested the use of soy bean products as foods for diabetics and it appears that there are many of the foods mentioned above which would serve a useful purpose in this regard. There are a number of firms now putting out soy bean meal or flour on a commercial scale and notices have appeared recently that soy bean curd and milk are to be manufactured on a large scale in Europe.

A large table contains nutritional analyses of four types of soy [sauce] (incl. Kikkoman, Kikkoraku, typical Japanese shoyu and Chinese soy) plus each of the foods mentioned above, including tofu (8.6% protein) made in Seattle, Washington, and "Bean milk (strained bean liquor before coagulating; 2.09% protein).

Mr. J.T. Willard notes: "I remember twenty years ago [i.e., 1894] that Prof. Georgeson of the Kansas Agricultural College had half a dozen varieties [of soy beans]. He was a teacher of agriculture in Japan and I suppose he learned as much there as he taught, and he became very enthusiastic over the soy bean. I remember there was a great difference in the different varieties of the soy bean." A portrait photo shows Mr. H.M. Loomis.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term "soy bean curd" to refer to tofu. Address: Bureau of Chemistry, USDA.

515. Suzuki, U.; Sera, S.; Sasaki, Y. 1914. Dobutsu no eiyô-jô sekkai no kôka ni tsuite [The effect of limestone (calcium) on the nutrition of animals]. *Tokyo Kagaku Kaishi (J. of the Tokyo Chemical Society)* 35:1035-91. [Jap] Address: 1. Nôgaku Hakase; 2-3. Nôgaku-shi.

516. Bosse, Sara; Watanna, Onoto. 1914. Chinese-Japanese cook book. Chicago and New York: Rand, McNally & Co. 120 p. Index. 17 cm.

• **Summary:** A remarkable and pioneering East-Asian cookbook. It may well be the earliest Japanese cookbook seen published in America. It is one of the earliest Chinese cookbooks published in America. The cover illustration shows a well dressed Japanese woman in a Japanese room kneeling and cooking over a brazier. Contents: Preface. Part I: Chinese recipes (12 sections, p. 9-64). Part II: Japanese recipes (7 sections, p. 74-110). List of Chinese and Japanese groceries.

The Preface begins (p. 1): “Chinese cooking in recent years has become very popular in America, and certain Japanese dishes are also in high favor. The restaurants are no longer the resort of curious idlers, intent upon studying types peculiar to Chinatown, for the Chinese restaurants have pushed their way out of Chinatown and are now found in all parts of the large cities of America.” “There is no reason why these same dishes should not be cooked and served in any American home.”

Concerning shoyu, or Japanese-style soy sauce (p. 2-3): “You, sometimes called Soye, is similar to Worcestershire and similar European sauces. In fact, the latter are all said to be adaptations of the original Chinese syou, and most of the European sauces contain syou in their makeup. It lends a flavor to any meat dish, and is greatly esteemed by the Oriental peoples.”

Note 1. This is the earliest English-language document seen (Jan. 2006) that uses the word “syou” to refer to shoyu.

Syou (soy sauce) is an ingredient in at least 55 recipes in this book, both Chinese and Japanese—starting with Chinese soups (p. 12-17). When first mentioned here it is called “syou (Chinese sauce),” but thereafter simply “syou.”

“Miso paste” appears in 5 Japanese recipes: Satsuma soup (“one quarter pound of aburage {oil-fried Tofu}; one quarter pound of miso paste {soy bean and rice cheese},” p. 71-72). Uwo shiru (Fish soup) (“one pound of miso paste {bean and rice paste}; one half cupful of syou sauce,” p. 73-74). Shika shiro (Pot-roasted venison) (“one cupful of syou sauce;... one quarter pound of miso paste,” p. 80). Tamago bolan (Peony eggs) (“finely mashed miso,” p. 91-92). Shiro uri (Stewed squash) (“syou sauce... two tablespoons of miso,” p. 95).

“Aburage (oil-fried Tofu)” and regular tofu appears in Satsuma soup (p. 71, see above). Yaki zakana (Fried fish) (with “oil-fried Tofu... Note: Tofu is made from a mixture of syou bean [soy bean] and rice. It is mashed and rolled into a thin cake, and fried in oil, very much like pancakes,” p. 77-78). Note 2. A poorer definition of tofu would be hard to find. Yaki udzura (Broiled quail or pigeons) (“aburage {bean cheese paste}” and “Tofu cakes,” p. 79). Fried squab (with “fried Tofu,” p. 81). Tamago tofu (a tofu-like custard made with eggs and syoyu sauce, but no real tofu, p. 89-90).

Bean sprouts are used in many recipes, but we are never told what type of beans are sprouted [probably mung beans]; a recipe for homemade bean sprouts (p. 109) calls

for “ordinary white beans, or dried lima beans.” Other interesting ingredients include: “Adzuki (purple beans)” (mentioned once in Yohan candy). Goma seeds [sesame] or goma-seed oil (mentioned 15 times). Kudzu starch (6 times, misspelled once as “kudze”). Peanut oil (at least 10 times). Seaweed (1 can of seaweed; small piece of seaweed), seaweed jelly or gelatine, or Kanton [kanten, agar] (15 times). Sweet rice [mochigome].

The authors, “Winnifred and Sara Eaton were sisters, daughters of a Chinese-born mother and an English-born father, and grew up in a large family in Montreal, Canada. Winnifred Eaton was a very successful fiction writer who, by taking on a Japanese identity, both exploited the public’s craze for ‘Japonica’ at the time, and obscured her Chinese heritage during an age of anti-Chinese sentiment and policies. This cook book was her first collaboration with Sarah, who may have done very little of the writing. A painter, Sarah (1868-1940) lived out her life with her German artist husband, Karl Bosse, in New York. Winnifred (whose Japanese pseudonym was Onoto Watanna) lived 1879-1954, knew almost nothing about Japanese cooking. Winifred’s biographer and granddaughter, Diane Birchall, says that the authors’ claim in the Preface that the Chinese recipes are “... secret recipes handed down from Vo Ling, worthy descendant of a long line of noted Chinese cooks...’ is just a hoax. “According to Birchall, Eaton was awful at cooking Chinese dishes” (MSU introduction and biography).

Note 3. This is the earliest document seen (Jan. 2009) concerning soy ingredients used in Japanese-style recipes, food products, or dishes outside Japan.

517. Davison, Mrs. 1914. Domestic economy in Japan. [Tokyo, Japan]: Kyo Bun Kwan (Methodist Publishing House). Tokyo Katei Mondai Kenkyu Kurabu. v + 73 + [16] p.; 17 + 1157 + 6 p. No index. 19 cm.

• **Summary:** On the title page: “Compiled by the Home Problem Club, Tokyo.” Contents: Soups. Fish. Meats and substitutes. Vegetables. Salads. Puddings. Pudding sauces. Sweets. Cakes. Breads. Native cereals. Preserves. Jams. Pickles. Suggestions. Japanese disinfectants. Useful addresses. Menu-maker (from *Ladies Home Journal*).

The front part of this book (p. v + 73 p.) is in English. The back part (17 + 115 + 6 p., reading from back to front) is in Japanese, and numbered separately. In the middle is a 16-page “Advertising section,” mostly in English, on unnumbered pages. Each recipe is numbered sequentially, from 1 to 1-186, in each part. The recipe numbers in the English part correspond exactly to the numbers in the Japanese part.

Soy related recipes: “Tofu” (bean curd) soup (p. 2). [Soy] Bean roast (p. 12). “Tofu” roast (3 types; calls for 1 *cho* or 1 square of tofu, p. 12-13). “Tofu” and celery stew (p. 14). In the chapter on vegetables: “Daizu” (p. 23): “Soja

or Soy bean. There are white, green and black soy beans. This bean is used in the preparation of *miso*, *tofu*, etc. A drink is made from the black soy bean and unhulled barley. These are parched and then boiled in a tea, sweetened with sugar and used in the summer time.” Soya beans (p. 24): “Hull and boil; remove the skins and dress like lima beans. *Azuki* a little red bean may be prepared in many ways. One way, boil, place in center of a mound of rice, and serve with a curry sauce made with apple and onion in it.”

Tofu (p. 26-29): “Tofu is a most nourishing inexpensive curd made from the bean. It may be served in many ways. The process of preparation takes away part of the bean difficult to digest and leaves one of the most wholesome of foods. It is especially good for diabetic patients. It may be bought in any part of Japan. Always pour boiling water over it before using.” These recipes follow: Scrambled “tofu”. “Tofu” and cheese. “Tofu” croquettes (3 recipes). “Tofu” box. “Tofu” and tomatoes. “Tofu” and peanut butter. “Tofu” and cheese (2 recipes). “Tofu” and corn.

“Tofu” (bean-curd) salad (with 2 *cho* [= cakes] of “tofu,” p. 38). “Tofu” custard (p. 40).

This book also calls for peanuts in many recipes. A few recipes call for *goma* (sesame seeds), *kanten* (“a kind of gelatine made from seaweed. A substitute for gelatine,” p. 61). in a few. Pudding sauces and sweets include many recipes for “mizu-ame” (“1 pint of golden-colored mizu-ame.” Some is made from millet, and some from rice). “Health food” is mentioned on p. 52. Address: Tokyo, Japan.

518. Hashimoto (E.D.) Co. 1914. Hashimoto Shokai (Ad). In: Nichibeishinbun-sha. 1914. *Nichi-Bei Nenkan* [*Japanese-American Yearbook*. No. 10]. Unnumbered page before last block of ads. [Eng; jap]

• **Summary:** Ad (fill page). Only two lines of this ad are in English: The company name and address. This Japanese company imports many food items, including miso and shoyu. A large photo shows the front of the company, with two delivery wagons parked in front. Address: 163-165 N.S. Temple St., Salt Lake City, Utah. Phone: Was. 3442.

519. Nichibeishinbun-sha (Nichi-Bei Shinbunsha). 1914. *Nichi-Bei nenkan* [*Japanese-American yearbook*. No. 10]. 650 Ellis St., San Francisco, California. 693 p. Reprinted in Feb. 2002 in Tokyo by Nihon Tosho Senta. Series: Nikkei Imin Shiryōshū. Dai 5-kai [Collected Documents on Japanese Emigration. No. 5]. [Jap; eng]

• **Summary:** This book is read and numbered from “back to front” compared with typical English books; it is mostly (99%) in Japanese. The English-language title page reads: *The Japanese American Year Book*.

The book is divided into 14 parts, each numbered separately. Contents: (1) Front matter (incl. how this book was created) (5 p.). (2) Table of contents, general (4 p.). (3)

Table of contents, ads (4 p.). (4) Photos (black and white on 15 unnumbered pages). (5) Maps and charts on 3 unnumbered pages. (6) Advertisements (A-1 to A-16). (7) Front part (p. 1-165), including general information about America, Japanese in America, U.S. and agricultural census data, etc. (8) Ads (p. 1-13). (9) Back part (p. 1-136). (10) Ads (p. 1-66). Appendixes: (11) Table of contents for directory of places where Japanese live in America, by state, and within each state by city: In Japanese (2 p.). In English (2 p.). (12) Directory of Japanese living in America, interspersed with ads (p. 1-228). (13) Ads (2 p. + p. 1-50). (14) Copyright page.

In the front part: There is no import duty / tax on soybean oil. The value of the total amount imported was \$733,937 (p. 87). There is also no import tax on soybeans (written “sooyabinzu” in katakana for the first time in these Yearbooks) (p. 87). The total value of soybeans imported to San Francisco was \$27,867 (p. 91). There is (again) no tax on soy oil (written Soyamame Abura, in kanji). The total value of soy oil imported to Portland, Oregon was \$13,692. No tax on soy sauce pickled imported to Portland, Oregon, worth \$10,353 (p. 94).

A table (p. 97) shows the Japanese population in the USA for most years from 1860 (6 people) to 1913. For recent years: 1907–89,573. 1908–103,683 (peak). 1909–98,715. 1910–91,958. 1911–93,359. 1912–93,751. 1913–95,843.

A table (p. 98) shows Japanese population in the USA in the 8 states with the highest populations: California, Washington state, Oregon, Colorado, New York, Utah, Montana, Wyoming.

A table (p. 102) shows the number of tofu shops in the USA: Total 48. Owners 48. Workers 7. This research was conducted by Nihonsha (“Japanese Company”).

A table (p. 103) shows the total population of California from 1850 to 1919 (projected) and percentage increase during each decade: 1850–92,957 (-). 1860–379,994 (310% increase). 1870–560,247 (47%). 1880–864,694 (54%). 1890–1,213,398 (40%). 1900–1,485,053 (22%). 1919–2,377,540 (60%–projected).

Individual lines in various tables (p. 127-163) show tofu, miso and shoyu makers in the United States by state, and within California by city. There are 7 columns: Location, total no. of shops, no. of owners, investment (\$), sales (\$/year), workers, salary (\$/year). The number of tofu makers by state is: California 34. Utah (Ogden) 1. Colorado (Denver) 2. New York City 1. Oregon 1. Washington 9. There is also 1 miso maker in Los Angeles and 1 shoyu maker in Oregon. Columns 1-2 are filled out for all entries, columns 3-4 for all California entries, and columns 5-6 for about half the California entries. Note: The information on this page is not identical to that in the directory. For example, for Utah, the directory shows 3 tofu shops in Salt Lake City and one in Ogden.

A table (p. 155) shows Japanese population in the top 8 East Coast states in 1913. There are 4 columns: State, males, females, and total. The totals are (in descending order of population): New York: 2,209. New Jersey 277. Massachusetts 230. Pennsylvania 223. Florida 89. Washington, DC 54. Rhode Island 41. Maryland 29. Five other states except Vermont 89. Grand total 3,275 Japanese, including 3,108 males (95% of total) and 167 females.

Tariff (import duty) reduction on soybeans, from the old rate of \$0.45 per bushel to \$0.13 per bushel in 1913 (p. 27). Tariff reduction on Manchurian soybeans, from the old rate of \$0.45 per bushel to no tax in 1913 (p. 28).

The Directory shows Japanese companies making soyfoods in California, Utah, Colorado, Oregon. Address: San Francisco, California.

520. Takenob, Y. 1914. Japan year book. Tokyo, Japan: Y. Takenob and G. Takeda (The Japan Year Book Office). 740 p. See p. 334, 400, 433-34, 439-40, 442, 689, 692, 705, 718. [Eng]

• **Summary:** This annual book was first published in 1905. Facing the Preface is a table of Japanese weights, measures and moneys. In chapter 16, "Agriculture" (p. 337-57) is a table titled "Beans, sweet potato and potato (p. 345) which gives "Soy bean" production data in Japan for 1908-1912 (in *koku*). The next paragraph contains information on soy [sauce], *miso*, and *tofu* similar to that in the 1913 year book.

In chapter 20, "Industry," is a table on soy [sauce] production in Japan from 1908-1911, and a paragraph (p. 400) on the patented Suzuki process for brewing soy [sauce].

In Chapter 22, "Trade" is a table (p. 433-34) titled "Prices of principal commodities in Japan," which includes prices for 1907-1912 in yen for soy beans (per *koku*), soy [sauce] (per *koku*), and *miso* (per *kwan*).

In Chapter 23, "Foreign trade" is a table (p. 439) titled "Imports" (in 1,000 yen). Under the heading "Staples articles of over yen 1,000,000" (p. 438) is given the value of soja bean imports for 1911-1913. In a table titled "Soja bean" (p. 442), under the heading "Staple exports and destinations (in 1,000 yen)" (p. 440) is given the value of soja bean exports to China, Kwantung, India, and other places for 1911-1913.

In chapter 35, "Chosen (Korea)," under the heading "Agriculture" (p. 691) is a paragraph (p. 692) titled "Barley and soja bean," which gives acreage and yield for soja (year not specified) with the value (in yen) of exports to Japan in 1912.

In Chapter 36, "Taiwan (Formosa)," under the heading "Agriculture," a table (p. 705) titled "Agricultural products" has production data on "Beans and peas" (in 1,000 *koku*) for 1911-1912.

In Chapter 38, "South Manchuria," is a paragraph (p. 718) titled "The soya bean" which has information on South

Manchuria's soya bean yield, [soya] bean-cake output, amount exported for specific years, and production of various milling centres.

In the advertisements at the rear (p. xiii) is a full page ad for Higeta Shoyu, showing many medals: "Patronized by the Imperial Household. Trade mark. The celebrated Japanese sauce. Established in 1616. Manufactured by G. Tanaka, Chioshi [Choshi], Chiba-ken, Japan." Address: Prof. at Waseda Univ. and Late of the *Japan Times*, Japan.

521. Terry, Thomas Philip. 1914. Terry's Japanese empire: Including Korea and Formosa, with chapters on Manchuria... A guidebook for travelers. Boston and New York: Houghton Mifflin Co.; London: Constable & Co., Ltd.; Tokyo: Kyo-Bun-Kwan, Ginza, Shichome. cclxxxiii + 799 p. See p. 515. Maps. Index. 16 cm. [75 ref]

• **Summary:** This guidebook, after its 283-page introduction, is organized geographically into: 1. Central Japan. 2. Northern Japan. 3. Yezo, the Kuriles, and Saghalien. 4. Western Japan. 5. Kyushu and the Loochoo and Goto islands. 6. Korea, Manchuria, and the Trans-Siberian Railway. 7. Formosa (Taiwan) and the Pescadores. Abbreviations (p. ix). List of maps (13).

In the Introduction: Japanese inns (p. xxxvi, xxxix-xl): The best food is not always to be had in the most pretentious places. In certain modest inns, where the rooms are as bare as a monk's cell, and the general appearance of austerity might argue a strict economy, there will often come, as an agreeable surprise, dainty food served in dishes that delight the lover of beautiful porcelain or lacquer. Later the traveler may learn that the place enjoys fame for some savory specialty—eels boiled in soy, broiled crayfish, stewed octopus, buckwheat-macaroni, or the like."

"Food is served in the guest's room on a lacquered tray... One of the soups may be made of... lobster, or seaweed, in which case it is amazingly thin and unpalatable; the other of beans [*miso*], bean curd or something of that nature. Salt is not provided unless asked for. Many of the dishes are cooked in soy; a tiny dish of which is supplied for dipping bits into before eating them."

Japanese food (p. xliii-xlvii): "Rice is a luxury with thousands of the peasants; it takes the place of bread with the well-conditioned; and wherever it is eaten to the exclusion of other foods it produces (because the thin phosphorous skin is polished off it) the prevalent beriberi. The proportion of animal food is small. Beans eaten in a variety of ways occupy a conspicuous place in the food of all classes and they supply the nitrogenous matter essential to those who rarely eat meat and who do not get the casein obtained by cheese-eating peoples. The soy-bean (*daizu*; *omame*) ranks first in extent, variety of use, and value among the pulse of Japan, and in point of nutriment is quite near to meat. It contains nearly two fifths of its weight in legumin, nearly one sixth in fat, and is rich in nitrogen. It is

to the Nipponese what frijoles are to Mexicans and garbanzos (chick-peas) to Spaniards. Of the numerous varieties some are made into curd [tofu], and into the widely celebrated bean-sauce (the Worcestershire of Asia) called shoyu (sho, soy; yu, oil), and which is almost as indispensable as rice. It forms the daily relish of the rich man and the beggar, and is in as general use as tea and tobacco.”

Fish (sakana)... Teriyaki: Fish in a sauce of soy, mirin, and sugar... Sashimi: raw fish cut in thin slices and eaten after being dipped in shoyu.—Kabayaki: fish which is first steamed then dipped into soy and roasted (or eels cut open on the dorsal line, covered with soy mixed with sugar, and roasted). The latter dish, usually called Unagi-no-kabayaki, is a favorite with the Japanese,...

“Rice:... Azuki-meshi: rice and red pea-beans mixed (boiled).—Mochi: small dough-cakes made of rice and sold throughout Japan.—Sushi: a general name for food of boiled rice and fish, eggs, vegetables, etc., seasoned with vinegar and soy...—Inari-zushi: fried tofu stuffed with chirashi-zushi.—Maki-zushi: boiled rice and other vegetables rolled and wrapped in a sheet of the sea weed called Asakusa-nori...—Kombu-zushi: fish seasoned with vinegar and wrapped in a piece of the edible seaweed known as *Laminaria japonica*. A differentiation of this popular food is the Kombumaki: baked or roasted fish wrapped in kombu, then tied, and boiled in sugar and soy.

Various:... Tsukudani: small fish boiled in soy and used as a relish or condiment (named for Tsukudajima, a place in Tokyo famous for its preparation).—Oden: a stew (greatly enjoyed by the proletariat) of fried bean-curd, lotus-roots, potatoes, etc.” Ame and midzu ame.

“Soup (shiru): Tōfu-jiru: bean-curd soup.—Miso-shiru: bean-soup with vegetables.”

Railways—Dining cars (p. lxxxiv): Discusses “The unique and not unpalatable bento,—a sort of national sandwich,—put up (usually cold) in thin, flat, twin boxes (bento-bako) of dainty white wood (1 in. high, 5-7 in. long), along with a paper napkin (kuchifuki) and a pair of chopsticks (hashi), and sold at many stations, is distinctively Japanese and widely popular... Besides the full box of plain boiled rice, the ordinary (15 sen) bento contains usually... a few boiled black beans (nimame)... seaweed (kobu)...” Rice cakes (mochi) with the kernel of yokan, or sweet [azuki] bean paste, which usually forms their center.

Buddhism (cxc): Again the rice-flour cake [mochi] is offered at the domestic altar. It now takes the form of a lotus-petal with capsule of [azuki] bean-paste.” (an).

Yokohama (p. 13): “The return gifts from the emperor and princes included...jars of soy [sauce]; coral and silver ornaments;...”

Tokyo (p. 199): “The hill beyond the intersecting roadway is called Suribachi-yama because of the similarity

in shape to a suribachi—an earthenware vessel in which bean-soup [miso soup] is prepared.”

Nikko—Shops: “... the kuri-yokan (so-called from the chestnuts mixed with the sweetened bean-paste [azuki]) is good and cheap (10 sen).”

Kyoto—The Shinto Shrine of Inari. There are many local festivals, the most important of which is the Inari-matsuri which usually falls on June 5. There are trick riders on horseback and decorated sacred cars [carts] are “placed in the procession, and the day is devoted to general jollity—and pocket-picking. On this occasion the people eat Inari-zushi, or fried tofu stuffed with boiled rice, since tofu [fried, as aburage] is the favorite food of the fox popularly believed to be the messenger of Inari (and by extension, the God of Rice).”

Kyoto—Miidera (p. 504-05): Travelers visit Benkei’s Iron Pot (*Benkei-no-shiru nabe*), a very old, rusted, and broken contraption (about 5 ft. wide and 3 deep) resembling a soap-boiler, and from which Yoshitsune’s devoted servitor (and popular hero) is supposed to have eaten his bean-soup [miso soup]—which may well be doubted.”

Kyoto to Koya-San (p. 515): For the Western traveler there is “a tiny kitchen a blessed refuge wherein, if he is making a prolonged stay, he may cook his un-Christian food without the vegetarian priests knowing (or caring) that such a sacrilege is being committed! Meals are served in one’s apartment; the food is purely vegetable, and after the second day distressfully unpalatable. Fish, flesh, fowl, butter, cheese, eggs, milk, bread, coffee, and other necessities of life are absent, and are replaced by seaweed, greens, bamboo-shoots, cabbage, daikon in various unappetizing forms, and other garden-truck which one eats as a novelty the first meal and rejects with an involuntary tightening of the throat when it is offered at the second and third. In addition there are flabby mushrooms boiled in very thin water without seasoning; the omnipresent boiled rice without sugar, milk, or salt; a bean-curd (tofu) for which one acquires a liking only after much patient effort; a yellow substance (known as yuba) made of the skin of bean-curd, and looking and tasting like thin sheet rubber;...”

Kobe excursion—The Tansan Hotel (p. 630): The strawberries and other ground fruits and vegetables, which grow nearly all the time in this favored spot, are enriched with [soy] bean-cake only [no human excrement is used] (as a precaution against typhoid).”

Korea (p. 725): “Among the dishes dear to the native heart are pounded capsicum, bean curd [tofu], various sauces of abominable odors, a species of sour kraut (kimshi [kimchi]), seaweed, salt fish, and salted seaweed fried in batter.”

Manchuria and the Trans-Siberian Railway (p. 756): “Considerable [soy] bean-cake and furs, and vast quantities of lumber, etc., come down the river from upper Manchuria and Siberia.”

Also discusses edible seaweed (p. xlv, 330): Japanese food: "Seaweed in almost endless variety enters largely into foodstuffs. Not only are the giants of the marine flora taken up and utilized in various ways, but also the more delicate red and green sorts—the use of which has been adopted by other nations. Most of the edible green and red algae bear the generic term nori, while the words *umi-kusa*, or *kai-so* (which also means *bêche-de-mer*), are used for algae in general. Many of the weeds are eaten fresh, others in soup. Some are dried or pickled and eaten in vinegar. They usually appear in commerce in the form of little packages, to the sale of which special stores are dedicated. Certain varieties are converted into jelly."

Yezo—fisheries: "Certain of the many varieties of edible seaweed which flourish along the Japanese coast are found in Yezo, particularly the circumpolar tangle (*Laminaria*) and seawracks (*Fucus* species), which prefer cold water and a heavy surf. For this reason sea-algae add considerably to the value of the Yezo exports."

Note: The author resided for almost 12 years in Japan and made repeated journeys on foot (and otherwise) from one end of the country to the other. Address: F.R.G.S. [Fellow of the Royal Geographical Society, England].

522. Winkler, Gustav. 1914. Die Sojabohne: Aus einem Vortrage... gehalten in der Hauptversammlung der Gartenbau-Gesellschaft Frankfurt a.M. am 17. April 1914 [The soybean: From a lecture... presented at the main meeting of the Gardening Society of Frankfurt am Main, on 17 April 1914]. Frankfurt am Main: Fr. Honsack & Co. 30 p. 22 cm. On title page: Als Manuskript gedruckt (Printed as a manuscript). [3 ref. Ger]

• **Summary:** On the gray cover: *Die Sojabohne der Mandschurei* [The soybean of Manchuria]. Contents: Introduction. Sir Alexander Hosie, in his books about Manchuria, counts eight types of soybeans: Yellow soybeans (3 varieties), green soybeans (2 varieties), and black soybeans (3 varieties). The soybean plant. Condition / nature of the soil and the climate. Cultivation of soybeans. Soybeans can enrich the soil with nitrogen. Yield.

Utilization of the soybean: 1. In East-Asia. A. As foods: 1. Soy sauce. 2. The Chinese paste *Chiang* and its near relative Japanese miso. 3. Tou-fu or tofu (incl. firm tofu, tofu curds, tou-fu p'i or yuba, ch'ien-chang or pressed tofu, tung tou-fu or frozen tofu). B. Soybean meal or flour. C. Soybean meal for use as fertilizer or animal feed. D. Soybean oil. E. Lard substitute and margarine. F. Industrial uses such as lubricant and waterproofing agent. Soybean meal. 2. In Europe and the USA. Refined soybean oil used for salad oil, margarine. Utilization of soybean cake in Europe. Utilization of soybean oil in Europe (for making soap, above all). The soybean oil and cake industry in Manchuria.

This booklet begins: A year ago today I had the opportunity to speak about the soybean for the first time. What we knew and understood about it then was still very little. Except within botanical circles, even its name was completely unknown, even though in East Asia (China, Japan, India), for more than 1,000 years, the soybean has been cultivated and is near rice as the main food for more than 500 million people.

Note: Part of this lecture was based the following English-language article, translated into German by Werner Winkler (Gustav's son) in 1913: Shaw, Norman. 1911. "The soya bean of Manchuria." *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series* No. 31. 32 p. Address: Mainkur-Fechenheim [Frankfurt am Main, Germany].

523. Togano, Meijiro. 1915. Shôyu, miso, tamari sokuji-hô [The quick process for brewing shoyu, miso or tamari]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 55. p. 121-51. Jan. [Jap]

Address: Jozo Shikensho, Gishi.

524. Fruwirth, C. 1915. Die Sojabohne [Soybeans]. *Fuehlings Landwirtschaftliche Zeitung* 64(3/4):65-96. Feb. 1 and 15. [65 ref. Ger]

• **Summary:** Contents: Introduction (work in East Asia and Europe from 1905-10). History. Botanical aspects. Varieties. Breeding. Needs of the plant (incl. "heat units, *Wärmesumme*). Utilization (incl. in German *Tofu, Miso, Chiang, Schoyu* or *Sojatunke* (shoyu, p. 83), *Natto, vegetabilische Milch* (soymilk), soy sprouts). Measures and precautions in cultivating soybeans (incl. yields). The soybean as a crop in central Europe. Conclusion.

Note: On p. 83 the term "Sojas" is used to refer to soybeans, and "Sojatunke" to refer to soy sauce.

In 1905 the Japanese made the first attempt to import soybeans from Manchuria to Europe, but it failed because they did not arrive in good condition. The repetition of the attempt in 1908, however, gave good results. Then imports of soybeans grew, followed by imports of soybean cake (*Sojabohnenkuchen*). Major importers today are England, France, Germany, Denmark, Italy, Belgium, Netherlands, Sweden. The high import duty hinders imports to Austria-Hungary.

Toward the end of the 1800s in Russia, Owinsky took early-ripening soybean varieties from China and Japan and requested the expansion of soybean cultivation. In 1899 in Kiev, Owinsky wrote the name of the soybean as *Soja hispida praecox* (p. 67). Owinsky in Derajne [Derazhne?] grew Podolie soybeans (p. 77). Sempolowsky in Derebzin, Russian Poland, also grew soybeans. European Russia gets soybeans overland (probably from Manchuria). Russia was one of the first countries to take an interest in growing soybeans after 1908. Russia now grows large amounts of

soybeans in Podolia. In Germany, Prof. Kallo in Wiesbaden was a pioneer who recommended soybeans as an inexpensive food for the people. North America first started to import lots of soybeans as a source of oil because of a bad cottonseed harvest.

“Since the start of my teaching activities, I have had an interest in the soybean plant and have carried on my own investigations.” In 1900 the author received 7 soybean varieties from L.V. Jurdiewicz from Deraznia in Podolia; these had been imported by Owinsky. In 1901 at Hohenheim he began to study the time needed for soybeans to mature; He found it ranged from 141 to 163 days. He continued this research at Hohenheim from 1901 to 1903, getting soybean seed yields of up to 1,560 kg/ha. From 1910 to 1914 he continued at Waldhof-Amstetten, with 5 varieties. The maturity range there was 112-166 days and the yields were up to 1,500 kg/ha (about 23 bushels/acre), but the yields of many varieties were low, about 300 to 500 kg/ha (4.5 to 7.5 bu/acre). Yields of soybean straw, however, were up to 3,600 kg/ha. Fruwirth uses three terms to refer to soybeans: (1) Die Sojabohne; (2) Die Soja; and (3) Sojas, as “Zuechtung von Sojas” or “Sojas, meist gemahlte.” There are now a proposal to establish a joint stock company for growing soybeans in central Europe (probably in Germany), using big money. But it may not succeed because soybean yields in Germany and Austria are low. Seedsmen who sell soybeans commercially in 1915 include: Haage and Schmidt (Erfurt, Germany), Vilmorin Andrieux (Paris, France), Dammann & Co. (St. Giovanni at Tedaccio, near Naples, Italy), and Wood and Son (Richmond, Virginia, USA). The main soybean varieties sold by each of these companies are described in detail (p. 73-74).

Utilization (p. 82): Since soybeans are rich in protein and fat, they can be used as a good meat substitute. In Europe the use of soybeans for food is still very small. “In Europe, the first foods from soybeans were made in France, at Vallées near Asnières: Flour, bread, and cakes for diabetics, and cheese. In Germany not long ago the Soyama-Works at Frankfurt am Main likewise began the production of such foods. Similar foods were also made in Romania. Soybeans sprouted in the dark yield a bitter-tasting salad. Production of vegetable milk started in France at ‘Caséo Sojaine’ at Vallées (Seine); and is now being studied by the Synthetic Milk Syndicate in England. Using the process developed by Fritz Goessel, this Syndicate made 100 liters of soymilk from 10 kg of ground soybeans at a factory at Liverpool.” “It is in no way certain that soybeans will ever be widely used in human foods.”

A fairly large amount of soybeans are ground for use as fodder. The main use is for oil extraction. Yet Haberlandt considered that since the soybean contained only about 18% fat (range: 13-22%), its use as a source of oil would not be economical. The main use of soy oil is in soaps, for which it

is highly prized. It is also used in making paints as a partial substitute for linseed oil. The best quality may be used as food. In England soy oil is used for margarine production.

Conclusion: The soybean originated in central Asia and is now widely cultivated in China, Japan, Manchuria, and India. Its seeds are rich in protein and, unlike most other legumes, also rich in fat. The plant is used in its homeland mostly as a source of human foods and seasonings, made by fermentation; the oil is used mostly for industrial non-food purposes. In recent years soybean production has expanded significantly in the southern part of the United States. There it is used mainly as green fodder, hay, silage, and soil building. The main expansion of soybean cultivation in Europe has been in Italy, southern France, Hungary, and southern Russia. Good early varieties give yields of 1,100 to 1,300 kg/ha. A large expansion of soybean production in central Europe is possible only in southern Austria and Hungary, and maybe in a few other places where it is warm. But late-maturing soybeans may be grown for forage and silage in the cooler parts of Germany and Austria. Address: Prof., Dr., Wien (Vienna).

525. Akaghi, Tasuku; Nakajima, I.; Tsugane, K. 1915. Researches on “Hatsucho-Miso.” *J. of the College of Agriculture, Tokyo Imperial University* 5(3):263-69. March. Journal name also written as Tokyo Noka Kiyō or Tokyo Teikoku Daigaku Nogaku-bu Kiyō. [12 ref. Eng]

• **Summary:** “Hatsucho-miso” is a special variety of “miso” chiefly manufactured in Mikawa Province. Its chemical composition was reported by T. Takahashi and G. Abe in 1908.

In preparing “Hatsucho-miso,” the cleaned soy-bean is steeped in water and boiled for 6 to 7 hours. The boiled soy-bean is crushed and then moulded in a round or cylindrical mass suitable to lay on the floor of the “koji” -chamber. “Koji” ripens after 20-40 days. It is then mixed with salt and water and is introduced into a fermenting vat covered by straw mats, weighted with a large number of stones to ensure the materials ripening en masse. The ripening of “Hatsucho-miso” is generally attained in from 3 to 5 years.

Lists the ten species of mould fungi found in almost every matured “koji.” The species of fungi predominating during the stages of preparation differ in accordance with the season in which the preparation is carried on.

3 species of yeast were isolated from “koji”: *Torula*, *Willia anomala* and *Mycoderma*.

“Hatsucho-miso” is reported to have a special flavor and aroma. “The nature of the aroma is not explained at present, but the taste is ascribed to the water soluble matter beside protein-matters, so that part of it at least must consist of the decomposed substances derived from protein matters.” Address: Japan.

526. Schieber, W. 1915. Die Sojabohne und deren volkswirtschaftliche Bedeutung als Nahrungsmittel [The soybean and its economic significance as a food]. *Oesterreichische Chemiker-Zeitung (Vienna)* 18(10):85-86. May 15. Excerpts from a lecture to the Austrian Chemical Society, 24 April 1915. [1 ref. Ger]

• **Summary:** A summary of Li Yu-ying's information plus original nutritional analyses. Address: Austria.

527. Schieber, W. 1915. Die Sojabohne und deren volkswirtschaftliche Bedeutung als Nahrungsmittel [The soybean and its economic significance as a food]. *Seifensieder-Zeitung* 42(22):471-72. June 2. (Chem. Abst. 10:1558). [Ger]

• **Summary:** Descriptions and nutritional analyses are given of a number of different food products prepared from the unfermented and the fermented soy bean. Unfermented: soya milk, tofu (*Sojakäese*), soy flour ("because of its composition it can be recommended as a first class food for diabetics and vegetarians"), soya bread, soya confections (resembling marzipan), soya chocolate, soya coffee, soy grits, whole dry soybeans, and soy sprouts. Fermented: Solid seasonings such as Japanese natto, pastes such as Japanese miso, sauces (in Japan each year 10,000 factories make 700 million liters of soy sauce), a new German fermented soyfood product is made by a secret process; its contains 45% protein, 6% nutritional salts, and about 2% lecithin. Address: Dr.

528. *New York Times*. 1915. From here and there. Oct. 24. p. SM11.

• **Summary:** "The usual Japanese breakfast consists of rice, miso soup, pickles, and occasionally fish. Tea is always served with meals, and is drunk clear, without sugar. Miso soup consists of strips of radishes, seaweed, eggplant, or other vegetables cooked with bean curd and water. The cooking is not continued for a long, and so few vegetables are used that the soup partakes only slightly of the flavor of the ingredients."

529. *Los Angeles Times*. 1915. Japanese breakfasts. Nov. 27. p. II6.

• **Summary:** From the *Boston Transcript*: This article is identical to the following, published about a month earlier: *New York Times*. 1915. "From here and there." Oct. 24. p. SM11.

530. Japan year book. 1915. Tokyo, Japan: Y. Takenob and G. Takeda (The Japan Year Book Office). 789 p. See p. 349, 401-02, 436, 714, 716-17, 730, 743. [Eng]

• **Summary:** In chapter 16, "Agriculture" (p. 340-60) is a table titled "Beans, sweet potato and potato (p. 349) which gives "Soy bean" production data in Japan for 1911-1913 (in *koku*). The next paragraph contains information on soy

[sauce], *miso*, and *tofu* similar to that in the 1913 and 1914 year books.

In chapter 20, "Industry," is a paragraph (p. 402) on the patented Suzuki process for brewing soy [sauce] similar to that in the 1913 year book. Following that is a small table with production data for Soy [sauce] (in *koku*) for 1912-13, 1913-14 and 1914-15—"Year (March to Feb.)."

In Chapter 22, "Trade" is a table (p. 436) titled "Prices of principal commodities in Japan," which includes prices for 1911-1913 in yen for soy beans (per *koku*), soy [sauce] (per *koku*), and miso (per *kwan*).

In chapter 35, "Chosen (Korea)," under the heading Foreign Trade," is a table (p. 714) on "Staple exports" (in 1,000 yen) which has data on "Beans and peas" for 1910-1914. Under the heading "Agriculture" (p. 716) is a paragraph (p. 717) titled "Barley and soja bean," which gives acreage and yield for soja (year not specified) with the value (in yen) of exports to Japan in 1912.

In Chapter 36, "Taiwan (Formosa)," under the heading "Agriculture," a table (p. 730) titled "Agricultural products" has production data on "Beans and peas" (in 1,000 *koku*) for 1912-1913.

In Chapter 38, "South Manchuria," is a paragraph (p. 743) titled "The soya bean" which has information on South Manchuria's soya bean yield, [soya] bean-cake output, amount exported for specific years, and production at various milling centres (almost same wording as 1914 Year Book). Address: Japan.

531. Porter, Robert Percival. 1915. Japan, the new world-power: Being a detailed account of the progress and rise of the Japanese empire. London, New York, Toronto, Melbourne and Bombay: Humphrey Milford, Oxford University Press. xxiv + 789 p. Illust. Seven colored maps. Index. 23 cm. [soy ref]

• **Summary:** Japan (regardless of race and colour) intervened in the Great War on the side of her ally Great Britain. They worked together successfully against Germany in the siege of Tsing-Tau in 1914 from Oct. 31 to Nov. 7.

Near the front of the book is a table of "Weights, measures and moneys, for Japan, Great Britain, and the USA."

Page 149-50: "The annual average number of immigrants from Japan is about 20,000. Roughly, half go to China and the United States of America... Since 1907 two batches of Japanese emigrants, under 2,000 in all, have gone to Brazil, the majority of which have been under contract with the Sao Paulo Government to work in the coffee plantations." There are now about 155,000 Japanese in the United States. Since a 1907 agreement between Japan and the USA, immigration of Japanese labour to the USA has been restricted. Some Japanese have tried to enter the

USA by going first to Mexico. There are not more than 2,000 Japanese in Canada at present.

Page 232: In Japan: "The necessity for increased military and naval expenditure, which rose in connection with Korea in 1881, called for considerable additional revenue. Fresh military taxes were therefore levied; income-tax was introduced along with indirect imposts [taxes] on soy [sauce], tobacco, confectionery, and stamps, and the tax on *sake* was raised, augmenting the receipts to such an extent that the Government was able in 1886 to reduce the land-tax again. But following the war with China [1894-95] it became necessary to establish occupation and registration taxes, to raise again the *sake* tax, and to create a Government monopoly of leaf tobacco."

A table (p. 233) shows how the ordinary State revenue of Japan was derived in the financial years 1898-99 and 1909-10. The two main sources of revenue were: Land tax (38.4 and 85.7 million yen respectively) and liquor tax (33.0 and 91.5 million yen). By comparison, the soy tax was relatively small: 1.54 and 4.73 million yen.

Page 235-36: "The tax on liquors is levied upon (a) brewers of *shurui* (alcoholic liquor), which is divided into five classes, viz. *seishu*, or refined *sake*, *dakushu*, or unrefined *sake*, *shirozake*, or white *sake*, *mirin*, or sweet sake, and *shochu*, or distilled sake; (b) brewers of beer; and (c) wine and alcohol and alcoholic liquors other than sake or beer."

"Soy tax: The soy tax is levied upon manufacturers of this sauce at the rate of about 1 3/4 yen per *koku*. A tax on soy for household use was introduced in 1900, and ranges from 50 sen to 4 yen per *koku*, according to the amount manufactured. No more than 5 *koku* of soy per annum may be made for household use."

Page 240: A full-page table shows the "Budget for financial year 1911-12." The main sources of "Ordinary revenue" are liquors tax (88.7 million yen), land tax (75.1 million), customs duties (50.5 million), and tobacco monopoly (50.5 million yen). Revenue from the soy [sauce] tax is 4.6 million yen. The sugar excise is 14.7 million yen.

Page 261-62: "The upland fields, being for all intents and purposes unirrigable, are only to a very limited extent utilized for the cultivation of rice. Rotation crops are, however, raised twice a year, usually barley, 'naked barley,' and wheat as winter crops, and soya (more properly soja), sweet potatoes, and millets as summer crops." A key unit of area in agriculture is one *tan* = 0.245 acre. On [lowland] paddy fields, nationwide over the past 10 years, the average yield per *tan* is 7.913 bushels of rice and 6.668 bushels of barley, which may be considered a representative winter crop. "Upland fields, upon the same basis, produce 6.638 bushels of barley as a summer crop and 3.756 bushels of soya bean."

Another key (larger) unit of area in agriculture is one *cho* = 2.45 acre.

A table (p. 263) shows the total area, production, and yield of 17 major crops in Japan in 1897 and in 1910. Both years, the leading crop (by far) in area was rice, followed (in 1897) by barley, naked barley, wheat, and soya bean. For 1897 the three figures for soya beans were: 1,067,000 acres under cultivation, 15,381,000 bushels total production, and 14.41 bushels per acre yield. For 1910 the three figures for soya beans were: 1,137,000 acres, 18,834,000 bushels total production, and 16.56 bushels per acre yield.

Statistics for "small red bean" [*azuki*] are also given: For 1897 268,000 acres under cultivation, 3,069,000 bushels total production, and 11.45 bushels per acre yield. Thus, in 1897 and 1910 the production of soybeans was roughly 5 times the production of *azuki* beans.

Chapter 15, "Agriculture," contains a section titled "Soya bean" (p. 264-65): The soya, or soja, bean is well enough known in England as a cattle-food, but in Japan its application is by no means limited to this use. It is the basis of the Japanese sauce, soy, of which enormous quantities are brewed; of *miso*, or bean cheese [sic], used extensively for soup and in cookery in general; and of *topu* [sic, tofu], or bean curd, a cheap, highly nutritious and very popular article of diet. The residue from these manufactures is used both as fertilizer and as cattle food, or, alternatively, an oil of some value may be obtained from it. It is the principal summer crop of the upland fields, and its cultivation, which requires less fertilizer and less labour than other products, is general throughout Japan and particularly in Hokkaido. But the supply is far from equal to the demand, and a large quantity of beans and bean cake is imported from Chosen and Manchuria, the value of the present importation amounting to £3,000,000 annually.

"Among other beans the small red bean is largely cultivated, especially in Hokkaido, and is used for cakes and confectionery, and boiled with rice on occasions of ceremony. The Japanese are very fond of peas, horse-beans, and kidney-beans, which are grown as a stolen crop after rice in the paddies and just before it in the upland fields."

Page 269: "A comparison of the relative positions of human and animal labour in paddy fields and upland farms for the years 1903 and 1908 (the latest year for which figures are available) shows that the area tilled exclusively by human labour still forms a very large proportion of the total, though it tends steadily to decrease." "Manual labour is plentiful and it is chiefly by reason of its abundance that the intensive system can be carried on. Rice-growing requires, for instance, the labour of 17 men and 9 women per *cho* (2.45 acres), barley and wheat 11 men and 6 women, tobacco 25 men and 23 women, soya bean 7 men and 5 women, and so on. Farmers, in the vast majority of cases, are their own labourers, and those who may be distinguished as 'professional labourers' are a very small class."

Page 292: Sea-weeds: “Chief among the sea-weeds used as food is that known as ‘Kombu’ (*Laminaria*). It grows mostly on the shores of Hokkaido and the south-east of Honshu [Honshu], and is eaten sliced into very thin shreds. ‘Kanten’ is made by dissolving the weed *Tengusa* in water and exposing the resulting gelatinous infusion to the action of cold by night and the sun by day. Only the Chinese use it as food, however; in the West it is a substitute for gelatine, isinglass, starch, and the like. Other sea-weeds are used as paste.” Address: Queen Anne’s Mansions, London, England.

532. Latham, F.P. 1916. Soy beans as a cereal: Soy beans a great crop for southern farmer. *Progressive Farmer* 31(8):254-55. Feb. 19. See also p. 286 (Feb. 26) and p. 342 (March 4).

• **Summary:** “The first mention of the soy bean in this country was in the early part of the 19th century; however, it attracted little attention prior to 1854, when 2 varieties were brought to this country from Japan by the Perry expedition. It followed that other varieties were found and introduced, among them that ‘old standard,’ the Mammoth Yellow, which came to our shores sometime previous to 1882. The success with Mammoth furnished an encouraging lead to our diligent research workers, resulting in the importation into this country by the Department of Agriculture of some 800 distinct varieties.”

As a cereal, it is widely produced in Japan, China, Korea, and Manchuria. “By certain processing of the ground beans a milk is extracted which is not such a poor substitute for the real article; from this a cheese [tofu] is made that resembles in texture and nutrient value, our cottage cheese. Another product is a heavy, rich sauce [miso], similar to our peanut butter, which is consumed in large quantities. Soys occupy the place in the diet of these people that navy and lima beans do in our own, and are prepared in a like manner. They furnish the brown man his ‘peanut.’ By the simple process of soaking in salt water, then roasting they at once become a close competitor of the famous American delicacy.”

“So far as I have been able to ascertain there is but one mill in the United States built for and operating exclusively on soy beans. The Pacific Oil mills, of Seattle, Washington, have build up a lucrative business in this line and only get foreign beans for crushing, its output of both oil and meal meeting a ready demand in the West. That such can be done profitably in the South is no longer a question. The fact has already been demonstrated by several cotton oil mills in eastern North Carolina... If these satisfactory results can be obtained in mills not constructed for the purpose of handling beans, it is entirely reasonable to suppose that specially constructed machinery will in time be installed that will further enhance the profits accruing from such operations.”

A portrait photo shows F.P. Latham.

Note 1. This is the earliest document seen that mentions Pacific Oil Mills of Seattle, Washington.

Note 2. This is the earliest of many articles seen that likens tofu to cottage cheese, or roasted soybeans to peanuts. Address: Belhaven, North Carolina.

533. *Washington Post*. 1916. Admiral Togo, ‘Nelson of Nippon,’ ‘simple life’ model, servants say. May 21. p. ES14. • **Summary:** Admiral Togo, the victor of Tsushima, has never been interviewed and he never speaks about himself. Note: Tsushima Strait was the site of a naval battle in May 1905 in the Russo-Japanese War in which the Russian fleet was destroyed or captured by the Japanese fleet under Admiral Togo Heihachiro.

So the *Katei Zasshi*, a popular monthly magazine, sent reporters to “interview the count’s butcher and baker and candlestick maker, his barber and fishmonger and man at the corner.” By paying attention to his monthly housekeeping bills, they were able to conclude that the hero led a simple, frugal life—which all the tradespeople sincerely admired.

The man at the sake (spirits) shop said: “I get no orders for sake [saké] nowadays and only send in some soy (sauce) and miso (a curd [sic] made from beans and eaten for breakfast) of the commonest quality, occasionally.”

534. Piper, C.V.; Morse, W.J. 1916. The soy bean, with special reference to its utilization for oil, cake, and other products. *USDA Bulletin* No. 439. 20 p. Dec. 22. [9 ref] • **Summary:** Contents: Introduction. Soy beans in Manchuria. Soy beans in Japan. Soy beans in Europe. Soy beans in the United States. Methods of oil extraction. Soy-bean meal as human food. Soy-bean meal as stock feed. Soy-bean meal as fertilizer. Uses of soy-bean oil. Analysis of important varieties of soy beans. Possibility of developing a manufacturing industry with American-grown soy beans.

“Analyses of important varieties of soy beans (p. 16-17):... In determining the range in the oil and protein contents of over 500 varieties grown in the variety tests at Arlington Farm, Virginia, the percentage of oil was found to range from 11.8 to 22.5 [Tokyo had 20.7% and Biloxi had 20.3% oil] and of protein from 31 to 46.9 [Chiquita had 46.9% protein]... At the present time the Mammoth Yellow variety is the most generally grown throughout the South and is the one used in the production of oil. The yellow-seeded varieties, which are most suitable for the production of oil and meal, contain the highest percentage of oil.

“Environment has been found to be a potent factor in the percentage of oil in the same variety. Considerable differences occur in oil content when soybeans are grown in different localities. The Haberlandt variety grown in Mississippi, North Carolina, Missouri, Virginia, and Ohio

gave the following percentages of oil, respectively: 25.4, 22.8, 19.8, 18.3, 17.5; while the Mammoth Yellow variety grown in Alabama, South Carolina, Tennessee, North Carolina, and Virginia gave, respectively, 21.2, 19.6, 19.5, 18.4, and 18.8. Variety tests conducted in various parts of the country indicate a higher percentage of oil with the same variety for southern-grown seed. Similar results have been obtained in Manchuria, the North Manchurian beans showing an oil content of 15 to 17 percent and the South Manchurian beans from 18 to 20 percent."

Photos (both by Frank N. Meyer) show: A fleet of junks carrying soy beans to Newchwang, Manchuria (p. 2). Coolies at Newchwang, carrying loads of soy beans from junks to big stacks (p. 10). An outline map of the USA (p. 8) shows the area to which the soy bean is especially adapted for growing for oil production. The area of double hatching shows that it is especially well suited to the Deep South. The northern boundary of the area where it is "less certain of profitable production" includes the southern one-third of Ohio, Indiana, and Illinois, and most of Missouri. On the west, the "less certain" area includes the eastern one-third of Nebraska, Oklahoma, and Texas.

Tables show: 1. "Exports of soy beans, bean cake, and bean oil from the principal ports of South Manchuria (Antung, Dairen, Newchwang), 1909 to 1913, inclusive." 2. "Quantity and value of exports of soy beans and soy-bean oil from Japan to foreign countries, 1913 and 1914." The countries are: China, United Kingdom, France, Germany, Belgium, United States, Hawaii, British America, Australia, other countries. 3. "Quantity of imports of soy beans, soy-bean cake, and soy-bean oil from Dairen, Manchuria, into Japan, 1911 to 1914, inclusive. The greatest imports were of soy-bean cake, followed by soy beans, with only small amounts of oil.

(4) "Quantity and value of imports of soy beans, bean cake, and bean oil by European countries, 1912 to 1914, inclusive." The countries are: Austria, Belgium, France, Germany, Italy, Netherlands, Russia, Sweden, United Kingdom. In 1912, the UK imported the most soy beans, while Netherlands imported the most cake and oil. (5) "Quantity and value of imports of soy beans, soy-bean cake (Footnote: Includes bean cake [perhaps fermented tofu or canned regular tofu], or bean stick [perhaps yuba], miso, or similar products, with duty, 40 per cent) and soy-bean oil into the United States, 1910 to 1915, inclusive." The quantity of soy bean imports was greatest in 1915 with 3.837 million lb. The quantity of soy-bean cake imports was greatest in 1913 with 7.005 million lb. The quantity of soy-bean oil imports was greatest in 1911 with 41.106 million lb. "Prior to 1914 soy beans were not classified separately in the customs returns" (p. 9). (6) "Composition of soy-bean flour in comparison with wheat flour, corn meal, rye flour, Graham flour, and whole-wheat flour."

(7) "Value of a short ton of soy-bean cake and other oil cakes in the principal European countries" (Incl. cottonseed, linseed, peanut {Rufisque}). Countries: Germany, United Kingdom, Netherlands, Denmark, Sweden. (8) "Analyses [nutritional composition] of soy-bean meal and other important oil meals." (Incl. Cottonseed, linseed (old and new processes), peanut (decorticated), sunflower seed). (9) "Fertilizing constituents [nitrogen, ammonia, phosphoric acid, potash] of soy beans, soy-bean meal, and cottonseed meal."

(10) Analyses for protein and oil of important varieties of soy beans grown at Arlington Farm (Virginia), Newark (Delaware), and Agricultural College (Mississippi). The varieties are: Mammoth, Hollybrook, Manchu, Haberlandt, Medium Yellow, Ito San, Chiquita, Tokyo, Lexington, Guelph, Black Eyebrow, Shanghai, Peking, Wilson, Biloxi, Barchet, Virginia. Note 1. "At the present time, the Mammoth Yellow variety is most generally grown throughout the South and is the one used in the production of oil" (p. 16). (11) "Acreage, production, and value per ton of cottonseed in the boll-weevil states." "Since the boll weevil first entered Texas in 1892," it has steadily decreased production of cottonseed. The soy beans offers a good replacement. (12) "Comparative prices per ton of cottonseed and soy beans on the European market, 1911 to 1914, inclusive." Soy beans are usually slightly more expensive.

Note 2. This is the earliest published document seen that contains soy-related photos by Frank N. Meyer.

Note 3. This is the earliest document seen in which William Morse describes soy milk, or mentions natto, or correctly mentions tofu.

Note 4. This is the earliest document seen (Sept. 2004) that mentions the soybean varieties Biloxi or Lexington. Address: 1. Agrostologist in Charge; 2. Scientific Asst. Forage-Crop Investigations, USDA, Washington, DC.

535. Piper, C.V.; Morse, W.J. 1916. The soy bean, with special reference to its utilization for oil, cake, and other products: Soy beans in Japan, in Europe, and in the United States (Document part). *USDA Bulletin* No. 439. 20 p. Dec. 22. [2 ref]

• **Summary:** "Soy beans in Japan (p. 4):... In many districts it is cultivated not in fields by itself, but in rows along the edges of rice and wheat fields. Although not grown to any considerable extent as a main crop by the Japanese farmer, the average annual production is about 18,000,000 bushels. In quality the beans raised in Japan are said to be superior to those of Manchuria and Chosen [Korea] and are used exclusively in the manufacture of food products. The imported beans, of which very large quantities are obtained from Manchuria and other Asiatic countries, are used principally in the manufacture of bean cake and oil."

"The soy bean forms one of the most important articles of food in Japan. It is one of the principal ingredients in the

manufacture of shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are also eaten as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A 'vegetable milk' is also produced from the soy bean, forming the basis for the manufacture of the different kinds of vegetable cheese. This milk is used fresh and a form of condensed milk is manufactured from it. All of these foodstuffs are used daily in Japanese homes and for the poorer classes are the principal source of protein. To a limited extent, soy beans are used as a horse or cattle feed, being sometimes boiled and mixed with straw, barley, and bran."

"Soy beans in Europe (p. 6): The soy bean was first introduced into Europe about 1790 and was grown for a great number of years without attracting any attention as a plant of much economic importance. In 1875 Professor Haberlandt, of Vienna, begun an extensive series of experiments with this crop and strongly urged its use as a food plant for man and animals. Although interest was increased in its cultivation during the experiments, the soy bean failed to become of any great importance in Europe. At the present time it is cultivated only to a limited extent in Germany, southern Russia, France, and Italy."

"Soy beans in the United States (p. 7): Although the soy bean was mentioned as early as 1804 (Footnote: Willich, A.F.M. American Encyclopedia, 1st Amer ed., v. 5, p. 13. Philadelphia, 1804), it is only within recent years that it has become a crop of importance in the U.S. At the present time the soy bean is most largely grown for forage. In a few sections, such as eastern North Carolina, however, a very profitable industry has developed from the growing of seed... The yields of seed to the acre in various sections of the United States range from about 15 bushels in the Northern States to about 40 bushels in the northern half of the cotton belt. The average yield in eastern North Carolina is about 25 bushels, although many fields produce 35 bushels or more to the acre..." Note: This is the earliest U.S. document seen (June 2003) that cites the 1804 publication by Willich [and James Mease] concerning the soybean in Philadelphia. Note that this article appeared 112 years after 1804.

"The first extensive work in the U.S. with the soy bean as an oil seed was entered upon about 1910 by an oil mill on the Pacific coast. The beans, containing from 15-19% of oil, were imported from Manchuria, and the importations, most of which are used in the manufacture of oil and cake, have gradually increased, as shown in Table V. The oil was extracted with hydraulic presses, using the same methods employed with cottonseed and linseed. It found a ready market, as a good demand had been created for this product by soap and paint manufacturers, which up to this time had been supplied by importation from Asiatic countries and England. The soy cake, ground into meal, was placed on the

market under a trade name and was soon recognized as a valuable feed by dairymen and poultrymen. The use of the cake has been confined almost wholly to the Western States, owing principally to the high cost of transportation."

"An industry which promises to be of importance in a further utilization of the soy bean is the manufacture of 'vegetable milk.' At the present time a factory in New York State is being equipped for this purpose." Address: 1. Agrostologist in Charge; 2. Scientific Asst. Forage-Crop Investigations, USDA, Washington, DC.

536. Togano, Meiji. 1916. Miso no sokujō ni kansuru nidai kairyō yōten [Two major improvements in rapid manufacture of miso]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 11(4):1-6. [Jap] Address: Jozo Shikensho Gishi, Nōgaku-shi, Japan.

537. Fuerstenberg, Maurice. 1916. Die Einfuehrung der Soja, eine Umwaelzung der Volksernaehrung [The introduction of soya, a revolution in the food of the people]. Berlin: Paul Parey. 30 p. Foreword by Dr. Gottlieb Haberlandt, Director of the Plant Physiology Institute, Univ. of Berlin. [5 ref. Ger] Address: Germany.

538. Heinze, B. 1916. Ueber den Anbau der Sojabohne und deren mannigfache Verwendungsart [Cultivation of the soybean and the many ways it can be used]. *Jahresberichte der Vereinigung fuer Angewandte Botanik* 13(Part II):56-76. For the year 1915. [12 ref. Ger] Address: PhD, Halle a. d. Saale, Germany.

539. Japanese American News Inc. / Nichibei Shinbunsha. 1916. Nichibei jūshoroku ERROR! No directory published this year! [The Japanese American directory]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]* Address: San Francisco, California.

540. Klinkert, Hillebrandus C. 1916. Nieuw Maleisch-Nederlandsch woordenboek met arabisch karakter. Derde verbeterde en vermeerde druk [New Malay-Dutch dictionary with Arabic characters. 3rd improved and expanded ed.]. Leiden, Netherlands: E.J. Brill. viii + 1047 p. 23 cm. [Dut; Ara]

• **Summary:** The soybean is mentioned under *katjang* (p. 744) and is written *k. kedelai*. It also appears under *kedelai* (p. 769). Indonesian-style miso [tauco] appears under *taötjo* (p. 247).

Also discusses: *bidjam* (sesamum indicum, p. 224). *ragi* (yeast, p. 484).

Note: This book is hard to use since the order of words follows the Malay alphabet. H.C. Klinkert lived 1829-1913. Address: Leiden [Netherlands].

541. Zhu Chen. 1916. Dongting Dongshan wuchankao [Survey of products of the Eastern Mountain of Dongting lake]. China. Passage on soy reprinted in C.N. Li 1958 #351, p. 249-50. [Chi]

• **Summary:** Wade-Giles reference: *Tung T'ing Tung Shan Wu Ch'an K'ao*, by Chu Chên. Republican period. The section titled "Yellow soybeans" (*huangdou*) states: When fresh, they are called green vegetable soybeans (*maodou*; "hairy beans"); when dry, they are called yellow soybeans. Plant them in the 4th lunar month. The stem grows to a height of 2 feet. The leaves are round with pointed tips. The color is deep green, with little yellow flowers. The pods are a little more than an inch (*cun*) long, have green hairs, and contain 2-3 beans. When the beans are fresh, they are green; but when they grow old, they turn yellow. They are round like pearls. After removing the skin [seed coat] from the individual beans, you will find two parts [cotyledons]. They are like almond seeds. Most beans have that same structure. Green vegetable soybeans (*maodou*) are boiled in the summer and served on a plate as a vegetable.

There are two kinds of green vegetable soybeans. One kind is called *guanbangqing*; in the 5th month you can harvest them as green vegetable soybeans, or in the 7th month you can harvest them as yellow soybeans (mature). Another kind is called *shijixiang*; in the 7th month you can harvest them as green vegetable soybeans, or in the 9th month you can harvest them as yellow soybeans.

For some, you do not wait until they are mature; just harvest the [green] pods and boil them, then spread them in the sun until dry; they are called dry green soybeans (*xunqingdou*). They are also called *maodougan* ("green vegetable soybeans dried").

Green vegetable soybeans (*maodou*) are easily infested by worms. There is no way to prevent this, whereas [mature, dry] yellow soybeans can be stored for a long time. After you get rid of the pods, they do not become wormy.

There are many ways to eat yellow soybeans. You can boil them, roast them, use them to make jiang or tofu (*doufu*), or to obtain oil. These are methods handed down to us from antiquity. Their nature is warm. They benefit the large intestine. If you eat them raw, the flavor is not good; they have an unnatural flavor. If you have an ulcer, then their flavor is sweet. Western doctors say the efficacy of yellow soybeans is better than cow's milk. Therefore, in recent years, many Westerners [in this part of China] have begun to drink soymilk (*doufujiang*), so its price has risen. When you put yellow soybeans among the rice straw and pour water on them, after 6-7 days, the soybeans will sprout to a length of 2-3 inches to become soybean sprouts (*douyacai*). The villagers call them *ruyicai* ("as you wish vegetable") [probably because you can grow soy sprouts quickly, for use as a vegetable, whenever you wish, year-

round]. The stalks can be dried and used as fuel. (Translated by H.T. Huang, PhD, April 2003).

542. *Weekly News Letter (USDA)*. 1917. Soy bean useful crop. May be utilized in greater number of ways than almost any other agricultural product. 4(27):3. Feb. 7. [1 ref]

• **Summary:** "The soy bean... may be utilized in a greater number and a greater variety of ways than almost any other agricultural product..."

"In Japan the soybean forms one of the most important articles of food in use. It is one of the principal ingredients in the manufacture of shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are eaten also as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A 'vegetable milk' is also produced from the soy bean, forming the basis for the manufacture of the different kinds of vegetable cheese. This milk is used fresh, and a form of condensed milk is manufactured from it."

In several European countries and to some extent in America, soy-bean "flour enters largely as a constituent in many of the so-called diabetic breads, biscuits, and crackers manufactured as food specialties.

"Soy-bean milk... has been produced in small quantities in the United States, and recently a factory has been equipped to make this product." In Europe and America soybeans are roasted to make "an excellent substitute for coffee. In Asia the dried beans, especially the green-seeded varieties, are soaked in salt water and then roasted, this product being eaten after the manner of roasted peanuts."

Soy-bean meal (for use as a stock feed) and soy-bean oil are also discussed. "In addition to its availability as a food, soy-bean oil has found important uses in the markets of the world for making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, and lubricants. It is also used in the Orient for lighting and in the manufacture of printing ink."

Reprinted in *Jersey Bulletin and Dairy World* 36:323. Feb. 28; *Ohio Farmer* 139:377. March 10; and *Journal of Home Economics* 9:183-4. April. Address: Washington, DC.

543. *Jersey Bulletin and Dairy World*. 1917. Soy bean a useful crop: May be utilized in a greater number of ways than almost any other agricultural product. 36:323. Feb. 28. [1 ref]

• **Summary:** Reprinted from the *USDA Weekly News Letter* 4:3 (7 Feb. 1917). Also reprinted in *Ohio Farmer*, 139:377. March 10; and *Journal of Home Economics*, 9:183-4. April. Address: Washington, DC.

544. *Ohio Farmer*. 1917. Soybeans for human food. 139(10):377. March 10.

• **Summary:** Reprinted from the *USDA Weekly News Letter* 4(27):3 (7 Feb. 1917). Address: Cleveland, Ohio.

545. McClelland, C.K. 1917. Farms and farmers: Soy beans (Continued). *Atlanta Constitution (Georgia)*. March 18. p. A10.

• **Summary:** Discusses soy bean harvesting machinery and uses for human food (shoyu, miso, natto, tofu, and soy bean meal [flour]). Address: Editor & Prof., Experiment, Georgia.

546. *J. of Home Economics*. 1917. The soy bean. 9:183-84. April.

• **Summary:** “The soy bean, already one of the most important crops of Asia, promises to take an important place in the agricultural industry of the United States. It is said that it may be utilized in a greater number and a greater variety of ways than almost any other agricultural product. Not only are the beans, and the oil expressed from them, available as food, but soy bean oil is used for making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, and lubricants, besides its use in the Orient for lighting and other purposes.

“In Japan the soy bean is one of the principal ingredients in the manufacture of shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are eaten also as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A ‘vegetable milk’ is also produced from the soy bean, not only forming the basis for the manufacture of the different kinds of vegetable cheese, but used fresh, while a form of condensed milk is also made from it. All of these food stuffs are used daily in Japanese homes, and for the poorer classes are the principal source of protein.

“Soy bean oil resembles that of cotton seed in many ways. The meal remaining after the oil is extracted from the beans has become important during the last few years as a food of low starch content, and so adapted to the use of diabetic patients.

“Soy bean flour enters as a constituent into many of the so-called diabetic breads, biscuits, and crackers manufactured as food specialties. The flour or meal may be used successfully in the household as a constituent of muffins, bread, and biscuits in much the way in which corn meal is used.

“An artificial milk like that manufactured in the Orient has been produced in small quantities in the United States, and recently a factory has been equipped to make this product. Such milk may be used for cooking in the household, and by bakers, confectioners, and chocolate manufacturers. Such products must, of course, be properly labeled.

“The soy bean has also been utilized as a substitute for the coffee bean. When roasted and prepared, it makes an excellent substitute for coffee.”

547. Prinsen Geerligs, H.C. 1917. Ueber die Anwendung von Enzymwirkungen in der Ostasiatischen Hausindustrie [On the application of enzymes in East Asian cottage industries]. *Zeitschrift fuer Angewandte Chemie, Wirtschaftlicher Teil* 30(3):256-57. May 8. [Ger]

• **Summary:** Paper read before the *Niederlaendische Chemische Vereinigung* (Dutch Chemical Union), General session in Hague, December 28, 1916.

This paper is on the domestic application of enzyme actions in Eastern countries, and describes, among other things, the making of fermented and non-fermented soybean food products. “To make soymilk (*Milchersatz*), only white soybeans are used, softened in water for 3 hours until they have swollen to 3 times their original size. Then, while water is added continuously, they are milled between two hard stones and fall through a hole in the bottom stone into a pail. A very small amount of the thin soybean slurry is set aside; through the proliferation of lactic acid bacteria it quickly becomes so sour that after several hours that lactic acid content has risen to 1.5%. The above mass is cooked in a large pan. The now pasteurized liquid is filtered through a large sieve to remove the hulls and hard pieces. The filtered milk-white liquid has, in appearance and chemical composition, the greatest similarity with animal milk. A sample contains 6.9% solids, 3.13% protein, and 1.89% fat. It gives an alkaline reaction and contains a solution of legumin bound to potassium phosphate, while the fat is emulsified in the thick protein solution. Unfortunately this soymilk (*Bohnenmilch*) tastes very much like raw French-beans (*Schneidebohnen*), so that people who are accustomed to cow’s milk do not enjoy it much. But infants should be very content with it.

“If cheese is to be made from this milk, a small amount of the slurry soured with lactic acid is added to it. Thereby, the legumin (protein) is dissolved from the potassium phosphate and coagulated, then settles out with the fat with which it is emulsified. When the milk, through several hours mixing with the coagulation liquid, has become fully firm, it is packed in cloths and pressed between boards, in order to remove any excess water. Then the cakes are cut into square pieces; if they are to be eaten raw, it must be done quickly, lest they continuing souring and spoil. In order to impart a pleasant color to the cakes, they may be placed for several moments in a *Curcuma* [turmeric] decoction. Mostly the cakes of cheese (*Kaesekuchen*) are dried in the sun or fried (*gebraten*). They then keep better and acquire a pleasant flavor.”

“Of much greater significance is the preparation of the most popular and prevalent soybean preparation, soy sauce (*der Soja*), which in East Asia is an indispensable seasoning

for a variety of dishes, and is produced and used in unbelievably large quantities. There are various types, some of which contain wheat flour. But here we will consider only the type that is made [in the Dutch East Indies] with soybeans plus some added ingredients to improve the flavor. For the preparation of soy sauce, brown or black soybeans are cooked for several hours. After pouring off the cooking water, the beans are placed in flat pens / trays (*Hürden*) of woven bamboo and dried for half a day in the sun, then cooled in the shade. When they are cooled, the beans are covered with leaves of *Hibiscus tiliaceus*, a species of mallow, and they are soon covered with a layer of *Aspergillus* mold, which is usually found on the tiny hairs or cilia on the underside of the hibiscus leaves and so is transferred to the beans. The mold filaments or hyphae penetrate between the tough and thick cell walls, dissolve these through hydrolysis, and thus make the cell contents accessible to the influence of the molds. The mold is allowed to work until it forms spores (*Fruchtstaende*). The beans then appear to be covered with a brownish green felt. The beans are then dried in the sun and placed in a strong, cold salt solution. The mixture is placed in the sun for several days and then cooked. The brine solution, which contains the soybean extract, is poured off and the beans are cooked several more times until they have lost their salty taste. The various cooking extracts are mixed, filtered through a fine sieve, then mixed with palm sugar, aniseed [*Pimpinella anisum*], and an herb extract, which one can buy at a druggist's shop, and finally cooked until salt crystals appear. The soy sauce (*Soja*), which is now ready to use, is a dark brown, thick, very salty liquid, in which a viscous sediment forms. By thinning with water, it becomes turbid. But the solution again becomes clear with the addition of salt. This thorough investigation has shown that the mold hyphae branch out into the cell walls, hydrolyze and dissolve the pectin substances, and likewise break down the protein content of the cells to leucine, tyrosine, asparagine, and other decomposition products of legumes.

“But this action and result is of secondary importance. The main point is the dissolution of the cell walls, whereby the protein becomes free and can be dissolved in the concentrated salt solution. The composition of soy sauce, except for the salt content, is very similar to that of meat extract, so that it can completely replace meat in the largely vegetarian diets of the people of the East.

“In a similar way, various other foods are obtained, whereby a mold dissolves the cell wall and so fulfills the function otherwise accomplished by cooking. We mention here only the bean paste (*Bohnenbrei*) [*tao-tjo*], for the preparation of which, dehulled white soybeans are cooked and then mixed with rice flour and glutinous rice flour (*Kleereismehl*). The mixture is placed in a small basket that is lined with the same hibiscus leaves mentioned above, and the *Aspergillus* molds growing on the leaves are allowed to

develop. This saccharifies the rice starch flour and dissolves the bean cell walls. Thereby, the mixture becomes sticky and glutinous, and tastes sweet. It is dried and placed in a pot with saltwater. There it remains until each bean is permeated with salt and a sample tastes salty. Palm sugar is added to taste and it is ready for use without further cooking. Microscopic analysis showed that the cell walls were completely dissolved and the contents lay free, so that the mold growth had greatly improved the digestibility of the beans.

“In Java, soybeans are also cooked and made into flat cakes on a flat bamboo lattice. A small piece of an old cake is added and the mass is covered with banana leaves. One soon observes a rise in temperature and the development of moisture. The mass is penetrated by hyphae of *Rhizopus Oryzae*, which again dissolves the cell walls and frees their contents. The cake [tempeh, though the term is not mentioned] with its covering of mold, is consumed without further processing, raw or fried (*gebraten*).

Also discusses the preparation of onchom from peanut press-cake. Address: PhD, Netherlands.

548. Hagerty, Michael J. trans. 1917. The beans: Imperial encyclopedia (T'u shu shih ch'eng. Published, 1728). 18 p. May. 28 cm.

• **Summary:** This section on beans (including soy beans) appears in the encyclopedia in Category IV—Science (*Po Wu Hui Pien*), Section 20—Vegetable Kingdom (*Ts'ao Mu Tien*), Subheading—Beans (*Tou Pu*), Book 35. Virtually all of the translation concerns a General Chronological Survey (*Hui K'ao*). For many of the longer detailed sections concerning soy beans, the translator refers the reader to his 1917 translation of: Wu Ch'i-chün, ed. 1848. *Chih wu ming shih t'u k'ao*.

A table (p. 11) compares the nutritional composition of [soy] bean milk and cow's milk.

Note: This book was presented to the U.S. Department of Agriculture Library by Mr. W.T. Swingle. Address: Translator of Chinese, Office of Crop Physiology, Bureau of Plant Industry, USDA.

549. Hagerty, Michael J. trans. 1917. The soy bean (ta tou), by Wu Ch'i-chün, in *Chih wu ming shih t'u k'ao*, Published 1848 at T'ai-yüan-fu, Shansi [China]. Translated and indexed by M.J. Hagerty, Chinese translator, Office of Crop Physiology and Breeding Investigations, May, 1917. Washington, DC. 6 + 96 p. May.

• **Summary:** See: Wu, Ch'i-chün. 1848. Ta tou [The soy bean]. Address: Translator of Chinese, Office of Crop Physiology, Bureau of Plant Industry, USDA; Berkeley, California.

550. *New York Times Magazine*. 1917. Woman off to China as government agent to study soy bean. Dr. Kin will make

report for United States on the most useful food of her native land. June 10. p. 9. (New York Times section 6).

• **Summary:** The *New York Times Magazine* is part of the Sunday *New York Times* and may be simply cited as such. Dr. Yamei Kin is “the only Chinese woman with a physician’s diploma from an American college,” the Woman’s Medical College of New York. “She left New York a few days ago for the orient to gather data on that humble but nutritious food [the soy bean] for the Department of Agriculture at Washington.” During World War I, new demands are being placed on America to feed its citizens and allies. “The appointment of Dr. Kin marks the first time the United States Government has given so much authority to a Chinese. That it is a woman in whom such extraordinary confidence is now reposed detracts nothing from the interest of the story.”

China was the first country to invent paper, printing, gunpowder, porcelain, chess, playing cards, and silk. “And now Dr. Kin is going to see if her native land can teach the United States how to develop a taste for the soy bean in its numerous disguises...

“‘The world is in need of tissue-building foods,’ said Dr. Kin, ‘and cannot very well afford to wait to grow animals in order to obtain the necessary percentage of protein. Waiting for an animal to become big enough to eat is a long proposition. First you feed grain to a cow, and, finally, you get a return in protein from milk and meat. A terribly high percentage of the energy is lost in transit from grain to cow to a human being.’”

“‘The statement is frequently made that the Orientals live almost exclusively upon rice, eating little meat. It is not generally known, perhaps, that deficiency in protein is made up by the consumption of large quantities of products of the soy bean, which take the place in our dietary of meat and other costly nitrogenous foods. They are eaten in some form by rich and poor at almost every meal. Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy bean, which is protein, meat, and milk in itself. We do not eat the plain bean in China at all. It is never eaten there as a vegetable, but in the complex food products—natto, tofu, miso, yuba, shoyu, and similar dishes.

“‘The chief reason why people can live so cheaply in China and yet produce for that nation a man power so tremendous that this country must pass an Exclusion act against them is that they eat beans instead of meat.’”

She then describes how to make tofu. “‘Soup noodles are made out of bean curd. Entrées made of bean curd are served with cream mushroom sauce or a hot Spanish tomato sauce. A salad of bean sprouts, accompanied by cheese—the cheese [fermented tofu] a cross between Camembert and Roquefort, and made from the soy bean—is very nutritious and palatable. Americans do not know how to use the soy

bean. It must be made attractive or they will not take to it. It must taste good. That can be done. We make from it a delightful chocolate pudding. A black soy bean sauce we use as a foundation for sweetmeats in China.” Note: None of the various Chinese food experts whom we have asked can understand what Dr. Kin means by the previous sentence. None has ever heard of a “black soy bean sauce” that is used as a foundation for confections or sweets in China. The two black soy bean sauces made in China, from either soy nuggets or jiang, are both salty. (WRS Jan. 2009). Nevertheless: This is the earliest English-language document seen (Oct. 2008) that uses the term “black soy bean sauce” to refer to a kind of sauce made from soybeans.

“The soy bean contains practically no starch, which means that it is a most desirable food for diabetics, and also, of course, for vegetarians. Buddhists kill no animals—they thrive by making a specialty of the soy bean, which, by the way, is already being used in the French Army. They find there that soy bean mixed with flour makes a good cracker, more nourishing than any other cracker.”

“The Chinese do not know what worn-out soil is. Some places are so fertile and are cultivated with so much care and skill that three or four crops a year are regularly gathered... it is very common to see two crops in the same field at the same time... The Chinese have a passion for fertilizing the soil...”

“Dr. Kin is a graduate of the Woman’s Medical College of New York, and her great interests have always been domestic sanitation, civic hygiene, the conservation of life, and questions of nutrition. She is the head of the Imperial Peiyang Woman’s Medical School and Hospital, near Peking... the Imperial Infant Asylum in Tien-tsin, the Widows’ Home, and the Girls’ Refuge all come under her supervision as head of the woman’s hospital work of Northern China. She will return to this country in October, bringing to our Government the detailed results of her study of the uses of the soy bean as a foodstuff needed by this country and by the world in the campaign of food raising and conservation.” An illustration (line drawing) shows a portrait of Dr. Yamei Kin.

Note 2. This is the earliest published document seen (July 2000) that mentions Dr. Yamei Kin. Frank N. Meyer wrote letters about her in 1911 and 1916.

Note 3. This is the earliest document seen (Oct. 2001) that mentions a soy pudding (a “delightful chocolate pudding” made from bean curd).

551. *Literary Digest*. 1917. To study the soy-bean for Uncle Sam. 55(2):52-53, 55. July 14. Whole No. 1421.

• **Summary:** This is a lengthy summary of an interview with Dr. Yamei Kin, published in *The New York Times Magazine* on 10 June 1917. It includes several lengthy excerpts. “So interested has the United States become in this discovery [China’s knowledge of the soy-bean] that Dr. Yamei Kin, a

Chinese woman graduate of an American college, has been sent back home to gather for the Agricultural Department at Washington [DC] all the facts that are known in China about the soy-bean.”

“Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy-bean, which is protein, milk, and meat in itself,” says Dr. Kin.

“The plain bean, however, is never eaten, but it furnishes such products as natto, tofu, miso, yuba, shoya [sic, shoyu], and other dishes with queer-sounding names...”

A letter dated 26 March 1917 from Frank N. Meyer in China gives the address of Dr. Mrs. Yamei Kin as 500 W. 111th St., New York City.

552. Ishii, Eiichi. 1917. Mamekasu-sei pate [Paste from soy bean refuse]. *Japanese Patent* 31,331. July 19. 2 p. [Jap] Address: Manchuria (probably); Kanto-shu, Ryojun-shi.

553. *New York Produce Review and American Creamery*. 1917. Navy bean has rival: Soybean has higher food value—Bean milk preparation. 44(14):565. Aug. 1. [1 ref]

• **Summary:** Discusses the advantages of soybeans over navy beans, based in part on *Ohio Agric. Exp. Station Bulletin* 312. “Soybeans are rapidly finding a place as human food, used as common white beans and in new preparations, but more nutritious and economical. Less risk and labor are involved in growing and harvesting soybeans as compared with navy beans.

“Boiled or baked alone, or in combination with pork, potatoes or rice, soybeans take the place of navybeans. Soaking over night in considerable water is necessary to remove the strong flavor of the beans. A little soda in the water during cooking makes them softer.

“Green soybeans cooked in the pod shell easily, and make a palatable dish when served with butter or milk. The pods are tough and seldom eaten.

“A little soybean flour added to cornmeal makes mush made from the mixture brown and quicker and increases its food value.”

“Soy sauce, bean milk, bean curd and a ripened vegetable cheese called ‘miso’ are common foods made of soybeans in Japan and China.”

Note: This is the earliest English-language document seen (Oct. 2001) that uses the term “soybean flour.” Address: New York.

554. *USDA Bureau of Plant Industry, Inventory*. 1917. Seeds and plants imported by the Office of Foreign Seed and Plant Introduction during the period from January 1 to March 31, 1914. Nos. 36937 to 37646. No. 38. 105 p. Aug. 17.

• **Summary:** Soy bean introductions: 37036 to 37058. From Chusan, Chosen (Korea). Presented by Rev. George H. Winn, Presbyterian Mission. Received Jan. 28, 1914.

“37036 and 37037. Soja max (L.) Piper. (*Glycine hispida* Maxim.)

“37036. ‘No. 1. *Yulgochi* bean. Very hardy, will grow and produce where the ordinary beans will not amount to much.’

“37037. ‘No. 2. *Kambool*. Very commonly found in the markets.’

“37038 and 37039. *Phaseolus angularis* (Willd.) W.F. Wight. Adzuki bean.”

“37040 to 37055. Soy bean.

“37040. ‘No. 5. Brown mottled bean; carefully cultivated and given sufficient fertilizer.’

“37041. ‘No. 6. Brown. Planted around the edges of the rice fields or where there is a small corner that can be utilized, they are very hardy and will grow and produce where the ordinary beans will not amount to much.’

“37042. ‘No. 7. Large white-eyed bean; carefully cultivated and given sufficient fertilizer.’

“37043. ‘No. 8. Large green bean. The larger beans are all carefully cultivated and given sufficient fertilizer.’

“37044. ‘No. 9. Black mottled brown bean. As a rule, the smaller beans are planted around the edges of the rice fields or where there is a small corner that can be utilized. They are very hardy and will grow and produce where the ordinary beans will not amount to much.’

“37045. ‘No. 10. White mottled black bean; carefully cultivated and given sufficient fertilizer.’

“37046. ‘No. 11. Ordinary green bean. As a rule, these beans are planted around the edges of the rice fields or where there is a small corner that can be utilized. They are, however, often planted in fields. They are very hardy and will grow and produce where the ordinary beans will not amount to much.’

“37047. ‘No. 12. Brown mottled bean; often planted around the edges of rice fields and where there is a small corner that can be utilized; very hardy and will grow and produce where ordinary beans will not amount to much.’

“37048. ‘No. 13. Large blue bean; carefully cultivated and given sufficient fertilizer.’

“37049. ‘No. 14. Large black bean; carefully cultivated and given sufficient fertilizer.’

“37050. ‘No. 15. Small black bean; grown around the paddy fields. It is cultivated in larger areas because it is supposed to be extra nourishing, and some seem even to suppose it has medicinal properties, but I fear there is not much to it.’

“37051., ‘No. 16. The larger beans are all carefully cultivated and given sufficient fertilizer.’

“37052. ‘No. 17. The red bean; carefully cultivated and given sufficient fertilizer.’

“37053. ‘No. 18. Black mottled yellow. Small beans which are planted around the edges of the rice fields or where there is a small corner that can be utilized; very hardy and will grow and produce where the ordinary beans will not amount to much.’

“37054. ‘No. 19. Maroon bean. One of the larger beans, all of which are carefully cultivated and given sufficient fertilizer; but this is not very commonly found.’

“37055. ‘No. 20. Ordinary white bean. One of the larger beans; carefully cultivated and given sufficient fertilizer.’”

“37062 and 37063. Soy bean. From Harbin, China. Presented by Mr. Southard Warner, American consul, at the request of the American consul at Newchwang. Received Feb. 5, 1914.

“See report on the ‘Soya Bean of Manchuria,’ 1911 [by Norman Shaw, Dairen].

“37062. Grown south of Harbin.

“37063. Grown north of Harbin.”

“37069 to 37083. From Tientsin, China. Presented by Dr. Yamei Kin, Peiyang Woman’s Medical School and Hospital. Received Feb. 6, 1914.

“37074 and 37075. Soy bean.

“37074. ‘*Yüeh ya tou*, literally ‘moon-tooth’ bean, so called from the edge of the green peeping outside of the black thick skin like the crescent moon in the sky. Is largely used for making bean sprouts, which they say requires a bean that is not mealy or farinaceous, as that kind becomes mushy in the process of germination and has no taste left. Also is good for feeding animals, requiring to be lightly steamed before feeding, not boiled, for then the oil escapes and the flavor is lost. This kind is valued for its oil, which it contains in a great amount, and for making bean curd. This must be grown in a well-drained clay soil; black or moist earth will not do.’

“37075. ‘*Cha tou*. Specially used for making bean curd and bean sprouts.’”

“37077. Soy bean. ‘*Huang tou*. Used for making bean curd as well as starch and vermicelli.’ Note: #37078 is Mung bean (*Phaseolus aureus* Roxb. [Roxburgh], *Lü tou*).

“37080. Soy bean. ‘*Ching tou*. Used only for the oil expressed and fodder purposes.’”

“37228 to 37325. Soy bean. From Seoul, Chosen (Korea). Presented by Mr. George H. Scidmore, American consul general. Received Feb. 17, 1914.

“I submit the following information, which has been obtained, for the most part, from the Director of the Department of Agriculture, Commerce, and Industry, of the General Government of the Chosen. The same officer has very kindly supplied samples of 98 varieties of soy beans.

“The usual period during which the seed is sown extends from the middle of May to about July 10. In case the sowing is postponed till the latter part of that period, the fields from which wheat has already been harvested are used. The soil is first prepared by plowing and is then

shaped into small hemispherical hillocks about 4 ft in diameter. The seed is then planted in drill holes on the top of these hillocks, 6 or 7 inches being left between drill holes and 5 or 6 seeds being sown together in a hole. As a general rule, no manure or other fertilizer is used, but when it is desired to enrich the soil ashes are most commonly employed. After the plants have sprouted sufficiently, the shoots are thinned out so as to leave two or three only to each drill hole. This process takes place at the time of the first weeding. The ground surrounding the plants is gone over with a hoe or other implement two or three times to turn over the soil and to weed the field. The process outlined above gives briefly the method of cultivation generally in use throughout Chosen, and is applicable whether the beans are planted in separate fields by themselves or in the same fields with other crops.

“It is used mainly for its food value, the oil, and the residue as a fertilizer after the oil has been expressed. It is valuable as a food product for both men and cattle, the latter finding it a very excellent fodder when the whole plant is used. The principal food products for human consumption derived from the soy bean are bean paste [jang, Korean miso], soy [sauce, kan jang], bean curd, meal, etc.’” There follows a long list of 98 new soybean introductions from Korea, grouped by seed color; the first four are representative of the rest:

“37228. ‘A1. *Six Months*. Yellow. From South Chusei Province, Kosu district.’

“37229. ‘A2. *Widower*. Yellow. From North Heian Province, Seisen district.’

“37230. ‘A3. *Broad River*. From South Heian Province, Junan district.’

“37231. ‘A4. *White*. Yellow. From North Zenra Province, Chinan district.’

“37232. ‘A1. *Early Yellow*. Yellow. From North Heian Province, Kokai district.’

Note: This is the earliest document seen (March 2009) that mentions Korean-style soy bean paste; it is also the earliest English-language document seen (March 2009) that uses the term “bean paste” to refer to Korean soybean paste (*jang*).

Other interesting names among these 98 introductions from Korea are: *Rengyo Egg*, *Large-Grained White*, *White Rat’s Eye*, *Rich and Virtuous*, *Large Date*, *Indigo*, *Bluish*, *Barbarian Blue*, *Clasped Hands*, *Clear Blue*, *Black Rat’s Eye*, and *Thousand Tied*. A tally of the seeds by color shows: Yellow 35. Green 22. Gray 17. Black 16. Striped 8. Note that Yellow seeds comprise only 35.7% of the total by color. Address: Washington, DC.

555. Park, J.B. 1917. Soybeans as human food: Palatable dishes made from a comparatively new legume. *Ohio Agric. Exp. Station, Monthly Bulletin* 2(9):299-303. Sept. Extract

from Ohio Agric. Exp. Station, Bulletin No. 312, "Soybeans: Their Culture and Use." [2 ref]

• **Summary:** For details, see Williams and Park. 1917. "Soybeans: Their Culture and Use." Address: Ohio.

556. Eddington, Jane. 1917. The Tribune Cook Book: Beans, soy special. *Chicago Daily Tribune*. Oct. 14. p. E8 (Part 6, p. 8).

• **Summary:** "We do not know enough about that most charming family of plants which furnish us the meat stuff of the vegetable kingdom, or vegetable protein."

"Don't forget the soy bean,' was one of the commands urged on growers this year, 'for there is sure to be a larger demand for the beans for human food.' Last year these beans cost no more than a third as much as navy beans and only a fourth as much as limas, and more people were trying them and failing in their cooking than ever before. They really ought never to be subject to a boiling temperature. Protein of any sort is easily hardened by much heat, and these beans have a high per cent of this food principle. With this in mind they may be baked, etc., like navy beans.

"The soy bean, though so long used in China and Japan, whence we have such products as soy sauce, was introduced many years ago into the United States as a soil renewer and fodder crop."

Years ago, experiment station bulletins were discussing "the total digestible nutrients" of fodder crops. Yet more than 25 years were to pass "before even a few people would listen to the word 'nutrient' in reference to their own diet. 'Roughage' was a term much used that far back, as contrasted with such condensed foods as grains, while now we use the term in talking about human diets."

"Perhaps we shall some time learn to make the bean curd of soy beans which the Chinese use so much. I am hoping to get a precise recipe. The soy bean flour came into use some time ago."

"The medical writers, who for a considerable number of years have used this bean extensively and written much about it with recipes," say that the "yellow soy bean" contains 35 per cent protein.

The section titled "Soy bean cheeses" contains a long excerpt from Friedenwald and Ruhrah (1913, p. 124-26), which states that the most common of these "cheeses" are natto, tofu, miso, juba [sic, yuba], and shoyu. A brief description of each is given.

The last section, titled "Home made soy bean flour," again discusses Friedenwald and Ruhrah, "patent soy bean flour, mostly known to doctors only," grilled soy beans, diabetics, and a recipe for home made soy flour.

557. Frazer, Robert, Jr. 1917. Japan. Kobe. *Supplement to Commerce Reports [USA] (Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce, Department of Commerce)* No. 55c. Dec. 31. p. 15-40.

• **Summary:** Goods shipped from Osaka to all countries: Pea cheese (miso): In 1915 612,517 lb worth \$16,379 was exported; in 1916 this rose to 886,245 lb worth \$23,268. Soy sauce: In 1915 80,977 gallons worth \$32,157 were exported; in 1916 this decreased to 73,261 gallons worth \$29,881.

Imports at Kobe from other countries included soya beans and oil cake. Tables summarize imports to and exports from Osaka for the years 1915 and 1916. Address: Consul, Kobe, Japan.

558. **Product Name:** Koji, Miso.

Manufacturer's Name: Fujimoto Koji, Miso Seizo-sho (Fujimoto Koji & Miso Manufacturing Co.).

Manufacturer's Address: 1014 Stockton St., San Francisco, California. Phone: Kearny 2339.

Date of Introduction: 1917.

New Product–Documentation: The Japanese American Directory. 1919. p. 68. Also in 1920, p. 45 (½-page ad; all in Japanese characters. Miso manufacturing department. Koji manufacturing department. And pickles manufacturing department. Rice, shoyu, soybeans, and other merchandise sales department), and p. 57 (directory). Also in 1921, p. 58 (½-page ad) and p. 64 (directory). Also in 1922, p. 30 (full-page ad) and p. 40 (directory).

Shin Sekai-sha. 1922. *Zaibei Nippon-jin Kan (Directory of Japanese in the USA)*. p. 41. A half-page display ad states: "Fujimoto Co., San Francisco, California. Kanemasa miso." Note: A metal square used by traditional Japanese carpenters is called a *kane-jaku*. Thus a trademark with the same right-angle is pronounced "Kane."

The Japanese American Directory. 1924. p. 58. New address: 328 Jackson St. Phone: Douglas 1216. Also in 1925, p. N-17. Also in 1926, p. N-22.

San Francisco City Directory. 1925. First listing for Fujimoto Co. in this English-language directory (E.K. Fujimoto). Food products. 238 Jackson St. Phone: Douglas 1216. No mention that they make miso.

The Japanese American Directory. 1930. p. 18 (directory; new company name: Fujimoto Miso, Shoyu Seizō-sho, 238 Jackson St., San Francisco. Note: The company has apparently started to make shoyu / soy sauce) and p. A-11 (full page ad; Fujimoto Shokai, 238 Jackson St. Makes Kanemasa brand shoyu, miso, koji, and Japanese-style pickles (*tsukemono*)) and p. A-11 (ad; makes Kanemasa brand shoyu, miso, koji, and Japanese-style pickles (*tsukemono*)). Also in 1932 directory, p. 17, but the name has returned to Fujimoto Miso Koji Seizō-sho. Same address and phone (Douglas 1216). Also in 1934, p. 20. Phone: EXbrook 1756; Ad (½ page. The top 1/3 of this ad is in English. Fujimoto Company. 238 Jackson St., San Francisco. Cable address: "Fujimoto" San Francisco. Importers Manufacturers Exporters. In Japanese: Makers of Kanemasa brand miso, koji, Japanese-style pickles

{*tsukemono*}, salmon pickled in saké lees {*kasuzuke*}. Specialized U.S. seller of nigari. Direct import and export). Also in 1936, p. 34, but the address is now 246 Front St.

San Francisco City Directory. 1930, same. Importers and exporters of food products, 238 Jackson. Tel. Douglas 1216. Retail store 1640 Post. Tel. West 0733. Fujimoto, E.K. (Miyako). Fujimoto Co. residence 1640 Post.

The Japanese American Directory. 1937. p. 8. Under the category "Importers of groceries:" Fujimoto Shokai, Fujimoto Co., 246 Front St., EXbrook 4776, 4777. But in the directory under "Food products manufacturers:" Fujimoto Miso Koji Seizô-sho. And on p. 9 is a ½-page ad. Also in 1938. p. 6 and 8 (directory) and p. 7 (full-page ad). Also in 1939. p. 6 (full-page ad) and p. 7 (directory, under both importer and manufacturer)

The Japanese American Directory. 1940. p. 7. Under the category "Food Products Manufacturers." Fujimoto Miso, Koji Seizô-sho (Fujimoto Co.), 246 Front St., San Francisco. Phone: EXbrook 1756. A full-page display ad on page 6 states that Fujimoto Company (Fujimoto Shokai) is an importer, manufacturer, and exporter. They make Kanemasa Miso, Koji, and Tsukemono (Japanese-style pickles). They also sell raw materials for making tofu (presumably whole soybeans and one or more coagulants). Also in 1941 Directory (p. 6, 7, and 28) as Fujimoto Shoten (Fujimoto Co.).

Chicago Shimpō, Inc. 1958. Chicago Japanese American directory. Page 19: ¼ page ad for Fujimoto & Company, 302 South 4th West, Salt Lake City, Utah. Tel. EMpire 4-8279. Illustrations show: (1) The company's Kanemasa brand; (2) A Japanese woman kneeling behind a porcelain mortar (*suribachi*), holding a wooden pestle (*surikogi*), and using it to grind miso until it is smooth. The woman has a unique head-covering called a hōkaburi, hōkamuri, or hokkamuri. The top 25% of the ad is in English; the rest, which is in Japanese, states: *Kanemasa (brand / logo) Edo Miso, Koji. Sake-kasuzuke. Sujiko Kasazuke. Matsukaze-do, san-mi Yōkan (Mitsuaji? Yōkan). Yuta-shu, Enko-shi, Fujimoto Shokai.* In English: Kanemasa (brand / logo) Edo Miso, Koji. Salmon pickled in saké lees. Salted salmon roe pickled in saké lees. Matsukaze-do brand 3-flavored Yōkan. Salt Lake City, Utah. Fujimoto Shōkai.

Hokubei Mainichi Nenkan (Year Book). 1970. Page 11. Same ¼-page ad as in 1958 Chicago Shimpō.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. The earliest known miso company in the continental USA was founded by Mr. Genpei Fujimoto, and began operation in 1917. In 1942 it was the largest miso company in the continental USA. During World War II, in about 1943-44, because of the Japanese evacuation, it was shut down and moved to 302 South Fourth West, Salt Lake City, Utah. It was reestablished in Salt Lake City after the war by the son of the founder, Edward Kanta Fujimoto, and his wife, Shizue. Note: The source of this information was

probably Edward Fujimoto or his wife, who told it to Shurtleff in a phone interview in 1983. Although we have documents showing that Fujimoto started before 1919, we will accept the date 1917 until further evidence is available.

See separate record for Fujimoto in Salt Lake City.

559. Couling, Samuel. 1917. *Encyclopaedia Sinica: Bean, Soya*. London: Oxford University Press, Humphrey Milford; Shanghai: Kelly and Walsh. See p. 46. [2 ref]
 • **Summary:** "*Glycine hispida*, Monch. or *Dolichos soja*, L. This bean, so valuable for the oil which is expressed from it, has come into great prominence of recent years, owing to the enormous dimensions of the export trade in it since the Russo-Japanese War... The oil-yielding variety par excellence is the yellow bean, of which nearly 15 million piculs, or not far short of one million tons, were exported in 1915, 90% of this being from Manchuria, and the balance from Chihli, Hupei and Kiangsi... For several generations beans, but more especially beancake, had been sent to South China as manure for the sugar plantations; exportation abroad was prohibited until 1869, when shipments were made to Japan, which soon became a large customer both for beans and bean oil... In the Far East soya beans are used, as human foodstuffs, for making soy [sauce], bean paste, or *chiang*, as *tou fu* or beancurd, in soups, etc.; in cooking instead of rapeseed and sesamum oil; and the cake is employed as a fertilizer and for fattening hogs... Besides the Soya Bean there are many other kinds of bean cultivated in China, and entering largely into the diet of the people. The chief of these is *Phaseolus mungo* L, the green bean Lü Tou [mung bean], which contains little oil but is used in the manufacture of vermicelli.

"The annual export of vermicelli, principally from Chefoo, is considerable—amounting in both 1913 and 1915 to nearly Hk. Tls. [Haikwan Taels] 3,000,000; it goes to Chinese emigrants abroad." Address: M.A. (Edin.), Lately honorary secretary and editor, North China Branch, Royal Asiatic Society.

560. Crevost, Charles; Lemarié, Charles. 1917. *Catalogue des produits de l'Indochine*. 5 vols [Catalog of the products of Indochina. 5 vols.]. Hanoi: Imprimerie d'Extrême-Orient. 175 p. 29 cm. Formerly published in *Bulletin Economique de l'Indochine*, Vols. 25 and 26. [Fre]

• **Summary:** Volume 1 (published 1917), titled *Produits Alimentaires et Plantes Fourragères (Nutritious Products and Forage Plants)*, describes plants grown in Indochina and the nutritive value of each. Pages 106-09 describe "Soja—*Glycine Soja*," the soybean. Local names are given in Annam and Tonkin, Cambodia, China, and Japan. "The plant is widely cultivated in Indochina for its seeds, which are consumed in various forms. Soybean seeds in Indochina are typically yellowish white... It is well known that the Japanese use the soybean to prepare a sauce named *shoyu*

(*teou yeou* in China), as well as a *fromage de pâte* or vegetable cheese named *to fu* [tofu], or *teou fou* in Chinese. The Annamites also prepare an analogous sauce named *tuong* and a *fromage de pâte* named *dau phu* and *dau phu-ao*. Cambodia and the Indochinese province of Châu-dôc produce significant quantities of soybeans, of which a part is sent down to Saigon to be consumed or exported. There are good varieties on the high plateaus of Tonkin, especially in the province of Lang-son, whence large amounts can be obtained for export.

“The dead leaves are ordinarily burned. However some indigenous people partially burn the stems of the soybean plants, stripped of their leaves, to obtain a very fine charcoal dust or ash, which they mix with the resinous balm of *Canarium commune*, to use in making joss sticks. These are slender incense sticks burned as offerings in the pagodas and at the altars of their ancestors in their family homes.” [Note: A joss house is a Chinese temple or shrine.] A large, excellent, and very detailed illustration (p. 108) shows a soybean plant, with leaves, pods, seeds, and flowers. Nutritional analyses of soybeans from Laos, Tonkin, and Manchuria are given (from other sources).

Volume 3, titled *Matières Grasses Végétales (Fats and Vegetable Matter)*, includes analyses of Indochinese plants and their fat and oil contents. The contents of Vol. 3. was first published in the *Bulletin Économique de l'Indochine* 1922-1924. Pages 75-78 discuss “Soja–Soja Max (Lin.) Piper,” the soybean. “Mr. Li Yu-ying, a member of the Biological Society of the Far East, has greatly contributed, following several attempts made for more than a century by naturalists and those who acclimatize plants, to popularize in France this plant of many uses. He introduced cultivation of the plant in the area around Paris and, in Paris itself, in 1908 he established a laboratory for the study of the soybean, since completed by a soyfoods factory (*l'usine de la caséo-sojaïne*), where all the products derived from this plant are manufactured: Soymilk (regular, concentrated, powdered, or fermented), tofu (*fromage de soja*), soya patés, soya casein, soy flour and bread, etc.” The rest of the article is concerned mostly with characteristics, uses, and trade of soybean oil.

Crevost was born in 1858. Note: The meaning of soya casein is not clear. Address: 1. Inspecteur des Services agricoles et commerciaux; Conservateur du Musée [Maurice Long] agricole et commercial de Hanoi; 2. Ingénieur-Agronome, Directeur des Services agricoles et commerciaux du Tonkin, Lauréat de la Société nationale d'acclimatation.

561. Fuerstenberg, Maurice. 1917. *Die Soja, eine Kulturpflanze der Zukunft und ihre Verwertungsmöglichkeiten* [The soybean, a cultivated plant of the future, and possibilities for its utilization]. Berlin: Paul Parey. 40 p. [59 ref. Ger]

• **Summary:** Dedicated to the Prof. Friedrich Haberlandt, who introduced the soybean to Central Europe. Contents: Foreword. Introduction: The soybean. Ways of using the soybean in its homeland (East Asia, especially Japan and China). Shoyu or soy-sauce. Miso (vegetable cheese). Natto. Tofu of the Japanese or Tao-hu of the Chinese (bean cheese). The soybean as an oilseed. Soybean meal (and flour). Soya as a coffee substitute or extender. Soybean milk. Soya meat substitutes. Soybeans as a chocolate substitute. Soya rubber substitute. The utilization of soya in agriculture: As cow fodder. Summary. Bibliography. Photos show: (1) A field of soybeans (p. 6). (2) A soybean plant with the leaves removed to show the pods (p. 12). (3) Soy beans and pods (p. 13). Contains numerous tables, mostly from other sources: pages 11, 16-17, 19, 25, 27, 30, 35-37. Contains one of the best early European bibliographies on the soybean.

The author wrote this book during World War I. In his first book, published one year earlier in 1916 and titled “The Introduction of Soya, a Revolution in the Food of the People,” he discussed what he believed to be the great agricultural and nutritional value of the soybean. He uses two terms, *Die Soja* and *Die Sojabohnen* to refer to soybeans.

Chapter 1 (p. 5-7): In 1908 England started to import large quantities of soy beans; in 1909 these increased to 400,000 tonnes and in 1910 to 800,000 tons. Also in Germany, in the years just before World War I, imports of soybeans climbed in an unexpected way, reaching 43,500 tonnes in 1910, 90,600 tonnes in 1911 and 125,200 tonnes in 1912. Note: These units are given in dz. One dz (*doppelzentner*) = 100 kg.

The first manufacture of soyfoods in Europe took place in France, at Valees near Asnieres, where they made flour, bread, cakes, cheese, and soymilk—though only in small quantities and, above all, for diabetics. In England, soy flour has been used for a long time in the preparation of cakes.

However it was in Germany that the utilization of soybeans for food took place on a large scale; this began shortly before the war. The supply of foods to Germany was almost completely cut off during the war, so general attention soon turned to the new foods prepared from soybeans and people quickly became aware of their great nutritional value. Thus, in the middle of the war, a soybean industry was built in Germany. Unfortunately this youngest twig of the food industry was left crippled due to lack of raw materials. However one can predict that this industry has a bright future because of the great encouragement given to these products in so short a time. For example, in October 1914 the *Agumawerke* (Aguma Works) located in Harburg (near Hamburg) on the Elbe, first began mass production of a soy flour according to its own process. During the next few years it made many thousands of

tonnes of this meal, until the production had to be stopped for lack of raw materials (p. 6).

Equally gigantic sales of soy products were made by the *Soyamawerke* (Soyama Works) in Frankfurt am Main; this company made only soy food products. In addition to a meal (flour), it also produced a meat substitute (*Fleischersatz*), and, largely from soybeans, fresh and dried milk (*Frisch- und Trockenmilch*) as well as a fresh and dried cream preparation (*ein Frisch- und Trockenrahm-Präparat*). Likewise, this firm had to cease production of most of its soy products because of difficulties in soybean procurement, and concentrate only on the production of meat substitutes (*Fleischersatz*). These articles likewise entered all classes of the population splendidly as is seen from the large demand for them. Within 3-4 weeks this firm had orders for more than 1½ million pound cans, of which unfortunately it was able to satisfy only a small part. In addition to these two well-known firms, there are in Germany still a number others that are occupied with the production of foods from the soybean.

In Austria [the Austro-Hungarian empire], there exists a unique firm, the food factory Santosa in Prague [in the Czech Republic as of Sept. 2002], which is still processing soybeans. They introduced soy coffee into commerce. I understand that in Austria a large-scale soy processing venture is now being planned.

Certainly the soy processing industry finds itself in a beginning state and, like all young industries, in need of improvement. Remember the sugar-beet industry was also once young but it made improvements and went on to great success, as will be expected of this new twig on the food industry. In any case, the beginning of utilization of the soybean as food for the people has been made, and in the foreseeable future the soybean may, as in China and Japan, become an indispensable part of our people's food.

It is different with the introduction of the soybean as a cultivated plant in Central Europe. Forty years ago Friedrich Haberlandt showed (and after him countless others have shown) that the soybean grows well in Central Europe. Although additional new tests verify this, there are still those who object to soybean culture. One objection is the long time required by the soybean to come to maturity; the answer is the development of new varieties. Another is the relatively low yield compared with other beans; the answer lies in the use of inoculation. The author then discusses nutrient yield per acre and per unit of money, showing both to be high for soybeans.

Pages 10-11: It is well known that legumes possess the ability to transform and fix free nitrogen from the air. In 1886 Prof. Hellriegel discovered that this capability is due to certain bacteria that live in the soil and move through the root hairs into the root, where they cause nodule formation. The nitrogen-fixing bacteria living in the nodules nourish the plant. The author then talks about inoculation using

either soil from a previous planting or "Nitragin," a pure culture of root bacteria, which is well known and has recently been improved. Dr. Kuehn of Berlin-Grunewald showed that soil inoculated with Nitragin gave a 3- to 4-fold increase in yield, plus an increase in protein in the roots and leaves. He then discusses improved cultural practices. Winkler says that transplanting improves yields. Continued. Address: Steiermark, Germany.

562. Fuerstenberg, Maurice. 1917. *Die Soja, eine Kulturpflanze der Zukunft und ihre Verwertungsmöglichkeiten* [The soybean, a cultivated plant of the future, and possibilities for its utilization. Part II (Document part)]. Berlin: Paul Parey. 40 p. 28 cm. [59 ref. Ger]

• **Summary:** Continued on p. 14. Ways of using the soybean in its homeland (East Asia, especially Japan and China): Note: In this section, starting on p. 15, the author repeatedly uses the word *Sojaspeisen* meaning "soyfoods." The soybean probably originated in India. The Chinese and Japanese used it to fortify their rice-based, protein-poor diet. The practice came before the theory. The author says (incorrectly, p. 15) that all the basic soyfoods are fermented. He then gives a long description of koji and how it is made.

Shoyu or soy sauce (*Shoju oder Soja-Sauce*) (p. 15-17)" In Japan, 540-720 million liters are manufactured each year so each Japanese uses 60-100 ml/year. The fermentation time is 8 months to 5 years. The best soy sauce is fermented for 3 to 5 years. He explains how as soy sauce is fermented, the protein is broken down into amino acids such as leucine, tyrosine, and members of the "Xanthin" group.

Miso (vegetable cheese, p. 17-18): Miso is widely used in soups. More than half of the yearly Japanese soybean harvest is used for making miso. This is 30 million kg per year. Types of miso include *shiro miso* and Sendai miso. Winkler, in his small work titled "The Soybean of Manchuria," mentions two other types of miso: Aka or red miso and nuka miso. Kellner investigated five types of miso; a table shows their composition. Loew reports that this vegetable cheese (miso) is consumed either raw or in soups. Kellner, Nagasaka and Kurashima report that, based on their investigations, the amount of amino-nitrogen increases 3-fold and the quantity of carbohydrates is significantly diminished through lactic acid and alcoholic fermentation. The carbonic acid created thereby rises significantly during fermentation (Loew).

Natto (p. 18): Discusses the findings of Yabe.

Japanese tofu or Chinese Tao-hu (p. 18-20): This is the so-called "bean cheese" (*Bohnenkäese*). A table (p. 19, from König) shows the nutritional value of fresh tofu (84.8% moisture) and frozen tofu (17.0% moisture). E. Senft studied frozen tofu, a Japanese military preserved food (*Militärkonserve*) that is not canned; he found it had a beige color and a unique, slightly sour aroma which was at times

reminiscent of dextrin. It has a uniform texture throughout, with many tiny pores. Winkler refers to five other types of soy cheese. Concerning the military preserved foods, they were highly regarded during the Russo-Japanese War and (according to Senft) played a key role in the war. (Footnote: The descriptions of the various preparations made from soya make E. Senft's treatises (1906 and 1907) valuable; in them he published his investigations of a number of Japanese vegetable foods and military preserved foods or conserves). The well-known food manufacturer Maggi in Kempttal, Switzerland, has tried for many years to introduce a commercial miso-like product, but was not successful.

The soybean as an oil plant (p. 20-26): Winkler, in his brochure, discusses the uses of soybeans in Manchuria. After 1908, soybeans were sold in Europe at incredibly low prices which resulted in the expansion of imports and production. Then tariffs were levied on soybeans. There were some major problems in the Austrian oil industry.

Soybean flour (*Sojabohnenmehl*; p. 26-28): In recent years, various processes have been patented. One manufacturer is Soyamawerke in Frankfurt am Main, which makes *Soyama Kraftmehl*. Yellow soybeans are mechanically cleaned, washed, dried, and dehulled according to the process of Dr. Fritz Goessel. Agumawerke in Harburg also makes soy flour.

The soybean as a coffee substitute and extender (p. 28-31): Coffee is known to be detrimental to good health and void of nutrients. Rye, for example, has been used since the 17th century as a coffee substitute. Barley also plays a major role, especially as malt. A table (p. 30) shows the nutritional composition of ten coffee substitutes, including chicory, figs, lupin, and carob. Soy coffee tastes remarkably similar to real coffee. In Istria (*Istrien*), in the Austrian alps, in Switzerland as well as in Alsace (*Elsass*), the soybean has been used since its introduction as a coffee substitute. Haberlandt reported in his work that a teacher from Capo d'Istria told him that the soybean was used as a coffee substitute in Istria, and a friend told him that there was no difference between the flavor of the two. The Thunschen is used to make good soy coffee. The soybeans are mechanically cleaned, put into a trommel, agitated with water at 65-70°C, brushed and thereby freed of a large number of impurities which can leave a burned smell. The aroma of soy coffee can be improved by impregnation with an extract of largely decaffeinated coffee. It has roughly twice the nutrients of regular coffee and no harmful constituents.

Soybean milk (*Sojabohnen-Milch*, p. 32-33): The most popular vegetable milk is Dr. Lahmann's Vegetable Milk (*Lahmannsche Vegetabile Milch*), an emulsion made from almonds and nuts. In Japan, they make milk from soybeans; he describes the process, inaccurately, based on information from Winkler. This milk is also used to make cheese [tofu]. Also in Europe there have been successful attempts to make

a soymilk adapted to European tastes, as in France by the Caseo-Sojaine at Valées near Asnieres, and in England by the Synthetic Milk Syndicate. Using the process of Dr. Fritz Goessel, the latter company has a factory in Liverpool; it makes 100 liters of soymilk from: 10 kg ground soybeans plus 5 gm sodium phosphate, 2.4 kg lactose, 2 kg sesame oil, 6 gm common salt, and 60 gm sodium carbonate. Also the Soyamawerke in Frankfurt makes a soybean milk, named Soyama, as mentioned above (fresh and dried milk and cream). Recently Prof. Melhuish developed a new method using soybean, peanuts, and added coconut milk fat.

Soy meat substitutes (*Soja-Fleischersatz*; p. 33): Soyamawerke makes a product named *Soyama-Fleisch-Ersatz*.

Soybean as a chocolate substitute (p. 34): Haberlandt reports such a product.

Soya rubber substitute (p. 34): Goessel and Sauer have developed a rubber substitute made from soybean oil.

The utilization of soya in agriculture (p. 34-38): Use as fodder for cows. In 1880 Blascowicz [Blaskovics], Assistant at the Royal Hungarian Academy in Hungarian Altenburg, conducted fodder tests, whose results are given in various tables.

Conclusions (p. 38).

Note: This is the earliest document seen that uses the word *Ersatz* or the word *Fleischersatz*. They mean "artificial or inferior substitute" and "meat substitute" respectively. Though often associated with World War I, the word "ersatz" (which means simply "substitute" in German) was actually adopted into English as early as 1875, in reference to the German army's "Ersatz reserve," or second-string force, made up of men unqualified for the regular army and drawn upon only as needed to replace missing soldiers. Hence the meaning "inferior substitute." Address: Steiermark, Germany.

563. Japanese American News Inc. / Nichibei Shinbunsha. 1917. Nichibei jûshoroku ERROR! No directory published this year! [The Japanese American directory]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]* Address: San Francisco, California.

564. Lyman, Benjamin Smith. 1917. Vegetarian diet and dishes. Philadelphia, Pennsylvania: Ferris & Leach. 416 p. See p. 155-58. Index. Portrait. 21 cm. [3 ref]

• **Summary:** Discusses the physiological, economical, and ethical advantages of a vegetarian diet, with recipes and principles of preparation. The author, who wrote mostly about geology, lived 1835-1920.

A large table titled "Composition of foods" (p. 44-47) gives the percentage of protein, fat, carbohydrates, and ash (on a dry basis) for many foods, including natto, fresh tofu,

soy bean–dried, Swiss miso, soy [shoyu] No. 1 and 2, and white miso (all figures from Abel 1900), plus peanuts–dried.

In the chapter titled “Foods of vegetable origin” (p. 141-267), the section on “Pulse” (p. 152-78) contains a subsection titled “Soy bean” (p. 155-58), which begins: “The soy bean of China and Japan is perhaps the most important food plant there, next to rice. The bean is eaten to a small extent boiled like other beans; but is generally elaborated into a variety of products remarkably rich in protein and fat and therefore going well with rice so deficient in those constituents.” The following soy-related subjects are discussed, based largely on the writings of others: Soy sauce (Abel), natto (Abel), miso (R. Takahashi), tofu (Abel), *aburage*, *koritofu*, substitutes for milk and cheese, and nutritional comparison with eggs, milk and cheese (Abel, Atwater).

The section titled “Substitutes for milk and cheese” states: “The Chinese in Paris [probably Li Yu-ying] have been urging the culture of the soy bean. The seeds, when boiled, mashed, and pressed, yield both milk and cheese; if thinned with water, a very good substitute for animal milk; and if coagulated with mineral salt, a cheese that is usually eaten fresh, though it may be preserved by salting or smoking, after being cooked. Three varieties of the cheese are common in the oriental markets; a fermented kind, white, yellow, or gray in color, with a piquant taste, like roquefort; a salty and white kind, like goats’ milk cheese; and a third kind, smoky and resembling Gruyère. The soy cheese costs about a fiftieth as much as animal cheese; and in nutritive value, like the vegetable milk, compares very favorably with the ordinary products of the cow. (‘Phila. Ledger,’ Sept. 27, 1906).”

Note 1. No such article in the *Philadelphia Ledger* or the *Public Ledger* (Philadelphia), of this date, can be found.

Note 2. This is the earliest U.S. document seen (Dec. 2008) that mentions smoked tofu.

The section on peanuts (p. 158-62) includes roasted peanuts, peanut butter, peanut taffy, and “Terralac or peanut-milk (here first published).” Details on how to make peanut-milk at home are given, followed by many recipes for its use—each preceded by the word “Terralac.” Thus: Terralac custards, Terralac punch. Terralac cream, salad dressing, sauce, cream sauce, creams, blanc-mange [blancmange], cream pie, Bavarian cheese, Terralac in soup, “Ice-Terralac, or peanut ice-cream,” peanut soup, salted peanuts.

There are also sections on the cowpea (p. 163+), almonds (p. 263-65; incl. salted almonds, marchpane, macaroons, nougat or almond cake, almond milk, orgeat syrup, burnt almonds, replacing almonds), vegetable-gelatine (p. 384-87, incl. carrageen or carrageen [carrageenan], Irish moss, and kanten), sesame oil or gingelly oil (p. 388), peanut oil or groundnut oil (p. 388),

almond oil (p. 389), and sago and sago recipes (p. 390-91, incl. three sago puddings).

Note: *Merriam-Webster’s Collegiate Dictionary* (1998) defines orgeat (a word first used in 1754) as “a sweet almond-flavored nonalcoholic syrup used as a cocktail ingredient or food flavoring.”

565. Morse, Edward S. 1917. *Japan day by day, 1877, 1878-79, 1882-83*. 2 vols. Boston & New York: Houghton Mifflin Co. Vol 1, xiv + 441 p.; Vol. 2, 453 p. Illust. (Color frontispieces + sketches). Index. 22 cm. [20+* ref]

• **Summary:** These charming books, illustrated with 777 illustrations from sketches in the author’s journal, is a diary (to avoid the duplication of home letters; subjects are treated chronologically rather than topically), filled with detailed observations about most aspects of Japanese life and the author’s pioneering work there as a professor. It gives a vivid picture of daily life in Japan in the late 1870s. Morse quickly grew to admire and love the Japanese people; his greatest problem was learning to enjoy Japanese food.

Volume 1: “Almost everything in the sea furnishes food for the masses... Seaweed, a thin green leaf, is also eaten; it is dried and put up in tin boxes,” apparently a species of *ulva*. “I have mustered courage enough to taste a few of the dishes, and have succeeded in swallowing but one of them, and that was a kind of soup... Water was boiled in a tin vessel with a sauce [shoyu or miso] made from fermented bean [sic, beans], dark in color like Worcestershire sauce; into this were put slices of what looked like a cucumber, and then followed large blocks of a substance which resembled new white cheese [tofu], fresh from the press; this was cut into triangular slices. This last substance was made from [soy] beans, strained to remove the skins, and then made into a paste-like block. This soup was certainly nourishing and with a little practice one might come to like it. Another common article of food is made from seaweed and is known as *tokoroten*” (p. 87-88).

“It was delightful... to sit down again to a dinner of rare roast beef, real butter, and good bread. It is difficult to understand a country in which there is no milk, butter, cheese, bread, or coffee, and never has been. Butter is so distasteful to the Japanese that they cannot eat cake or other article of food in which composition butter is used” (p. 120).

A famous preparation is “cold raw fish, cut in this slices from the fish while fresh and alive. The idea of eating raw fish is particularly repulsive to our taste, though we eat raw oysters; nevertheless, foreigners soon get accustomed to it. The sauce [soy sauce] made of fermented [soy] bean, barley, and some other grain seems to have been specially created for this kind of food. I ate a great deal of it and must confess that my first experience was fairly good,... (p. 143-44).

“The tail of the fish was cut off and flung overboard... the [raw] fish was chopped into small pieces, head, eyes, bones, and all, and this hash was put into a wooden bowl... From a box was added a substance [miso] that had a very sour odor, something made of beans and allowed to ferment, a little water was added, and it was all stirred up together, and such an unsavory-looking mess I never saw before. The gusto, however, with which the man ate it to the last grain, showed that it was palatable to him at least” (p. 185).

“I have lived on rice, sweet potatoes, egg plant, and fish for two weeks. I would give all my old shoes, and new ones too, for a good slice of bread-and-butter, a bowl of bread-and-milk, or any other thing you are enjoying at home” (p. 227).

“The cakes has a stamp of the chrysanthemum on top; these were red and white and were made of [azuki] bean paste and sugar. The Japanese are very fond of them, but they are rather insipid in taste” (p. 395).

“I have finally resigned myself to the Japanese food of this region [Yezo {Hokkaido} near Hakodate]... And of all places to start such an experiment in this village! It required some courage and a good stomach to eat for dinner the following: fish soup, very poor; bean paste [miso?], which was not so bad;... and holothurian, or sea cucumber,... by no means agreeable. It was eaten with Japanese sauce, *shoyu*, which renders everything more or less palatable... On the whole, I am keeping body and its animating principle together, but long for a cup of coffee and a slice of bread-and-butter. I am the only outside barbarian in town” (p. 440-41).

Volume 2: The New Year’s food included “a bean pickle in sugar syrup and Japanese sauce” [probably black soybeans (*kuromame*)] (p. 93). A detailed description of mochi and its pounding are given, with two illustrations (p. 95).

As they left Izumi and entered the Province of Kii [today’s Wakayama], “I saw the process of manufacture of a curious kind of food one often sees in certain soups. It has a bright-yellowish color, as thin as paper, and has no definite flavor. The substance is made from soya beans by a curious and simple process. The beans are boiled in a large boiler till they are very soft; they are then ground in a mill to a fine paste, and mixed with water and colored by some stuff that is imported from abroad (fig. 675). This material is then put into a shallow trough divided by square partitions, beneath which is a charcoal fire which keeps the stuff gently boiling. The surface coagulates as it does on boiled milk, or on a cup of cocoa, and the film that forms is taken off very skillfully with slender bamboo sticks and hung up to dry (fig. 676). Other films form and are promptly removed by a girl who is kept busily at work” (p. 286-88).

In Kawagoe [a city in today’s Saitama prefecture, about 20 miles northwest of Tokyo]: “It is a common custom... to eat grasshoppers as a relish... The Japanese prepare them by

boiling them in shoyu, sugar, and a little water, till the water has nearly all boiled away” (p. 324-25).

At New Year’s “our old cook brought me a box of *yokan* (made of sugar and [azuki] beans)... (p. 393).

Edward Sylvester Morse, a marine biologist specializing in Brachiopods, lived 1838-1925. Address: Salem, Massachusetts; Former Prof. of Zoology, Imperial Univ., Tokyo.

566. Howell, E.V. 1918. Soy beans and soy bean oil. *J. of the American Pharmaceutical Assoc.* 7(2):159-63. Feb. [14 ref]

• **Summary:** “This bean is a native of southeastern Asia. It is at present the most important legume grown in China and Japan, where it is grown almost exclusively for human food. It has been cultivated from a remote period, each district having its own distinct variety, some two hundred kinds in all... The bean was introduced into England in 1790. Apparently the first mention of soy beans in American literature was in the *New England Farmer*, October 23, 1829, in an article by Thomas Nuttall.” There follows a summary of this article and several other early U.S. documents that mention the soy bean.

“Importance: I think the soy bean is the most important plant introduced into the South within a hundred years. This opinion is based on the range of the plant, the value as a soil improver, and the numerous uses of the seed and oil, together with the fact that the present cottonseed oil mills can produce the oil with practically no change in machinery and thus double their mill season. The beans can be stored, as they are practically immune to insects. Especial emphasis is placed on this statement in the present demand for food on account of the war. In Japan the bean forms one of the most important articles of food, by nature a meat, to go with the starch of rice. The Chinese make from the beans a cheese resembling our own cheese, while the Japanese make the well-known sauce for rice or fish, soy or suey sauce. It is one of the principal ingredients in ‘Tofu’ (bean curd), natto (steamed beans), and white and brown miso, which is like our molasses brown bread.”

“A factory for the production of this [soy] milk has recently been established in America. This can be used in cooking, by bakers, confectioners, and chocolate manufacturers. I have before me the following food articles in which soy bean meal is the principal ingredient: Egg substitute No. 1, egg substitute No. 2, colored cocoanuts, coffee substitute, cocoa substitute, roasted malted nuts, coloring curry powder, cutlet powder, soy and navy beans with pork, the equal of any pork and beans.

“The use of the soy meal for soups, for proportional use in muffins, cookies, fritters, croquettes, biscuit, and loaf bread is unlimited. Its use is checked only by our prejudice for certain customary flavors, just as northern people and Europeans do not use corn meal. In other words, North

Carolina, if forced to by war conditions, could largely exist on the soy beans crushed in the State this year, including the imported and native beans crushed, the oil from which I estimate to yield this year 400,000 gallons. This oil can be used for frying, and for a salad oil in French dressing or in mayonnaise. I fried a partridge in the crude unrefined oil, and found it delicious.

“While the chief use, so far, of the oil has been for soaps and paints, the particular object of this paper has been to call attention to the use of soy oil in pharmaceutical preparations.”

Tables show: (1) The specific gravity, saponification value, and iodine for three samples of Manchurian soy oil purchased in New York. (2) The chemical composition of soy bean meal (8.77% fat), compared with the meal of five other seeds (including cottonseed, linseed {old and new process}, decorticated peanut, and sunflower seed). (3) Four chemical constants of seven samples of domestic and imported soy oils (from L.P. Nemzek). (4) The food values (nutritional composition) of soy beans and six other foods, including lean beef, milk, and eggs.

Because of World War I: “During the past six or seven months there has been produced in this country in the neighborhood of one hundred thousand gallons of soy oil. The largest part of this quantity has been produced in North Carolina by the Elizabeth City Oil & Fertilizer Co., Winterville Cotton Oil Co., and the New Bern Cotton Oil & Fertilizer Mills. Samples from the different crushings have been examined in comparison with the imported oil.”

“Medicinal use: In England a diabetic biscuit is manufactured. In this country an infant’s food from the soy bean is on the market. The enzyme in the bean is also attracting attention and opening a field for investigation.”

Note 1. This paper was presented at the Scientific Section, American Pharmaceutical Assoc., Indianapolis meeting, 1917.

Note 2. This is the earliest English-language document seen (Oct. 2008) that contains the word “crushings.”

567. Itano, Arao. 1918. Soy beans (*Glycine hispida*) as human food. *Massachusetts Agric. Exp. Station, Bulletin* No. 182. 10 p. March. [16 ref]

• **Summary:** Contents: Introduction. Chemical composition and digestibility. Human food prepared from soy beans (practical recipes for making Japanese foods at home; names in parentheses indicate the Japanese name). Soy bean milk (*Toniu*): The ordinary method employed in Japan, toniu from soy bean meal (made by grinding soybeans in a wheat flour mill or fine coffee mill), author’s method [from soy bean meal, plus inoculation with *Bacillus coli* and *B. lactis aerogenes*], synthetic toniu, condensed soy bean milk (condensed toniu). Evaporated soy bean milk (yuba). Soy bean curd (tofu): Fresh curd (tofu), frozen tofu (*kori tofu*), fried tofu (*abura-age*). Baked beans. Boiled beans. Roasted

beans. Powdered beans: Roasted, or raw (soy bean meal). Green beans. Soy bean pulp (*kara*). Fermented boiled beans (natto). Ripened vegetable cheese (miso; discusses koji). Soy bean sauce (shoyu). Vegetable butter, ice cream, oil (table use) and lard (cooking): “The manufacture of these articles from soy beans needs further investigation.”

Concerning “Baked beans” (p. 7). “1. Soak the beans, suspended in a cloth bag, in a large quantity of hot water over night. (Soaking for twenty-four hours in ice-cold water which is changed occasionally will give the same result.) 2. Change the water, when hot water is applied, in the morning and an hour or two before cooking. 3. Add 1 teaspoonful of soda [sodium bicarbonate] per quart of beans and boil until the beans become soft. 4. Bake like other beans. Note.—The characteristic strong flavor of the beans is removed by soaking before cooking; the addition of soda [sodium bicarbonate] makes the beans soft. Cooking with salt pork, potatoes, onions, molasses and other substances makes the beans more palatable to some tastes.”

Concerning the “Roasted beans” (p. 7). “1. Roasting can be done either in an oven or in an ordinary corn popper. 2. Roast until the skin of the bean is burst by popping. Note.—The beans can be kept soft by immersing them in a syrup while they are hot. Thus very wholesome candy is prepared.”

Concerning the “Powdered beans: Roasted” (p. 7). “1. Roast as in the roasted beans. 2. Let them stand until they cool to harden them. Grind them in a coffee mill or other suitable grinder. Note.—The powder can be used as a salad dressing or cooked [baked] with cookies like peanuts and other nuts, or employed as a substitute for coffee.” Note 1. This is the earliest English-language document seen (Dec. 2005) that uses the term “Powdered beans: Roasted” to refer to roasted soy flour.

Concerning “Green beans: 1. Pick them when the beans are three-fourths to full grown. Boil them in salt water. 3. Discard the pods. 4. Serve the beans with butter of milk. Note—The pods are tough and they can be removed easily on boiling.”

Concerning “Soy bean pulp (*kara*): 1. This is the residue after the milk is extracted in the process of preparation of soy bean milk. 2. Cooked like any other vegetable with proper seasoning. Note.—Makes a very rich dish; an addition of green onions, cabbage or parsnip may improve it.”

Tables contain chemical composition analyses.

Note 2. This is the earliest English-language document seen (March 2007) concerning soy ice cream, which it calls simply “ice cream.” This is also the earliest document seen (March 2007) concerning the etymology of soy ice cream.

Note 3. This is the earliest English-language document seen (Oct. 2001) that uses the term “soy bean pulp” to refer to okara.

Note 4. This is the earliest English-language document seen (Feb. 2004) that uses the word “kori tofu” to refer to

dried-frozen tofu.

568. *USDA Bureau of Plant Industry, Inventory*. 1918. Seeds and plants imported by the Office of Foreign Seed and Plant Introduction during the period from January 1 to March 31, 1915. Nos. 39682 to 40388. No. 42. 123 p. April 17.

• **Summary:** Soy bean introductions: Soja max: “39967/39982. From Soochow, China. Presented by Mr. N. Gist Gee, Soochow University. Received February 11, 1915. Quoted notes by Mr. Gee, except as otherwise indicated. “39967-39972.

“39967. ‘(No. 1. *Kua shu tou (Kwa zoh)*. Melon-ripe bean.) This is so named because of its time of ripening. Seeds are sown about the first of May and cropped late in June when melons are ripe. Used only as a vegetable.’

“39968. ‘(No. 2. *Chia chia san tou (Kah kah sen)*. Pod pod three bean.) Planted in the middle of May and reaped during September. Used as a vegetable and for manufacturing of oil.’

“39969. ‘(No. 3. *Hung hsiang chih tou (Ong sing sze)*. Red familiar bean.) These are “Loving beans,” as the characters suggest. Planted in the middle of May and harvested about September. Used both as vegetables and in the manufacture of oil.’

“39970. ‘(No. 4. *Hei tou (Huk)*. Black bean.) Owing to their color, these are called “Black beans.” Planted in the first part of June and reaped in the middle of October. Used as a vegetable and in the manufacture of oil.’

“39971. ‘(No. 5. *Ku li ch’ing (Kwa lea ching)*. Bone inside green.) Planted early in June and harvested in late October. Used only in making oil.’

“39972. ‘(No. 6 *Shih tzû ho tou (Zee tee ‘ah)*. Persimmon-seed bean.) Planted in the first part of June and cropped in the middle of September. They are largely used as vegetables.’

“39974-39977.

“39974 ‘(No. 8 *Pa yüeh pai tou (Gee buh)*. Eight-month white bean.) The combined meaning of its color and its time of ripening indicates the name. Planted in May and harvested in September, which is the eighth month of the Chinese calendar. Used to make oil. This and No. 9 [S.P.I. No. 39975] are the best two for oil manufacture.’

“39975. ‘(No. 9. *Shui pai tou (Gee buh)*. Water white bean.) Planted in late May and reaped in September. Used to manufacture oil; one of the best two for oil manufacture.’

“39976. ‘(No. 10. *Niu t’a pien (Nue duh pea)*. Cow crush flat.) Its use and time of harvesting are the same as those of the *Gee buh* [S.P.I. No. 39975]. The beans are trodden out by cows; hence the name.’

“39977. ‘(No. 11. *Wu ch’iao tou (Oh tsah)*. Sparrow’s cackling (or magpie) bean.) Planted about the last part of June and cropped in mid-October. Used largely to make oil.’”

“39982. ‘(No. 16. *Lü tou (Loh)*. Green bean [mung].) Planted in the early part of June and cropped early in September. Used the same as the *Ch’ih tou* [S.P.I. No. 39980]. Called “green bean” because of its color, probably.’”

“40106/40138. From Wakamatsu, Iwashiro, Japan. Presented by Rev. Christopher Noss. Received March 8, 1915. Quoted notes by Mr. Noss. ‘From an exhibition in Kawamata, near Fukushima City.’

“40106-40127.

“40106. ‘*Mochidaizu (dai)*, large; *zu*, bean), used in *mochi* (glutinous rice boiled and pounded in a mortar).’

“40107. ‘No. 2. *Nakatedaizu* (second early), used in *miso* (beans, etc., pickled in salt and made into soup), *tofu* (bean curd).’

“40108. ‘No. 3. *Shichi-ri-korobi-daizu* (20-mile rolling), used for *tofu*, *soy*, and *miso*.’

“40109. ‘No. 4. *Yuki-no-shita-daizu* (under the snow), used for *tofu*, *soy*, and *miso*.’

“40110. ‘No. 5. *Wasedaizu* (early), used for *tofu*, *soy*, and *miso*.’

“40111. ‘No. 6. *Misodaizu*.’

“40112. No. 7. *Ko-tsuba-daizu* (small grain), used for *miso* and *natto* (buried, fermented, and eaten as a relish).’

“40113. ‘No. 8. *Kinako-daizu*, made into *kinako* (a flour used in cooking) and also *natto*. Said to have been brought by soldiers from Manchuria.’

“40114. ‘No. 9. *Tamazukuridaizu* (name of a country near Sendai), used boiled.’

“40115. ‘No. 10. *Asahidaizu* (morning sun), used for *natto*.’

“40116. ‘No. 11. *Darumadaizu* (Dharma, whose image was a roly-poly, can not be upset), used boiled and for *tofu*.’

“40117. ‘No. 12. *Taiwandaizu* (Formosa), used boiled.’

“40118. ‘No. 13. *Hato-koroshi-daizu* (dove killer), used boiled.’

“40119. ‘No. 14. *Usu-ao-daizu* (light green), used for *kinako* and boiled.’

“40120. ‘No. 15. *Ao-daizu* (green), used for *kinako* and boiled.’

“40121. ‘No. 16. *Aka-kuki-daizu* (red stalk), used for *natto* and *miso*.’

“40122. ‘No. 17. *Fuku-shiro-daizu* (clothing white), used for *tofu*.’

“40123. ‘No. 18. *Hachi-ri-han-daizu* (21 miles), used boiled. The name *Hachi-ri-han-daizu* involves a curious play on words. *Hachi-ri-han-daizu* means “eight ri (a ri is 2.5 miles) and a half,” which is just a little short of *ku-ri*. Now *ku-ri* means nine ri, and *ku-ri* also means chestnut, so the expression in question means that the beans so named are almost equal to chestnuts.’

“40124-40127. ‘Beans are used boiled.’

“40124. ‘No. 19. *Yoshiwaradaizu* (harlot quarters in Tokyo).’

“40125. ‘No. 20. *Chadaizu* (tea, alluding to the color [brown]).’

“40126. ‘No. 21. *Kichidaizu* (lucky).’

“40127. ‘No. 22. *Kurodaizu* (black).’”

“40370-76. From Wakamatsu, Iwashiro, Japan.

Presented by Rev. Christopher Noss. Received March 27, 1915. Quoted notes by Mr. Noss.

“40370. ‘No. 33. *Hikagedaizu* (shade), produces in shady places; used for *miso*.’

“40371. ‘No. 34. *Dekisugidaizu* (excessive yield); used for *miso*.’

“40372. ‘No. 35. *Kurodaizu* (black); eaten boiled and sugared.’

“40373. ‘No. 36. *Nakatedaizu* (medium early); used for *miso*.’

“40374. ‘No. 37. *Hishidaizu* (water caltrop, alluding to the flattened shape); eaten parboiled and seasoned with shoyu and salt.’

“40375. ‘No. 38. Name unknown, cultivated from ancient times in Soma County, Fukushima Ken; used for *miso*.’

“40376. ‘No. 39. *Hakodate-nishiki-daizu* (Hakodate brocade); used for *miso*.’” Address: Washington, DC.

569. Evans, W.A. 1918. How to keep well. *Chicago Daily Tribune*. Aug. 28. p. 6.

• **Summary:** “Soy beans offer large possibilities as a food. They contain 17 per cent fat, 36 per cent proteid, and 14 per cent starch. Soy bean milk has been used for feeding children for a long time. Le Wall says that soy bean cheese and soy bean croquettes resembling meat croquettes are in use. According to the same author, soy bean is the basis of Worcestershire and other sauces. Among orientals soy bean foods are: Tashir, a bean natto and miso, also soy bean cheeses. Ordinary soy milk and Yuba or soy cream are in use. Shoyer [sic, shoyu] is an oriental sauce in making which soy beans are used.” Address: Dr.

570. Winkler, Gustav. 1918. Die Sojabohne: Aus einem Vortrage... gehalten in der Hauptversammlung der Gartenbau-Gesellschaft Frankfurt a.M. am 17. April 1914. Zweite Auflage [The soybean: From a lecture... presented at the main meeting of the Gardening Society of Frankfurt am Main, on 17 April 1914. 2nd ed.]. Mainkur bei Frankfurt am Main, Germany: Published by the author. ii + 28 p. Illust. 22 cm. [4 ref. Ger]

• **Summary:** On the cover: “Die Sojabohne der Mandschurei [The soybean of Manchuria]. Much of this lecture (as stated on the title page) was based the following English-language article, translated into German by Werner Winkler (Gustav’s son) in 1913: Shaw, Norman. 1911. “The soya bean of Manchuria.” *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series No. 31.* 32 p.

Contents: A 2-page insert at the front. Photos show: (1) The author (with a large white beard and moustache) with a many-branched soybean plant, stripped of its leaves, mounted on a 2 x 3 foot wooden board, from his beanfield (*Winklers Bohnenfeld*) at Mainkur. This one plant grew from May 10 to Oct. 15, 6 months, producing 242 pods containing 503 completely mature soybeans. This line was acclimatized for 6 years and cultivated in the soil for 5 years. (2) The author standing and holding (with the roots facing upward) one soybean plant in each hand. In his right hand is an acclimatized soybean which produced 58 beans in 100 days. In his left hand is a plant grown from Chinese seeds of 1912-13 which produced 224 flowers and no seeds in 100 days. (3) A many-branched soybean plant, stripped of its leaves, from Winkler’s beanfield, affixed to a board. Grown from Chinese seeds harvested in 1911/12. It grew from 15 May 1917 until Oct. 1, five months. 105 pods produced about 250 completely mature soybeans. From seeds that were not yet acclimatized grown on cultivated soil. (4) A similar looking plant from Winkler’s beanfield. Grown from Chinese seeds harvested in 1911/12. It grew from 15 May 1918 until Oct. 15, five months. 160 pods produced about 350 soybeans. The seeds were not yet completely ripe because of bad, raw weather in 1918.

Foreword to the 2nd edition. Introduction. Diagram in the shape of a rhombus / diamond, showing how the various colored soybeans change from one color into another (adapted from Shaw 1911, p. 2). Description of the diagram: Discusses: (1) Ball, Carleton R. 1907. “Soy bean varieties.” *USDA Bureau of Plant Industry, Bulletin No. 98.* 30 p. + 5 plates. May 27. (2) Hosie, Alexander. 1910. *Manchuria: Its People, Resources, and Recent History*. London: Methuen & Co. xii + 293 p. Hosie describes 3 types of soybeans: Yellow, with 3 subvarieties. Green, with 2 subvarieties. Black, with 3 subvarieties.

The rest of the contents is fairly similar to that of the 1st edition (1914), but the details within many sections are greatly expanded. On the rear cover is a photo of two soybean plants attached to a board, one month after planting the seed, Summer 1917; 15 May to 15 June. In the Supplement (p. 26-28), the author summarizes the results of his 8 years of soybean cultivation in Frankfurt; he concludes that it can be grown with good results in southern Germany. Frankfurt am Main is about midway between the northern and southern tips of Germany. Address: Mainkur bei Frankfurt am Main, Germany.

571. Arnold, Julean. 1918. Chinese products of interest to Americans. *Commerce Reports [USA] (Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce, Department of Commerce)* 21(299):1110-19. Dec. 21.

• **Summary:** About Chinese vegetable products. Two long sections (“Chinese production of beans” and “Extensive use of bean products—Exports during 1917”) contain detailed

discussions of soybeans and soyfoods in China. However, the author states (p. 1112) that the “greater part of the descriptive information above is taken from:” Shaw, Norman. 1911. “The soya bean of Manchuria.” *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series. No. 31. 32 p.*

The first of these sections states: “It is only within the past 10 years that the outside world has become acquainted with the soya bean of China. It is probably safe to say that the sudden rise of the soya bean from a position of comparative obscurity to a position of prominence in the world of trade, during a period of little more than a decade, constitutes one of the commercial wonders of the world.

“In the Far East soya beans are used for the following purposes: (1) For bean sauce or soy (‘soya’ is a corruption of the Japanese ‘shoyu’), known to the Chinese as ‘chiang-yu’ and made... The sauce is clear, resembles Worcestershire sauce, and is used in a somewhat similar way. (2) For ‘chiang’ or bean paste, eaten with fish, meat, and vegetables, and made by... (3) For ‘tou-fu’ or bean curd [tofu], made from green or yellow beans by... (4) For a form of flour, extensively used for bean vermicelli, which is tasty and nutritious. (5) As a table vegetable [green vegetable soybeans]. (6) For soups. (7) For making confectionery (in Japan). (8) For oil, as a substitute for lard, as a lubricant, as an illuminant, and to make waterproof cloth, paper umbrellas, and lanterns.”

Also discusses “Exports of peanuts” (p. 1118-19): Just before the outbreak of World War I, the peanut export industry in China reached a peak. “The annual exports then were about 70,000 tons of shelled peanuts and about 50,000 tons of oil. More than 40% of these exports went from the port of Tsingtau [Tsingtao] as Shantung has developed into the largest peanut producing Province in China.” Address: Commercial Attaché, Peking.

572. Crevost, Charles. 1918. *Plantes oléifères de l’Indochine [Oil-bearing plants of Indochina]*. In: *Congrès d’Agriculture Coloniale, Gouvernement Générale de l’Indochine. Hanoi-Haiphong: Impr. d’Extrême-Orient. 57 p. Series: Hanoi No. 6. See p. 26-27. [100* ref. Fre]*

• **Summary:** Following an overview, the various oil-bearing plants are described in detail, organized by family. The section on Soja (p. 26-27) states: Indigenous names in Cochin China, Annam and Tonkin: Dau nanh, Dau tuong. Cambodia: Sandek sieng. China: Teou [dou]. Japan: Daizu mame. The plant is widely cultivated in Indochina for its seeds which, although not consumed directly as food, are used nevertheless to make various other foods: cheeses (dau phu and dau oc [tofu]), and a condiment sauce [soy sauce] (tuong).

In Indochina there is only one variety of soybean, which has oblong yellowish-white seeds, slightly flattened, more

or less large according to its place of origin, whereas in China and Japan soybeans come in various colors and colorations.

The best seed in the colony come from Cambodia and the province of Lang-son in Tonkin.

It is well known that soy protein (*graine de soja à base de caséo-sojaïne*) serves as the basis for numerous food preparations; but the seeds are now most widely used in the manufacture of an oil, used for illumination [in lamps] or food; it tends to replace cotton oil in the soap industry, whereas soybean cakes (*les tourteaux de soja*) are considered excellent for use as a fertilizer or for fattening cattle.

A table shows nutritional analyses of soybeans from three locations, conducted at the colonial garden of Nogent-sur-Marne: Laos, Tonkin, and Manchuria. For each the moisture, protein, oil, carbohydrate, and mineral content are given.

Also discusses: Peanuts (p. 25-26, with illustration facing p. 25, and 9 references), sesame (p. 29-30, with illustration facing p. 29), perilla (p. 30).

Note the interesting phrase *graine de soja à base de caséo-sojaïne*, based on the work of Li Yu-ying near Paris, France. Address: Inspecteur des Services agricoles et commerciaux; Conservateur du Musée [Maurice Long] agricole et commercial de Hanoi.

573. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1918. *Nichi-Bei nenkan [Japanese-American yearbook. No. 12]. 650 Ellis St., San Francisco, California. [20] + 432 p. Reprinted in Feb. 2002 in Tokyo by Nihon Tosho Senta. Series: Nikkei Imin Shiryôshû. Dai 5-kai [Collected Documents on Japanese Emigration. No. 5]. [Jap; eng]*

• **Summary:** This book is somewhat similar to the 1915 yearbook but very different from previous yearbooks in this series in that it has no directory (giving business names, address, and sometimes phone numbers). It has more pages of advertisements than the 1915 edition but fewer than previous editions. Moreover the structure and contents are very different. For the first time, the pages are numbered sequentially throughout the book—except for the first 20 pages which are unnumbered. Again, it is not clear what caused these major changes. But the main message seems to be: Japanese are hard-working people adding significantly to the production and value of the United States.

Like its predecessors, it is read and numbered from “back to front” compared with typical English books; it is mostly (99%) in Japanese. The English-language title page reads: *The Japanese American Year Book*.

Contents: Front matter (6 p.). Preface, correction notice, and full-page ad for Pacific Trading Co. (soy is not mentioned) (2 p.). Photos (black and white on 6 unnumbered pages). Maps and charts on 2 unnumbered pages: Total value of agricultural products by Japanese

farmers in the USA in 1917: (1) Pie chart of value (\$) of principal crops produced. The top 5 are vegetables, beans, grapes, sugar beets, and potatoes. (2) Bar graph of percentage of principal crops produced by Japanese, showing their adaptability for intensive cultivation (average 1915-1917). Japanese produce 90% of all celery, 88% of berries, 86% of asparagus, 85% of cantaloupes, 83% of onions, 80% of tomatoes, 72% of florists' products, 53% of seeds, etc. Bar graph showing the increase in land value under the cultivation of Japanese in 12 places of California. For each place, a white bar shows land value per acre before 1913 and a black bar shows land value per acre in 1918. These places include: Imperial Valley (melon ranch). Colusa (rice field). Sonoma (vineyard & orchard), etc. On average, the land has increased in value from 4.5-fold to 6.7 fold.

Table of contents (2 p.). Map showing yearly amount of rainfall in California (1 p.).

Nichibei Nenkan No. 12—Industrial edition (p. 1-). Japanese agricultural conditions (p. 1-20, with ads on p. 16-17). Various other Japanese industries (p. 21-28). Ads (p. 29-36). Education (p. 37-64). Ads (p. 65-80). Agriculture (part 1 of 3; p. 81-209, with ads p. 204-209). How to run an agricultural business (part 2 of 3, p. 210-340, with ads p. 297-300, 341-348). Agricultural production industry (part 3 of 3, p. 349-389). Industries: Fishery (p. 389-419). Forestry (p. 420-24). Mining (p. 425-28). Manufacturing (p. 429-31). Ad (Hinoe / The Hinoe, p. 432). Copyright and publishing information page.

Summary: Tofu makers (*tofu-ya*): In 1908 there were 20 tofu makers. This number increased to 50 in 45 locations in 1917 (p. 25). Miso makers (*miso seizô-sho*): Since 1908 there have been 12 miso makers that opened; some have closed. In 1917 the number increased to 6 due to the ban on importing Japanese miso. Among the oldest and most established in Los Angeles: Miso Seizô-sho. Their capital investment is \$12,000. They use 180,000 *kin* of soybeans (1 *kin* = 1.323 lb = 600 gm) and 240,000 *kin* of rice. Sales are \$36,000/year. Number of workers: 4 (p. 28). The only soy-related ad in this volume is for "L.A. Miso Mfg. Co., 605-7-9-N. Alameda St., Los Angeles, California." Trade mark: Shows 3 horizontal lines in a circle, probably pronounced "marumi"—which means "flavor" in Japanese. In Japanese is written (in big, bold characters). *Rafu Shiromiso Seizô-sho*.

The Directory shows Japanese companies making soyfoods in California and other states. Address: San Francisco, California.

574. Paerels, J.J. 1918. Soja [Soya]. In: Dr. K.W. Van Gorkom's Oost-Indische Cultures. 1918. Amsterdam: J.H. de Bussy. 2nd ed. Vol. 2. Edited by Dr. H.C. Prinsen Geerligs. See p. 839-51. Figs. 285-86. [8 ref. Dut]

• **Summary:** This is a reprint of Paerels 1913. Contents: Origin and native land. The soybean plant: Botanical description (flowers, seeds, fertilization, germination), types

and varieties, geographical distribution. Cultivation of soybeans: General instructions for growing, planting, manuring, diseases and pests. Production, trade, and use: Tofu (*Tao-Hoe*), Chinese soy sauce (*Tao-Yoe*), soybean paste (*Tao-Tjiong* [a term, and perhaps a product, between *doujiang* and *tao-tjo*, Indonesian-style miso]), composition of the seeds and value as a food (*samenstelling en voedingswaarde*). Photos show: Plants of a black variety (p. 840), and a white variety of soybeans (p. 841). Address: Netherlands.

575. Shih, Chi Yien. 1918. Beans and bean products. Shanghai, China: Soochow University Biology Dept. 13 p. 24 cm. [Eng]

• **Summary:** The author's name in pinyin is probably Shi Jiyan. At the head of each section, the name of each product or type of bean is written in Chinese characters. Contents: Introduction by N. Gist Gee of the Dept. of Biology, Soochow Univ., China. Note 1. Soochow, also called Szechow (formerly Wuhsien) is a city in southern Kiangsu (pinyin: Jiangsu) province, in eastern China, on the Grand Canal. Introduction and names of soy beans: Classical Chinese names, colloquial Chinese names, Latin names, and English name (Soja bean). Soy beans. The food products of soy beans. Bean curd (Cc). Tou fu koen. Po yeh. Yu tou fu. Ju fu. Tsao ju fu. Ch'ing hsien ju fu. Tou Chiang or bean sauce. Chiang yu. Bean ferment or tou huang. Bean Sprouts. Bean relish or tou shih [soy nuggets]. Bean oil. Note 2. *ju fu* refers to fermented tofu.

Beans (Four varieties of *Phaseolus mungo* var. *radiatus*: chidou = dark-red [azuki] bean, baichidou = white dark-red bean, lüchidou = green red bean, and lüdou = green [mung] bean): The food products from the green [mung] beans (lüdou): Bean sprouts, green bean congee or lu tou chou, green bean soup or lu tou tang, green bean pudding or lu tou kao and lu tou sha. The food products from the red [azuki] bean (quite similar to those made from the green [mung] bean): Congee, rice, pudding, tou sha.

Hyacinth beans (*Dolichos lablab*; five Chinese varieties / names: biandou, baibiandou, qingbiandou, zibiandou, longzhao biandou). Asparagus beans [cowpeas] (*Vigna catiang*; four Chinese varieties / names: jiangdou, panxiang jiangdou, manli jiangdou, baimi jiangdou). The food products from Pien Tou and Chiang Tou. Medicine. Flowers and seeds of the Pai Pien Tou, the broad bean, windsor bean, or horse bean (*Vicia faba*); In China it has two names: (1) Ts'an Tou or silkworm bean, because it is harvested at the time the silkworm is making its cocoon; (2) Han Tou or cold bean, because it grows through the winter. The food products from Ts'an tou (broad bean): Bean shoot (tou miao), Ch'ing tou (as a vegetable), Ja tou (broad bean sprouts), Shien fan and fan bee (made from broad beans and mung beans), Tou sha. The section on the names of beans (p. 1) we will give the English name, Latin name, the

classical Chinese names / colloquial Chinese names, and an English translation in parentheses, as follows: (1) Soja bean, *Glycine hispida*: heidou / heidou (black [soy] bean), huangdou / huangdou (yellow bean), yangyandou / yangyandou (sheep eye bean), maliaodou / maliaodou (horse material / feed bean),-/ guguo qingdou (bone wrap green bean),-/ jiajia sandou (pod pod three bean), xiangsidou (mutually think bean) / xiaqngzhidou (fragrant branch bean),-/ bayue baidou (8th month white bean). Soja bean: *Dolichos cultratus* quedou (magpie bean) / equedou (chirp magpie bean). Soja bean: *Phaseolus vulgaris* baidou (white bean) / shui bai dou (water white bean),-/ shidou (fennel bean) (Note 3. shiluo means “fennel”),-/ guashudou (melon ripe bean),-/ maquedou (sparrow bean),-/ niuta biandou (cow tread flat bean),-/ yadou (sprout bean),-/ shijia xiangdou (ten family fragrant bean),-/ xifeng qingdou (west wind green bean),-/ shizi hedou (persimmon pit bean),-/ denglongdou (lantern bean).

Note 4. The large title “Soy Beans” at the top of this table, the right column which says that the English name of each variety is “Soja bean,” and the next 8 pages which are only about soy beans, strongly indicate that all the colloquial names in this table refer to different varieties of soy beans. Moreover, all these colloquial names appear again on page 3 in a table on planting and harvest times of different varieties of [soy] beans. The bottom half of the colloquial names are probably from different parts of China, since Dr. H.T. Huang (a soybean expert) has never heard many of these colloquial names before. The most puzzling question is: What are *Dolichos cultratus* and *Phaseolus vulgaris* doing at the bottom of the “Latin name” column? *Dolichos cultratus* is not listed on either of the two comprehensive taxonomy databases (GRIN and ILDIS, which include all past Latin / scientific names). *Phaseolus vulgaris* refers to the common bean, such as the kidney bean, pinto bean, navy bean, frijole, etc.

2. Soy beans. “They were introduced into France during the reign of Ch’ien Lung about 1740 A.D. by a French Consul; into England in 1790, into Australia in 1875, into Germany 1881, and 1888 into America. They were known here from ancient times and were mentioned in the oldest books Pên Ts’ao Kong Mu, which were written by the Emperor Shen-nung in the year 2838 B.C., and the later Chinese Classics.”

Note 5. This is the earliest English-language document seen (Aug. 2002) that treats Shen Nung as a real, historical figure, or that says the first written record of the soybean appears in a book written by him. The information about that book is wildly inaccurate. The *Bencao gangmu* (The great pharmacopoeia), perhaps China’s most famous materia medica, was written by Li Shizhen (+1596). The above information, which is all wrong, has been cited again and again, down to the present day (2002), in connection with the supposed origin of the soybean.

“Even during the ancient times they were considered by the people to be the most important of the cultivated leguminous plants.” Note 6. This is the earliest document seen (Aug. 2002) which gives, incorrectly, that the date of Emperor Shen-nung’s book as 2838 B.C.

“The methods of cultivation are as follows: In general all of the soja beans are planted in rows along the banks of canals and the boundaries of the fields, which separate the fields of one family from those of another, except those which are called oil beans or Eighth month white bean and Water white bean. These last are planted in large fields. The oil beans are planted early in June.” The method of cultivation, harvest, and threshing is then described in detail. A table gives the time of planting and harvest for 18 varieties of Chinese soybeans, grouped into 6 types by planting and harvest dates: (1) Plant in latter part of April, harvest in latter part of Sept.: *Heidou* (black [soy] bean), *huangdou* (yellow bean), *maliaodou* (horse material / feed bean), *guguo qingdou* (bone wrap green bean), *jiajia sandou* (pod pod three bean), *xiangzhidou* (fragrant branch bean). (2) Plant in early part of June, harvest in middle part of Sept.: *bayue baidou* (8th month white bean), *shuibaidou* (water white bean), *maquedou* (sparrow bean). (3) Plant in early part of July, harvest in early part of Oct.: *equedou* (chirp magpie bean), *niuta biandou* (cow tread flat bean), *shijia xiandou* (ten family fragrant bean), *xifeng qingdou* (west wind green bean), *shizi hedou* (persimmon pit bean), *denglongdou* (lantern bean). (4) Plant in early part of April, harvest in early part of July: *guashudou* (melon ripe bean). (5) Plant in early part of April, harvest in latter part of July: *shidou* (fennel bean). (6) Plant in early part of April, harvest in latter part of June: *yadou* (sprout bean).

The rest of the work concerns the food products of the beans, including a detailed description of how each is made.

Note 7. This document contains the earliest date seen for soybeans in Australia or Oceania (1875). It is not clear whether or not these soybeans were cultivated in Australia; they may well have been. The source of these soybeans is unknown, as is the author’s source of information concerning that early introduction, 43 years before Shih wrote this booklet. He is the first to give such an early date for the introduction of soybeans to Australia. Yet the date does not seem unreasonably early since there were 17,000 Chinese in Australia by 1855 (see Australian Department of Immigration and Ethnic Affairs. 1985. “A Land of Immigrants”). Address: Biology Dep., Soochow Univ., China.

576. Shih, Chi Yien. 1918. Beans and bean products: Tou Chiang or bean sauce [Chinese-style miso] (Document part). Shanghai, China: Soochow University Biology Dept. 13 p. See p. 6-7. [Eng]

• **Summary:** (Cc) = Chinese characters inserted in text; pinyin romanization has been added. Tou Chiang or Bean

Sauce (Cc = doujiang): This product can be made from any kind of beans: but it is largely made from Water White Bean (Cc = shui baidou) *Phaseolus Vulgaris*. (Note: This reference to *Phaseolus Vulgaris* (common bean, pinto bean, navy bean, frijole, etc.) is puzzling. Doujiang is usually made from soy beans.) It is made in the following way:—(1) Soaking the beans in cold water about twelve hours. (2) Washing the beans thoroughly in cold water. (3) Then boiling the beans about six hours in water. (4) After thoroughly boiling, the beans are taken out from water and allowed to cool. (5) Then dipping the moistened beans into wheat flour so that the flour sticks on the beans. (6) Spreading the beans upon matting and covering with the large leaves of reeds to allow them to become molded. (7) After one week, the beans are thoroughly covered with a whitish mold and then they are placed in the sunshine for about two days. (8) Then pouring the beans into a big earthenware jar containing cold water and salt. Every ten catties of the mixture requires eight catties of salt and forty catties of water. (9) Then the jar is put in the sunshine for about one week and the beans are ground into a black, thin liquid, having an agreeable saltish flavor, and frothing up of yellow color when the jar is even slightly shaken. This thin liquid is called Tou Chiang or bean sauce. (10) After grinding, the Tou Chiang is kept in the sunshine 2 weeks longer. (11) Then the Tou Chiang is put into a small earthenware jar which is covered with a straw cover. In this jar it can be kept indefinitely. If the Tou Chiang becomes sour in taste, it must be restored by boiling for about three hours.

“The Tou Chiang is used to boil with any kind of cabbage or meat. It is sometimes used as a sauce and eaten with meat to give a salty flavor.” Address: Biology Dep., Soochow Univ., China.

577. *Virginia Department of Agriculture and Immigration, Bulletin*. 1918. Soy bean useful crop. May be utilized in greater number of ways than almost any other agricultural product. No. 126. p. 174-76.

• **Summary:** “In addition to its availability as a food, soybean oil has found important uses in the markets of the world for making paints, varnishes, soaps, rubber substitutes, linoleum, waterproof goods, and lubricants. It is also used in the Orient for lighting and in the manufacture of printing ink. In Japan the soy bean forms one of the most important articles of food in use. It is one of the principle ingredients in the manufacture shoyu (soy sauce), miso (bean cheese), tofu (bean curd), and natto (steamed beans). The beans are eaten also as a vegetable and in soups; sometimes they are picked green, boiled, and served cold with soy sauce, and sometimes as a salad. A ‘vegetable milk’ is also produced from the soy bean, forming the basis for the manufacture of the different kinds of vegetable cheese. This milk is used fresh, and a form of condensed

milk is manufactured from it. All of these foodstuffs are used daily in Japanese homes, and for the poorer classes are the principle source of protein.”

“An artificial milk like that manufactured in the Orient has been produced in small quantities in the United States, and recently a factory has been equipped to make this product.” Photos show: (1) Soy beans as a forage crop, arranged in stacks. (2) Lime spreader at work. Address: Virginia.

578. Daizu Seisan Gaisha (Soybean Food Products Co.). 1919. Save food. Dealers in soybeans and soybean products (Ad). In: Nichibei Shinbun-sha. 1919. *Japanese-American Directory (Nichibei Jushoroku)*. Page 40 near front. [Jap; eng]

• **Summary:** Ad (full-page). The top half of this ad is in English, with large, bold letters. The company, which has a factory in Petaluma, lists the following products in Japanese characters (*kanji*): *Daizu shushi* [Soybean seeds]. *Shoyu-yo daizu* [Soybeans for use in making shoyu / soy sauce]. *Jozo-yo daizu* [Soybeans for use in making fermented products; miso and perhaps natto seem to be implied]. *Tofu-yo daizu* [Soybeans for use in making tofu]. *Tofu-ko* [Tofu powder]. Note: Not clear what this is / means. *Seisei nigari* [Refined nigari (probably magnesium chloride)]. *Mamekasu* [Soybean presscake, probably left over from making soybean oil].

The following product names are written in Japanese katakana characters: Soybean oil, soybean flour, soybean table sauce, soybean butter, soybean cheese, soybean candy, soybean feed.

In the center of the ad is the company’s smaller logo, with all the text in English: Sun Brand Soy. Registered U.S. Patent Office. Above the huge “Save Food” logo near the top of the is an American flag in a circle surrounded by ears of wheat. Just above that, across the very top of the ad we read: “With patronization of U.S. Food Administration.”

Note: No address in San Francisco is given in the ad. Note 2. World War I ended not long ago. Address: San Francisco, California.

579. **Product Name:** Kikko San-jirushi Sweet White Miso, Shoyu, and White Koji.

Manufacturer’s Name: Hokubei Miso, Shoyu Seizo Oroschi Kouri (North American Mfg. Co.).

Manufacturer’s Address: 519 East 1st St., Los Angeles, California. Phone: 64215.

Date of Introduction: 1919. January.

New Product–Documentation: The Japanese American Directory. 1919. p. 368. Ad (¼ page). At the top of the ad in English: “North American Mfg. Company, 519 E. 1st St., Los Angeles, Cal.” Most of the ad is in Japanese. The three words at the end of the company’s Japanese name mean “Manufacturing, Wholesale, and Retail.” The large, central

logo, a hexagon with three horizontal lines inside, is probably pronounced “Kikko San-jirushi.” The company makes high-class sweet white miso (*joto shiro miso*) and white koji (*shiro koji*) [as well as shoyu]. The owners are NISHI Isokichi and YAMASHITA Iwasuke.

The Japanese American Directory. 1920. p. 277. Ad (¼ page). This is as basically the same as the one which appeared in 1919, except it looks very different because the large logo has changed. The outside is still a hexagon (although smaller and bolder) but inside it is the number “3” but having an unusual form that makes it look like a cross between the usual Arabic numeral “3” and a Tibetan character. Apparently the previous logo either belonged to another company or looked too Japanese.

The Japanese American Directory. 1920. p. 296. Hokubei Miso, Shoyu Seizô-sho, 519 East 1st St., Los Angeles. Phone: 64215. Also in 1921, p. 288 (ad) and p. 314 (directory). The directory gives the company name as Hokubei Miso Seizô-sho. Also in 1922, p. 315 (directory) and ad (¼-page, p. 321). At the top of the ad is written in English: “N.A. Miso Mfg. Co., 519 E. First St., Los Angeles, Calif.” In Japanese, the company’s name has changed to Hokubei Miso, Koji Seizô Moto Oroshiuri [Manufacturing and wholesale]. The word “Shoyu” no longer appears in the company name or in the ad, as it did in 1919-21. Also in 1923, p. 347 (ad; In Japanese, the company’s name has changed to Hokubei Miso, Koji Seizô, Tsukemono Seizô Oroshiuri. Tsukemono are Japanese-style pickles) and p. 355 (directory: Hokubei Miso Seizô-sho). Also in 1924, p. 371 (¼-page ad) and p. 394 (directory). Also in 1925, p. S-17 (½-page horizontal ad. New name in English: “North American Miso M’f’g. Co.” New phone number: TUcker 4215) and p. S-44 (directory). Also in 1926, p. S-15 (Full-page ad. Name in English is now “North American Miso Mfg. Co.” An illustration shows a large box of dried koji (*hoshi koji*) near top center of ad) and p. S-33 (directory; Hokubei Miso Seizô-sho).

The Japanese American Directory. 1930. p. S-53. The company (Hokubei Miso Seizô-sho) now makes only miso. Phone: TUcker 4215. Also in 1932, p. 346 (directory; this old company has a new name: Kikko San Miso Seizô-sho. The address, although unchanged, is now written in English: “519 E. First St.” New phone: VAndike 5702). Also in 1934, p. 305 (directory; same company name, address and phone number).

580. Japanese American News Inc. / Nichibei Shinbunsha. 1919. Nichibei jûshoroku [The Japanese American directory. No 15]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, San Jose, Sacramento, Los Angeles. Plus

Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements. This directory was published on 1 Jan. 1919 by Nichibei Shinbunsha. For each of the directory entries, the company name is written in Japanese characters; the street address and phone number are written in English. Within each city, businesses of the same type are grouped together under a Japanese heading. In this volume the makers of soyfoods in San Francisco are all on pages 67-68 under the heading *Shokuryo-hin Seizo-sho* (Food manufacturing companies). Address: San Francisco, California.

581. **Product Name:** Miso.

Manufacturer’s Name: Maruman Miso Seizo-sho.

Manufacturer’s Address: 1531 Geary St., San Francisco, California.

Date of Introduction: 1919. January.

New Product–Documentation: The Japanese American Directory. 1919. p. 68. No phone listing. Also in 1920, p. 57. Also in 1921, p. 64.

582. **Product Name:** Miso.

Manufacturer’s Name: Mihara Miso Seizo-sho.

Manufacturer’s Address: 1415 Laguna St., San Francisco, California. Phone: West 5058.

Date of Introduction: 1919. January.

New Product–Documentation: The Japanese American Directory. 1919. p. 68. Also in 1920, p. 57. Also in 1921, p. 64. But the phone number has changed to Fillmore 2719. Also in 1922, p. 40, but the address has changed to 1417 Laguna St. from 1415. Also in 1923, p. 60. Also in 1924, p. 59. Also in 1925, p. N-17. Also in 1926, p. N-22.

The Japanese American Directory. 1930. p. 18. Mihara Miso Seizô-sho, 1417 Laguna St., San Francisco, California. Phone: Fillmore 2719. Also in 1932, p. 3. Also in 1934, p. 20. Also in 1936, p. 34. Also in 1937, p. 8. Also in 1938, p. 8.

583. **Product Name:** Miso.

Manufacturer’s Name: Nagatomi Miso Seizo-sho.

Manufacturer’s Address: 1532 Post St., San Francisco, California. Phone: West 3286.

Date of Introduction: 1919. January.

New Product–Documentation: The Japanese American Directory. 1919. p. 68. Also in 1920, p. 57. But address is now 1534 Post. St.

584. **Product Name:** Miso, Koji.

Manufacturer’s Name: Sanyo Shokai [Sanyo Co.].

Manufacturer’s Address: 69 N. 5th St., Portland, Oregon.

Date of Introduction: 1919. January.

New Product–Documentation: Ad (1/8 page) in The Japanese American Directory. 1919. p. 230. Sanyo Shokai, 539 Delay St., Portland, Oregon. Phone: 1397 (written in

Japanese characters). They make and sell shoyu, miso, and koji (*issai seizô hanbai*) plus various other non-soyfoods.

585. **Product Name:** Miso, Koji.

Manufacturer's Name: Wada Miso, Koji Seizo-sho (Wada Miso & Koji Mfg. Co.).

Manufacturer's Address: 1436 Cahuenga Ave., Los Angeles, California. Phone: 579136.

Date of Introduction: 1919. January.

New Product–Documentation: The Japanese American Directory. 1919. p. 368. Ad (1/8 page), lower right. Wada (or possibly Maruta) brand miso and koji. Address in Japanese: 2436 Cahuenga, Hollywood, Los Angeles. Address in English: 1436 Cahuenga. Sanitary, economical, and tasty. The world's best. Wada miso. Note: Subsequent ads show that 1436 is the correct street number.

586. Denton, -; Yeatman, -. 1919. Miso sauce, Received from Miss Margaret B. Church (Dr. Thom), Bureau of Chemistry. January 8, 1919. USDA Office of Home Economics, Experimental Kitchen [Washington, DC?]. 2 p. Unpublished manuscript.

• **Summary:** Contains 5 American-style recipes.

587. USDA Bureau of Chemistry. 1919. Inspection of imported foods: Label for samples. San Francisco. 1 p. each.

• **Summary:** These three inspection forms have been filled out to show that samples of red miso (shipped from Yokohama), white miso (shipped from Kobe), and bean paste (made by Suruqaya & Co. in Wakayama), all imported from Japan, were inspected in San Francisco by the USDA Bureau of Chemistry. The 3 samples arrived on May 26 and 27 on the steamers Shimpu Maru and Nippon Maru. On June 4 and 5 they were forwarded to Margaret B. Church, Microanalyst at the Microbiological Laboratory. Address: San Francisco.

588. Phelps, J.K. 1919. Re: Analysis of Japanese miso and bean paste conducted for Miss Margaret B. Church, Microbiological Laboratory. Letter to Miss B. [sic] Church, July 1. 1 p. Typed, with signature on letterhead.

• **Summary:** The products are designated White Miso, Red Miso, and Japanese Bean Paste [probably azuki bean paste]. Each was analyzed for percentage of moisture, total ash, protein, fat, sucrose (Clerget), reducing sugars as invert before inversion, reducing sugars as invert after inversion, crude fiber. The Japanese Bean Paste “evidently contains agar-agar as the microchemical examination showed the presence of diatoms.” J.F.B. adds in a handwritten note: “This total ash is doubtless too low, probably heated too far.” Address: Chemist in Charge, Food Control Lab., Bureau of Chemistry, USA, Washington, DC.

589. Takahashi, A. 1919. Re: Response to request for sample of miso. Letter to Miss Margaret B. Church at Bureau of Chemistry, Washington, DC, Aug. 12. 1 p. Typed, with signature on letterhead. [Eng]

• **Summary:** In her letter of May 27, Miss Church asked him to please send a sample of miso. She received his sample of shoyu. “There are two or three kinds of Miso manufactured in Japan, but we usually import only one kind—*shiro miso*. *Shiro* means ‘white’ in English. I am sending sample bottle under separate cover, and this is the best quality of shiro miso manufactured in Japan; this is a fresh sample, only having been made four or five months, as it is a commodity that is easily manufactured.”

He is also trying to find her a sample of *aka miso* or Red Miso, “which requires a considerable time to manufacture.”

Note: The writer is the younger brother of Teizo Takahashi, who is a lecturer at the “Imperial University of Tokyo.” Address: Pacific Trading Co., 331-343 Battery St., San Francisco, California. Phone: Sutter 270.

590. Bowers, William G. 1919. Some studies on the nutritive value of the soy bean in the human diet. *North Dakota Agric. Exp. Station, Special Bulletin, Food Department* 5(13):278-328. Aug. Reprint of his 1919 PhD thesis, Ohio State Univ. 28 cm. [65 ref]

• **Summary:** Contents: Part I: Introductory. Extent of production. Human food preparation made from the soy bean. Varieties and chemical composition. Character of the carbohydrates of the soy bean and its bearing on nutrition. Character of the fats of the soy bean and its bearing on nutrition. Character of the protein and its bearing on nutrition. Vitamines of the soy bean. Minerals of the soy bean. The soy bean compared to some other legumes used as human food as to fuel value and organic nutrients. Digestibility of soy bean products.

Part II: Experimental part. The character of the materials used in the experiments. Digestibility of soy cake meal baked into bread. Digestibility of soy cake meal mush. A study of the nutritive value of the nitrogen free contents of the soy bean. Malt digestion. One per cent HCl [hydrochloric acid] extract (incl. pentosans, galactans, true cellulose). Milling of the soy bean: Composition of parts (incl. “the bran”), digestibility of the bran, the nitrogen-free extract, crude fiber, physical effects of a diet solely of a mush made from the bran, the calcium oxide and phosphorus pentoxide content of the soy bran and soy meal. Toxic and disagreeable or unpalatable substances of the soy bean: Some investigations as to the possible poisons, location and elimination of the disagreeable and unpalatable substances (20 experiments, incl. soy and navy bean bran, benzine extracted soy and navy bean meal, alcohol extracted soy and navy meal, a steam distillation for the purpose of separating objectionable flavor). Discussion of results. Summary.

Introductory: Only within the last 35 years “has the soy bean been considered with much favor as a food for stock. Only within the last ten or fifteen years has it met with any favor at all as a food for man” (p. 279). “Soy milk and soy milk products are being made in the United States now” (p. 280). “Roasted beans. Soy beans may be roasted in an oven or ordinary corn popper. They are heated until the beans are burst like popcorn. The beans thus roasted may be softened by immersing in a syrup while they are hot. This is said to make a wholesome candy. The roasted beans may be powdered and used as a salad dressing or employed as a substitute for coffee” (p. 281). “The fresh green beans, those that have been dried without being allowed to ripen thoroly [sic, thoroughly], or those that have ripened on the vine after the vine has been pulled show slight amounts of starch” (p. 282).

“Experimental part (p. 287): “In our experimental work we propose to inquire into the digestibility of soy cake meal. We shall then determine the digestibility of the different carbohydrates as found in a representative variety of the soy bean. After passing some of the beans thru a milling process we shall study the composition and digestibility of the meal and bran and determine their relative amounts of calcium and phosphorus, and locate any possible poisons or objectionable substances that may be present in either of these. This will make it possible, then, to determine whether or not it would be profitable to carry on the milling process and eliminate certain products, or whether by the use of certain extractives we can get rid of the objectionable constituents.”

Recalling the fact that “navy bean bran is so indigestible and is responsible for fermentation and discomforting gas in the digestive system, we were led to the effort to separate the bran and the meal of the soy bean and make determinations of each separately... we found the bran to constitute 8% of the whole bean.” The germ was 1½% and the remainder was cotyledon. “The bran consisted of very large flakes. We had to grind it thru a burr mill three times before it would pass thru a twenty mesh sieve” (p. 301-02). The bran can be easily separated from the soy bean by milling. It is composed of about 37% crude fiber and 43% nitrogen free extract. “Digestibility experiments on the bran showed that the nitrogen free extract, including the hemicelluloses and waxes, is about 84% digestible, which is much less than that of the whole bean. (p. 323).

“In order to see what would be the physical effects of a day’s diet on the bran alone, we made three meals of 30 grams each for one day. Next day we were a little uncomfortable on account of a slight amount of gas in the bowels. We were a little weak and very hungry but not sick. The next day the stool was voluminous but not so very soft. The diet had neither a laxative nor a constipating effect that could be noticed” (p. 304).

“In most of the Japanese foods made from the soy bean the disagreeable flavor is avoided by the nature of the preparation made. These, of the most part, involve some sort of fermentation which changes the flavor entirely. The Domestic Science Department of the Ohio State University [under the leadership of Dr. J.F. Lyman, with help on milling from Dr. Park of the Farm Crops Dept.], has carried on considerable experimentation making different preparations, combinations and extractions, as well as making use of different methods of cooking soy bean preparations, to avoid the disagreeable flavor.”

The calcium oxide content of the bran was found to be 0.8% and the phosphorus pentoxide content 0.27%. No salicylic acid was found in the bran, and no hydrogen cyanide or cyanates in the samples tested. There was no trace of tannin in the bran and only a slight trace of alkaloids.

“As far as flavor is concerned there is no point gained in removing the bran from either the soy bean or the navy bean. The beany flavor and some of the disagreeable taste can be easily removed from the soy bean by steam distillation, but the disagreeable flavor in the oil cannot be removed in this way.”

Numerous tables show compositional percentages of soy beans, and a summary of results. Charts (bar graphs) show experimental results. An illustration (line drawing; p. 297) shows the apparatus for extracting meal with 95% alcohol.

Note 1. Although this document was reprinted as a Special Bulletin by the Food Department of the North Dakota Agricultural Experiment Station, it has nothing to do with North Dakota per se, and makes no mention of soybeans being used or grown in North Dakota.

Note 2. This is the earliest English-language document seen (Oct. 2001) that mentions soy bran, which it calls “soy bran.” It is also the earliest document seen concerning the etymology of soy bran.

591. Phelps, J.K. 1919. Re: Analysis of Japanese White Miso conducted for Miss Margaret B. Church, Microbiological Laboratory. Letter to Miss M.B. Church, Oct. 8. 1 p. Typed, with signature on letterhead.

• **Summary:** This white miso product contained: Moisture 19.18%. Total ash 6.70%. Protein 10.20%. Fat 2.72%. Sucrose—none. Reducing sugars as invert before inversion 21.75%. Reducing sugars as invert after inversion 22.03%. Total acids (as acetic) 1.44%. Starch (diastase method) 3.59%. Alcohol—none.

“Microchemical of whole sample showed the presence of a little starch although whole rice kernels were found.”

Margaret Church adds in a handwritten note: “Shiro (white) miso—finest grade, rec’d [received] from A. Takahashi summer of 1919.” Address: Chemist in Charge, Food Control Lab., Bureau of Chemistry, USA, Washington, DC.

592. *Christian Science Monitor*. 1919. The window of the world. Oct. 13. p. 3.

• **Summary:** The section titled “Climbing prices in Japan” states that “Japan finds herself in the same economic fix as other nations,” with prices that continue to climb; “the high cost of living threatens the livelihood of the majority of the Nation.” Figures show that “compared with August, 1918, the cost of rice just before the rice riots last spring had risen by 9.1 per cent, sugar by 34.5 per cent, miso by 21.1 per cent, soy [sauce] by 11.7 per cent,…” Citizens of all nations of “the world sympathize with each other because they are all in the same boat.”

About 30 newspapers have been suppressed by the government for “expressing incendiary thoughts on the subject of rice.”

593. **Product Name:** Miso.

Manufacturer’s Name: Honolulu Miso Factory. Called Hamamura Kojiba in 1935.

Manufacturer’s Address: 1134 Peterson Lane, Honolulu, Oahu, Hawaii.

Date of Introduction: 1919.

New Product–Documentation: Polk-Husted Co.’s Directory of Honolulu and the Territory of Hawaii. 1919. p. 360, 1285, 288. “Honolulu Miso Factory, S. Fujikawa, proprietor, 1134 Peterson Lane.” Mr. Fujikawa (p. 288) apparently lives at this address. The year 1919 is the first year that a business category listing for “Miso Manufacturers” appears in this city directory (p. 1285), and this company is the first listed miso company in Hawaii. The 1920 directory lists K. Enomoto as the proprietor. The phone is now 89064. Mr. Enomoto (p. 277) also apparently lives at the plant. 1924 Directory. p. 208. Kiyochi Hamamura (Honolulu Miso Factory). Residence, 1607a Pohaku. 1928-29 Directory. p. 205. Kojiba Hamamura (Kyoichi Hamamura), Miso Manufacturers, 1134 Peterson Lane, Tel. 8001. Note that the company name now appears as K. Hamamura rather than Honolulu Miso Factory.

594. **Product Name:** Sweet White Miso (*Shiro Miso*).

Manufacturer’s Name: Norio Co. Renamed Norio Koji, Miso Seizo-sho by 1922.

Manufacturer’s Address: 1531 Geary St., San Francisco, California. Phone: Fillmore 4368.

Date of Introduction: 1919.

New Product–Documentation: The Japanese American Directory. 1922. p. 40 (directory; Norio Koji, Miso Seizô-sho, 1531 Geary St. Phone: Fillmore 4368) and p. 41 (1/8-page ad, lower left. Norio Shokai, 1531 Geary St. Same phone. Making shiro miso (sweet white miso), koji, and Sakura Miso {probably a red rice miso}. Logo: The character for 10,000 in a circle, probably pronounced

“Maruman”). Note: In 1921 Maruman Miso was at this address and phone number.

Note: In the San Francisco City Directories (all English), 1917-1930, there is no listing for Norio Co. or anything like it except a 1930 listing for Norio Sadaichi rice dealers.

The Japanese American Directory. 1923. p. 60 (directory). Also in 1924, p. 58 (directory). Also in 1925, p. N-17 (directory) and p. N-17 (¼-page ad; at the top part of this ad is written in English: “Norio & Co., 1531 Geary St., San Francisco, Calif.” About half of the ad is in Japanese characters: Norio Koji, Miso Seizô-sho, 1531 Geary St., Phone: Fillmore 4368. Maker, wholesaler, and retailer of koji, shiro miso, and Sakura Miso. Illustrations show a box of the company’s koji, and one keg of miso stacked atop two others, side by side). Also in 1926, p. N-22 (directory).

Also in 1930, p. 15 (1/3-page ad, very similar to that in 1925 but larger. Address: 1531 Geary St., San Francisco. Phone: Fillmore 4368. They make koji, sweet white miso (*shiro miso*), sakura? miso. Manufacturing, wholesaling, and retailing. Illustrations show: A box of dried koji {*hoshi-koji*; high quality}. Three tubs of miso) and p. 18 (directory; gives the company name as Norio Koji, Miso Seizô-sho, in characters). Also in 1932, p. 17 (directory). Also in 1934, p. 20. Also in 1936, p. 34 (directory; the company name is still Norio Koji, Miso Seizô-sho. But the address is now 1532 Post St. The phone is still Fillmore 4368). Also in 1937, p. 8. Also in 1938, p. 8. Also in 1939, p. 7. Also in 1940, p. 7.

The Japanese American Directory. 1941. p. 7. Listed in the category “Food Products Manufacturers.” Norio Koji Miso Seizô-sho (Norio Co.), 1532 Post St., San Francisco, California. Phone: Fillmore 4368. Also listed in the 1942 Directory. Norio Shoten (Norio Co.), 1534 Post St. Phone: Fillmore 5368.

Hokubei Mainichi Year Book. 1951, p. 9. Ad (½ page, vertical). Top 1/3 of the ad is in English. “Norio Company, 1532-34 Polk St., San Francisco 9, Calif. Tel. WEst 1-8672. Soy bean products.” Below that is the large “Maruman” logo. In Japanese: Maker and wholesaler of Maruman brand miso and koji. Also sells soybeans and nigari. Directory entry, under “Food Products: Wholesalers” (p. 37), and under “Food Products” (p. 38). Norio Miso Tofu Seizô-sho (Norio Co.), 1534 Post St., WE 1-8672. Note that they now make tofu!

Nichi-Bei Jiji Jushoroku [Japanese American Times Directory]. 1952, p. 16. Under “Food Products; Grocers-Whsle.” In Japanese: Norio Miso Tofu Seizô-sho. In English: Norio Co., 1532 Post St., San Francisco. Phone: WE 1-8672. Ad (¼ page), p. 21. Top 1/3 of ad is in English. Norio Company, 1532-34 Post St., San Francisco. Phone: WEst 1-8672. In Japanese: Maruman brand. Miso koji seizô [manufacturing]. Note: Do they make both tofu and koji?

Hokubei Mainichi Nenkan (Year Book). 1970. Page 11. Half-page vertical ad. Address has expanded to 1532-34 Post St., San Francisco 9, Calif. Phone: 931-8672. “Soy

bean products” (in English). Their large logo is still Maruman, with the character *Man* (meaning ten thousand) inside a bold circle. The bottom half of the ad (in Japanese) states that they make and sell (wholesale) Maruman brand miso and koji. They also sell tofu and agé. Directory entry, p. 37 under “Food Products.” *Norio miso tofu seizô-sho* [Norio, maker of miso and tofu].

B.W. 1971. *East West Journal*. 1(14):6. Arikawa. 1982, personal communication; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. The second earliest know miso company in the continental USA was started in 1919 by Mr. Masaichi Norio. He made only shiro miso and exported most of it to Hawaii (Based on two interviews with Mr. Arikawa, former owner of the Norio Co.; He still lives in San Francisco. Phone: 415-387-7217). Note: Even though the company may have “started” in 1919, it was not listed in any directory seen until 1922.

Talk with Mr. Arikawa. 1989. Dec. 6. The company started on Geary St., then moved to 1532 Post St. before 1930. The owner bought the company of a competitor at that address on Post street [probably Kanedai Koji Miso Co. at 1534 Post St.] and merged the two companies.

595. **Product Name:** [Sendai Miso].

Foreign Name: Sendai Miso.

Manufacturer’s Name: Sendai Miso Shoyu K.K.

Manufacturer’s Address: Furujiro 1-5-1, Sendai-shi 982, Japan.

Date of Introduction: 1919.

Ingredients: Water, rice, soybeans, salt.

How Stored: Shelf stable.

New Product–Documentation: The present owner is the ninth generation. Letter from Mitsuo Miyazawa. 1988. Jan. This company, Sendai Miso Shoyu K.K. was founded in 1919, as an amalgamation of many smaller miso and shoyu companies in the area. The first miso made was called Sendai Miso, and the first Shoyu was called Josen Shoyu. The Josen brand originated in 1919.

596. Hedrick, U.P. ed. 1919. Sturtevant’s notes on edible plants. Albany, New York: J.B. Lyon Co., state printers. vii + 696 p. Index. 30 cm. Series: New York, (State) Dept. of Agriculture, 27th Annual Report, 1918/19, vol. 2, part II. [9 soy ref]

• **Summary:** The 2,897 plants are arranged alphabetically by genus and species. Common names and synonyms are listed alphabetically. Contains many footnotes and a huge bibliography.

The entry for “*Glycine soja* Sieb. & Zucc.” (p. 291-92) states: Family: Leguminosae. Synonyms: Coffee bean, soja bean, soy bean. Origin: Tropical Asia. Contains a summary of information from other sources, and mentions “the sauce known as soy,” miso, and oil.

Also discusses: *Amaranthus paniculatus* (prince’s feather, red amaranth). *Apios tuberosa* (groundnut). *Arachis hypogaea* (earth nut, earth almond, goober, grass nut, ground nut, peanut, pindar). *Cannabis sativa* (fimble, gallow grass, hemp). *Chenopodium quinoa* (petty rice, quinoa). *Coix lachryma-jobi* (Job’s tears). *Cyperus esculentus* (chufa, earth almond, zulu nuts). *Gracilaria lichenoides* (agar-agar). *Laminaria digitata* (red-ware, sea-girdles, sea-wand, sea-ware, tangle). *Laminaria esculenta* (badderlock). *Linum usitatissimum* (flax). *Lupinus albus* (field lupine, wolf-bean). *Lupinus hirsitus* (blue lupine). *Lupinus luteus* (yellow lupine). *Medicago sativa* (alfalfa, lucerne). *Porphyra laciniata* (laver, slokam, sloke). *Porphyra vulgaris* (laver). *Prunus amygdalus* (almond). *Psophocarpus tetragonolobus* (goa bean, pois carrés). *Sesamum indicum* (sesame). *Vigna catjang* (cowpea, Jerusalem pea, marble pea). *Voandzeia subterranea* (groundnut). Edward Lewis Sturtevant lived 1842-1898. A large oval portrait photo (frontispiece) shows E.L. Sturtevant. Address: Horticulturist, New York State Agric. Exp. Station.

597. Mattei, G.E. 1919. La soja ed i suoi prodotti [The soybean and its products]. *Bollettino di Studi ed Informazioni del Regio Giardino Coloniale di Palermo* 5(1/2):1-34. [40 ref. Ita]

• **Summary:** This article contains one of the best histories seen to date of the soybean in Italy, from 1760 to 1813. Contents: Brief history of the soybean. History of its taxonomic classification. Botanical description of the wild and domestic soybean. Varieties. Introduction of the soybean to Europe (especially France and Italy). The question of the root nodule bacteria. Cultural requirements. Importance / value of the production. Utilization of the seeds. Soy flour (*farina di soja*). Soymilk (*latte di soja*). Soy cheese [tofu] (*formaggio di soja*). Soy oil (*olio di soja*). Soy cakes (*panelli di soja*). Other Japanese preparations: Miso, shoyu, koji. Opportunities for soybean cultivation in Italy. Results of cultural trials at the Colonial Garden (*Giardino Coloniale*) in Italy.

“Introduction of the soybean into Europe: The soybean (*La Soja*) was long confined to East Asia, and it is only towards the 17th century that it appears in the Indian Archipelago; in fact, if it had existed in the Pacific islands at the time of Cook’s voyage, Forster surely would have reported it. Its introduction to the East Indies is even more recent. Roxburgh mentions its cultivation in the Botanical Gardens of Calcutta from seeds acquired from the Moluccas, in 1798. On the other hand, as Alphonse de Candolle observes, if its cultivation were ages-old, it would have spread long ago toward the West to Syria and Egypt, which did not occur.

“Its introduction to France is said to date back to 1739, when certain missionaries sent soybean seeds, from China,

to the *Jardin des Plantes* in Paris: the uncertainty however arises as to whether, even before this time, it was cultivated in Europe, since, as Saccardo points out, it appears that essays (*saggi*) on the plant exist in the *Herbarium* of Bartolomeo Martini of Verona, Italy, written (*composto*) in 1701.

“In any event, concerning France, the soybean is reported as being grown extensively in about 1821 at Champ-Rond near Etampes; it seems, however, that subsequently its cultivation was nearly lost; in fact, Lachaume, in the *Revue Horticole* of 1857 [pages 568-70. Nov. 16], reports it as a new introduction, thanks to the French Consul in Shanghai, and he describes and illustrates it.

“As for Italy, Pinolini [1905] dates the soybean to 1848 [sic, 1840]. It is possible that its cultivation as an agricultural plant began to spread from that date, but the existence of the soybean in Italy antedates this date by at least a century. Saccardo says in fact: ‘cultivated since the mid-18th century, and at times extensively, as in the Treviso region.’

“With the existence, as I have stated, of essays on the soybean in the *Herbarium* of Bartolomeo Martini of Verona, an herbarium written in 1701, one might suspect that from that time the soybean was being cultivated in the Verona region; but who could have brought the seeds? And if this were the case, why do we not find any reports of it in somewhat later authors? Or was the above-mentioned essay brought directly from the Orient. It should be noted that Kaempfer’s voyage to Japan dates to 1690, and we have the first accurate reports on the soybean in 1712 with Kaempfer’s own publication. Should we perhaps believe that some study, brought back by Kaempfer, was given to Martini? He might have obtained it from Zannichelli who, as Targioni-Tozzetti relates, in the life of Micheli, carried on a correspondence with Martini himself? Assuredly Kaempfer had to regard a plant which is used for so many purposes in Japan as important and it is possible he brought back essays about it, and perhaps even seeds.

“In any event, the *Jardin des Plantes* in Paris, after 1739, must have distributed seeds to various botanical institutions, including Italian. In fact, from the old *Catalogs (Cataloghi)* of the first Italian botanical gardens and from the pertinent *Index seminum*, we see that in the second half of the 18th century, the soybean is being cultivated almost everywhere: in 1760 Allioni mentions its cultivation in the Botanical Gardens of Turin; in 1780 Abbot (*l’Abate*) Farsetti introduced it to his Santa Maria di Sala garden near Venice; in 1785 Scopoli mentions it in Pavia; in 1787 Guatteri records it in Parma; in 1790, with the Botanical Gardens barely established, Tineo was cultivating it in Palermo, as results [show] from the Catalogue published in precisely that year; in 1793 Zuccagni refers to it in Florence; in 1798 Durazzo had introduced it into his garden Dello Zerbino

near Genoa; in 1801 Tilli mentions it in Pisa; in 1805 Graefer refers to it in Caserta; in 1807 Arduino introduced it to the Agricultural Gardens (*Orto Agrario*) of Padua; in 1811 Fabriani refers to it in Modena; in 1813 Tenora points it out in Naples, and the same may be said for other more recent reports. From this we see that, at the end of the 18th century, the soybean was already cultivated throughout Italy, not for agricultural but for scientific purposes, that is, in Botanical Gardens.

“Perhaps this information escaped those, like Pinolini, who did research on the soybean as an agricultural plant because, in all works dealing with plants cultivated at that time, the soybean is found under the name of *Dolichos soja*, the generic name *Soja*, of Moench or Savi, not yet having been adopted.”

In 1918 a soybean cultural trial was conducted at the Colonial Garden, Palermo, on a plot of 350 square meters; smaller experiments had been conducted in previous years. A variety was chosen which had almost spherical seed and was greenish yellow in color. The seeds were planted on March 29, in furrows at a spacing of 30 x 40 cm.; they germinated regularly about 10 days later. The plants were hoed twice to reduce weeds and irrigated eight times from the end of May until the end of August. Flowering began in early July and the seed was harvested on Nov. 15. The entire vegetative period was, therefore, 7½ months. The plants reached an average height of 90 cm. Their growth was luxuriant and there was a normal development of nodules on the roots. From this plot of 350 square meters, 51 kg of clean seed was harvested; this corresponds to a yield of about 1,450 kg/ha, which is considered quite satisfactory and could be increased by manuring. The beans, when cooked in different ways, were found to have an agreeable taste.

Talk with Ted Hymowitz, soybean geneticist, Univ. of Illinois. 2003. Aug. 18. Caution! It is not clear whether the early dates for soybean in Italy this article are based on herbarium specimens or living plants. With herbarium specimens, it is easy to make errors.

Note 1. This document contains the earliest solid dates and the second earliest overall dates seen (Aug. 2003) for soybeans in Italy, or the cultivation of soybeans in Italy (1760). The source of these soybeans is unknown. Yet note that the earliest possible date that the soybean was cultivated in France was about 1740. Perhaps there was some connection between the earliest possible soybean cultivation in France and in Italy.

Note 2. This article was reprinted in the Nov. 1991 issue of *Il Giornale della Soia* (p. 11-16). Address: Royal Botanical Garden (R. [Regio] Orto Botanico), Palermo, Italy.

598. Rouest, Leon. 1919. Étude sur le soja [Studies on the soybean]. *Genie Rural (Le)* 11(99-100):23-26. (New Series

Nos. 39-40). Continued: See Rouest 1920. [Fre]

• **Summary:** Gives a brief overview of the history of soya in Europe and France, including Li Yu-ying, Dr. Bloch, the Soyanna [sic, Soyama] Werke near Bockenheim, Messrs. Paillieux, Sagot, Raoul, and Jumelle, and the various soyfoods from China and Japan that they describe (Miso, shoyu {*Shoyua*}, tofu {*Tofou*}, dried frozen tofu {*Kouri Tofou*}, yuba {*Uba*}), and the potential threat of soya to the French cheese industry. “Finally in 1910-11 numerous soy products were presented at the expositions in Brussels [Belgium], Turin [France], and Dresden [Germany].”

Describes work on the *Ferme Expérimentale de Néoculture du Sud-Est*, at Villardonnell, Aude. Mr. Semichon, Director of the wine station at Aude, sent this experimental farm some soybean seeds which he received from the USDA accompanied by a bulletin written by William Morse (probably “The soy bean: Its culture and uses,” 1918). Rouest translates the Bulletin into French. The most important varieties mentioned are: Mammoth, Hollybrook, Ito San, Guelph, Haberlandt, Medium Yellow, Wilson, Peking, Tokio, Manchu, Black Eyebrow, Barchet.

Rouest was born in 1872. Illustrations (line drawings, both non-original) show: *Soja hispida* plant, with close-up of a cluster of pods. *Soja Hato* soybean plant. Address: Director, *Ferme Expérimentale de Néoculture du Sud-Est*, at Villardonnell (Aude), France.

599. *USDA Bureau of Plant Industry, Inventory*. 1919. Seeds and plants imported by the Office of Foreign Seed and Plant Introduction during the period from January 1 to March 31, 1916. Nos. 41685 to 42383. No. 46. 97 p.

• **Summary:** Soy bean introductions: *Soja max*: “42058/42065. From Keijo, Chosen (Korea). Presented by Miss Katherine Wambold. Received February 28, 1916. Descriptive notes by Miss Wambold.

“42059. ‘*Kong*. Cooked, pressed, hung all winter to rafters, then soaked in a brown liquid called *chang*, used as a salty sauce on food. It is parched then eaten. A few partly cooked grains are often scattered in the rice, as we use raisins in a rice pudding.” Address: Washington, DC.

600. **Product Name:** Hishinaka-jirushi Miso, Koji.

Manufacturer’s Name: Nakamura Miso Seizo-sho (Nakamura Miso Mfg. Co.).

Manufacturer’s Address: 306 North Ave. 22, Los Angeles, California. Phone: 31422.

Date of Introduction: 1920. January.

New Product–Documentation: The Japanese American Directory. 1920. p. 295. Ad (1/8) page in lower left. The company name and address are written in English near the top of the ad. But about 85% of the ad is in Japanese. Hishinaka-jirushi brand miso and dried koji for easy long distance shipping. Also in 1920, p. 296. Directory entry gives same information as above. Also in 1921, p. 314

(directory and 1/8 page ad). Also in 1922, p. 315 (directory) and p. 329 (1/8 page ad). Also in 1923, p. 347 (ad) and p. 355 (directory). Also in 1924, p. 394 (directory; new phone number: Capital 1971) and p. 394 (¼-page ad). Also in 1925, p. S-44 (directory) and p. S-49 (1/8 page Ad). Also in 1926, p. S-35 (directory) and p. S-71 (1/8-page ad).

Ad (1/8 page) in The Japanese American Directory. 1930. p. S-30. The address is still 306 North Ave. 22, Los Angeles, California. Phone: CApitol 1971. Owner: Mr. Kentaro Nakamura. You don’t need moto! (*Moto wa irazu*). (Note: “Moto” is the “mash” made from rice koji that is used to make saké. If you have koji, you can make your own moto, from which you can make sake). Miso, koji, Japanese-style pickles (*tsukemono*). Manufacturer and wholesaler (*Seizô oroshi-sho*). The directory entry (p. S-53) contains the same name, address, and phone number.

Also in 1932. p. 346 (directory; new phone: Capital 3949). Also in 1934, p. 305. Address is now written (in English): 306 N. 22nd Ave. Also in 1936, p. 374 (directory). Also in 1937, p. 320. Also in 1938, p. 348. Also in 1939, p. 327. The company name is given. But surprisingly, no address or phone number are given.

The Japanese American Directory. 1940. p. 326-27. Listed in the category “Foodstuff Factory.” Unlike all other companies in this category, no street address or phone number is given. Also in 1941, p. 328; again no street address or phone number is given. Nakamura Miso Seizô-sho (Nakamura Miso Mfg.).

601. Okazaki Co. (Okazaki Shokai). 1920. General importer and exporter (Ad). In: Nichibei Shinbun-sha. 1920. *Japanese-American Directory (Nichibei Jushoroku)*. Page 57. [Jap; eng]

• **Summary:** Ad (¼ page). The top 1/5 of this ad is in English. The company specializes in selling rice, miso, shoyu, tea, canned goods, etc. Address: 545 Grant St., San Francisco, California. Phone: Douglas 1656.

602. **Product Name:** [Yamaizumi Sweet White Miso, Fresh Koji, Dried Koji].

Foreign Name: Yamaizumi Shiromiso, Nama Koji, Hoshi Koji.

Manufacturer’s Name: Yamaizumi Miso Seizo-sho.

Manufacturer’s Address: 1436 Cahuenga Ave., Los Angeles, California.

Date of Introduction: 1920. January.

New Product–Documentation: The Japanese American Directory. 1920. p. 277. Ad (¼ page, top right). At the top center of this ad is the large, bold Yamaizumi logo—a mountain over the character for “spring” (a source of water). Only the address is written in English: 1436 Cahuenga Ave., Los Angeles, Calif. They make shiro miso, fresh koji, and dried koji. Same ad in 1921, p. 305. Also in 1921 directory, p. 314. Their first phone: 579136. Also in

1922, p. 303 (ad) and p. 315 (directory). Also in 1923, p. 334 (ad, ¼-page bottom left) and p. 355 (directory; The company is at the same address but in Hollywood instead of Los Angeles. The new phone number: Holly 3036. Note 1. In 1900, the area named Hollywood today was called “Cahuenga.” Note 2. In 1903 Hollywood was incorporated as a municipality. Also in 1924, p. 394 (directory. New phone number in Hollywood: 433666).

Also in 1925, p. S-44 (directory, New phone number: HEMPstead 3666) and p. S-110 (directory, Yamaizumi Miso Shoyu Seizô-sho, 1436 Cahuenga Ave., Hollywood. Phone: HEMPstead 3666) and p. S-234 (¼-page ad). *Shiro miso, Kyushu-zuke, nama (fresh) koji and hoshi (dried) koji.*

Also in 1926, p. S-35 (directory) and p. S-75 (¼-page ad).

Ad (¼ page) in The Japanese American Directory. 1930. p. S-41. Yamaizumi Miso, Shoyu Seizô-sho is located at 1506 Fishburn St., City Terrace, Los Angeles, California. A large illustration shows the company logo. The source of the Yamaizumi brand (*Seizô hanbai moto*). There follows a poetic message in Japanese: Like a mountain spring, daily spring out our highly acclaimed sweet white miso (*shiro miso*), shoyu, chop suey sauce, koji, Kanro (sweet) Koji, and Japanese-style Kyushu pickles (*Kyushu-zuke*). The directory entry (p. S-53) contains the same name, address, and phone number. Note 3. City Terrace is about 3 miles east of downtown Los Angeles, near today’s USC Medical Center.

Also in 1932, p. 346 (directory; name is given as Yamaizumi Miso Seizô-sho. New phone number: ANgelus 6336). Note 4. The word “Shoyu” is no longer in the company name; they apparently no longer make shoyu. However, the use of a shorter company name in the directory than in the ad may reflect space limitations in the free directory.

Also in 1934, p. 395 (directory; Company name given in Japanese as Yamaizumi Miso Seizô-sho.) and p. 297. Ad (1/8 page). Yamaizumi Miso Shoyu Seizô-sho. Note 5. In the ad only “Shoyu” is back in the company name. 1532 Fishburn St., City Terrace, Los Angeles. Phone: ANgelus 6336. Also in 1936, p. 374 (directory; Yamaizumi Miso Seizô-sho) and p. 375 (¼-page ad; company name: Yamaizumi Miso, Koji Seizô-sho). Also in 1937, p. 320. Also in 1938, p. 348. Also in 1939, p. 339.

The Japanese American Directory. 1940. p. 326-27. Listed in the category “Foodstuff Factory.” Yamaizumi Miso Seizô-sho (Yamaizumi Miso Koji Mfg. Co.), 1532 Fishburn Ter., Los Angeles, California. Phone: ANgelus 6336. The address has changed, but not the phone number. Also in 1941, p. 328.

Nichi-Bei Jiji Jushoroku [Japanese American Times Directory]. 1952, p. 310. Under “Food Manufacturers.” In Japanese: Yamaizumi Miso Seizô-sho. In English:

Yamaizumi Miso & Koji Mfg. Co., 1532 Fishburn Ave., Los Angeles. Phone: AN. 5035.

Shurtleff & Aoyagi. 1983. The Book of Miso. 2nd ed. p. 234. (Based on an interview with Noritoshi Kanai, president of Miyako Oriental Foods). The company started in 1948 under the direction of Mr. Nagai, a craftsman from Fukuoka, Japan. During the 1960s their business declined, and in 1972 they started repacking Marufuku-brand miso imported from the American-Hawaiian Soy Company in Honolulu, and selling it in America under the Yamaizumi brand. In 1975 Miyako Oriental Foods bought the rights to the Yamaizumi brand from Mrs. Nagai and the Yamaizumi company ceased operations.

Note 6. This is the earliest record seen (April 2009) related to Miyako Oriental Foods.

603. Parry, Charles A. 1920. Travel sketches, LXXXIII–Bean that made Manchuria famous: A factory at Shimizu–The bean of many qualities. *Japan Advertiser (Tokyo)*. Jan. 25. p. 7. [Eng]

• **Summary:** Contents: Introduction. Sweet and nasty. “Not now.” The tea port. History of a bean. Substitutes. Big business. Japanese place names. On 26 Nov. 1919 the author traveled by train from Tokyo to the port city of Shimizu, on Suruga Bay, in Shizuoka prefecture (about 90 miles southwest of Tokyo). “Shimizu is one of the 36 treaty ports, and it was opened along with now fewer than 26 others, in 1899. The name means ‘clear water’... My chief object in coming to Shimizu is to visit the Suzuki Company’s Bean Oil Factory, for which I have obtained permission by courtesy of the Japan Tourist Bureau. This consists of several large buildings, erected three years ago, including a central office and two mills which being built in a castellated Gothic style, make a picturesque adjunct to the scenery as they rise by the calm waters of Shimizu Bay. The mills deal at present with two only of the many products of the wonderful manchurian [sic] or soy bean, called in Japanese daizu (glycerine [sic, Glycine] hispida) the crushed bean and the oil.” The two mills are capable of treating 300 tons of beans per day. The process is secret. “I am informed that factories for the extraction of this oil exist only in Japan and Manchuria; but the Suzuki Co. has a branch office in New York, and the business is rapidly extending.”

“The oil is used for frying, for lubricating, for waterproofing clothes, for medicine, as a butter substitute, and in the manufacture of soap, candles, guncotton, and artificial rubber; though it can hardly yet be said to be on the market.” For culinary purposes it is not as good as the ordinarily used goma (sesame) oil, being much lighter and requiring the use of a deep saucepan. Yet it costs only about 62% as much as sesame oil; the latter costs ¥1.60 per sho (1.58 quarts).

“At present its chief use is for making soap, for which it is taken at a less refined stage, of a dark brown color while the finished product is light yellow. The oil is at present little used in Japan because little known; its retail sale seems to be limited to the neighborhood of the factories. Of these there are three, the two others being at Yokohama and Kobe, both established only last year.

“One large shed is devoted to storing the crushed beans (*kasu*) after the oil has been extracted, large piles of which lie about... The chief use of this at present is for cattle-food; but it is now to be manufactured into flour, useful for mixing in various proportions with wheat flour.”

“The daizu [soy] bean has long been known in Japanese cookery in the form of ‘kiriako’ [sic, kinako] (‘yellow powder’) to make which the entire bean is slightly roasted and pulverized; then used for mixing with flour to make light cakes, for giving savor to boiled rice, etc. The prices are not yet determined, the cost of manufacture not being known; but it will be cheaper than flour, as well as more nutritious, and will help to relieve the scarcity of rice.

“Substitutes: Other products of the bean are: tofu, the white bean-curd, used universally in Japan and, until recently, almost absurdly cheap; also used in the forms of age-dofu (fried in cottonseed oil), yake-dofu (baked) [yaki-dofu (grilled)], and the curious gori-dofu [kori-dofu], ‘frozen tofu,’ also called koya-dofu (from koya-san) tofu sprinkled with hot water, frozen, dried, and cut into small cakes; miso, the cheap condiment made of daizu beans fermented with yeast and barley; and soy, Japan’s only sauce. A later addition to the list has been to-nyu, or tofumuilk [sic, “bean milk], a very passable substitute for cow’s milk at half the price; and still more recently tofu-butter. The whole bean, parched and boiled, is an excellent coffee-substitute, yielding when parched just to the right degree, much of the aroma of that fascinating drink without any of its deleterious effects.”

“The present demand for bean cake in Japan is met by the three factories of the Suzuki Co. that at Shimizu supplying central Japan, Yokohama Northern and Kobe Southern.

“There are several varieties of the bean known as white, yellow green and black, the first two being the most used. The plant is as yet little grown in Korea and Japan.

“Big Business: The Shimizu factory, which is the largest of the three, employs about 300 workpeople on day and night shifts. This new bean-industry is, however, only the latest among many activities of the Suzuki Co. which ranks among the great industrial concerns of the world, the third largest in Japan, standing next to the Mitsui and the Mitsubishi, and employing a total of over 3,000 clerks and 100,000 workpeople. It deals also in rice, wheat flour, sugar, sake-brewing, coal, timber, metals, camphor, wool, cloth and manure besides numerous small lines. It has three dockyards, at Harima, Toba and another; a coal-mine in

Kyushu; copper mines at Hibi (Okayamaken) Hiroshima (Yamaguchiken) and Dairi (Fukuoka ken) also mines of zinc and iron; while its steel works (*seikojo*) at Kobe are the largest in Japan.”

“Shimizu is well situated for growth being midway between the ports of Yokohama and Yokkaichi and serving a prosperous hinterland. Its chief exports are tea and oranges and its imports coal and timber.” Address: Japan.

604. Japanese American News Inc. / Nichibei Shinbunsha. 1920. Nichibei jûshoroku [The Japanese American directory. No 16]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements. Address: San Francisco, California.

605. *Japan Advertiser*. 1920. Tokyo a city of many kinds of specialty restaurants: All sorts of food can be found at all sorts of prices if one knows where to go. No. 9,307. Aug. 22. p. 5, cols. 1-3. Sunday. [Eng]

• **Summary:** This introduction to the many types of restaurants in Tokyo mentions various soyfoods. Better class houses serve beef. The centerpiece is the “nabe”—“the iron skillet in which the food is cooked. The cooking is done by the customer, no skill being required as the secret of good ‘nabe’ is in the tenderness of the meat and in the sauce which is prepared by the house. Onions, either Bermuda or the long leek variety, tofu, konnyaku (a stringy preparation made out of a root), and sometimes cabbage leaf are the usual ingredients which are put in the nabe along with the thin slices of meat. Sake can be had if ordered. A reasonable meal at a beef house now costs about ¥1.50, although the nabe alone is probably listed at only 60 or 70 sen.

“Another name by which this dish is usually known outside of Tokyo, is *sukiyaki*. This is derived from *suki*, which means a spade, and *yaki*, to cook. The reason for this unusual derivation is that when meat we first introduced into Japan as food for humans, there was a very great prejudice against it. Those who wished to indulge in this ‘unclean’ food were forced to go into the mountains, far from any habitation and conveniences, and they made use of the farmer’s broad spade on which to cook the meat. Another reason, aside from the fact that Buddhism preached abstinence from the flesh of animals, that the Japanese did not look with favor upon meat as a food was the flesh has always been eaten by the Eta, or the outcast class of the country.” Note: This is the earliest document seen (Sept. 2002) that contains the word “*sukiyaki*.”

"In contradistinction to meat, eels have always been looked upon as a delicacy. Eel restaurants are numerous in Tokyo, but they are not cheap... The customer is served in private rooms at these eel houses... Eels are considered very nutritious and are eaten by all classes. It is a favorite dish with coolies when they have the price... The first 'ox' day of the summer doyo, or period of greatest heat, is set aside as a special day to eat eels.

"There is not much choice in the way in which eels are prepared. Kaba-yaki is the name of one style. The bones are all removed, the eel is laid out flat and broiled over a charcoal fire with a special shoyu sauce and served on a big flat plate. Rice is also served..." One serving typically costs 1-3 yen.

"A very cheap kind of food, yet one whose 'social standing' is as good as any, is soba or udon... Cold soba is known as mori, and is eaten by being dipped into shoyu sauce and is flavored with sea-weed." "Tempura soba is served in a bowl with a piece of tempura placed on top. This is a very nutritious dish. Soba is served is served in the same way with onions or a piece of abura-age or fried tofu and is known as okame soba."

"A typical Japanese restaurant where a table d'hote is served is known as a kaiseki restaurant." One popular dish is "onuko, or fish mixed with miso and flavored with vinegar."

In Tokyo, pork "is eaten more than any other kind of meat, but as it is the cheapest it is found only in the poorest restaurants." Surprisingly large quantities of horse-meat are consumed at cheap restaurants. Tempura, which is very popular, "means a certain way of cooking—namely, dipping in this wheat-flour batter and frying in deep oil, usually goma-abura, or sesame oil, although almost any vegetable oil can be used." Also discusses sushi. Rice comes at the end of the meal. Sake is not supposed to be drunk after rice is consumed, as it produces indigestion. Address: Tokyo.

606. Rindl, M. 1920. Vegetable fats and oils. IV-V. Semi-drying oils. Soy bean. *South African J. of Industry* 3(6):518-31. June; 3(8):742-49. Aug. [29 ref]

• **Summary:** These are 2 installments of a series of articles on vegetable fats and oils, forming a Report to the Advisory Board of Industry and Science on Vegetable Oils, Fats, and Waxes. Soybeans are considered among the semi-drying oils. Contents of Part I: Introduction. Early [soybean] experiments in South Africa. Botanical characters. Varieties. Germination. Inoculation. Technique of inoculation. Soy beans as a rotation crop for maize. Comparison of soy beans and cowpeas. Storage of seed. The soy bean as human food. Vitamines. Soy-bean [food] preparations: Soy-bean milk, soy-bean curd [tofu], the soy bean as a vegetable (baked, boiled, roasted, green beans [green vegetable soybeans], soy-bean pulp (kara)). Soy-bean meal [soy flour and its uses]. Fermented soy-bean products: Fermented boiled

beans (natto), ripened vegetable cheese (miso), the Chinese paste chiang, soy-bean sauce (shoyu).

Contents of Part II: Oil content of seed produced in South Africa. Quality of oil from South African beans. Extraction of oils. Nature and composition of soy-bean oil, and methods of treatment. Uses of the oil. Soy beans as forage. Enemies of the soy bean. Method of shipment from the East.

"The first systematic trials [with soy beans] were initiated about 1903 at Skinner's Court, on the Springbok Flats, and at the Natal Experiment Farms, Cedara, Weenen, and Winkle Spruit. These latter were continued until the season 1910-1911 when the field trials referred to above [by the Transvaal and Natal Departments of Agriculture] were carried out by the Department of Agriculture in conjunction with Messrs. Lever Bros. and a large number of farmers" (p. 519).

The best yields during the 1910-11 season at the three Natal Experiment Farms were: At Cedara: Haberlandt 2,000 lb/acre. Winkle Spruit: Mammoth Yellow 1,191 lb/acre. Weenen: Mammoth Yellow 1,400 lb/acre.

"Method of shipment from the East. The beans are shipped in bags, vessels are well dunnaged, and a large number of wooden pipe ventilators are placed in the ships' holds to keep the cargo from getting heated. The beans, on a long voyage from Eastern Asia to Europe, being liable to sweat, are sometimes dried before shipment."

Tables show experimental yields and chemical compositions of soy beans from different countries and soy-related products. A diagram (outline-form) shows the various ways in which plants and seeds of soy beans are utilized. Note: This is the earliest English-language document seen (Feb. 24) that uses the term "soy-bean curd" to refer to tofu. Address: Ing. D., Prof. of Chemistry, Grey University College, Bloemfontein [Orange Free State, South Africa].

607. **Product Name:** Miso.

Manufacturer's Name: Kanda (T.) Miso Manufacturer. Name changed in 1924 to Kanda Soy & Miso Factory (Kanda Seizo-sho).

Manufacturer's Address: Pacific Rd., corner of Iwilei Rd., Honolulu, Oahu, Hawaii.

Date of Introduction: 1920.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1920. p. 448. "Kanda, T. Miso manufacturer. Pacific Rd., corner of Iwilei Rd. Residence, same. In 1923 Directory, address changes to Quinn Lane. In 1924 Directory, listing changes to Kanda Soy & Miso Factory, 62 Quinn Lane. 1928-29 Directory. Kanda Shokwai [Shokai]. T. Kanda, president. R. Watanabe, v.p. K. Kanda, manager. Soy and Miso Manufacturers. Koula corner Halekauwila. Phone: 5135. P.O. Box 934.

Nihei. 1978. *Nippon Jozo Kyokai Zasshi*. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." Says: "Kanda Seizo-sho, founded by Takejiro Kanda in the 1920s. On Cooke St., Honolulu." Wm. Higa. 1980. *History of Miso Companies in Hawaii*; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. This was the second miso company in Hawaii and the United States, started in 1920 by Mr. Takejiro Kanda. No longer in business.

608. Noorden, Carl von; Salomon, Hugo. 1920. *Handbuch der Ernährungslehre. Erster Band. Allgemeine Diätetik* [Handbook of nutritional education. Vol. I. General dietetics]. Berlin: Verlag von Julius Springer. xxxiii+ 1237 p. [100+* ref. Ger]

• **Summary:** The section titled "Vegetable Milk and Cream" (p. 311-14) notes that the authors have had extended experience with soybean milk and soy flour made by Frankfurter Soyama-Werken in various forms. For each product the percentage protein, fat, carbohydrates, ash, and calories per 100 gm is given, based on analyses of Dr. G. Popp in Frankfurt: Soyama Flour (*Soyamamehl*; 42% protein, 18% fat), Soyama Milk (*Trink-Soyamamilch* [normal], 3.77%, 3.36%), Soyama Milk for Diabetics [low in carbohydrates] (*Trink-Soyamamilch [fuer Diabetiker]*, 3.77%, 3.40%), Soyama Milk for Baking (3.29%, 4.40%), Soyama Cream (Soyamarahm [normal], 2.93%, 11.50%), Soyama Cream for Diabetic (*Soyamarahm [fuer Diabetiker]*, 2.95%, 11.50%), Soyama Cream [extra rich in fat, especially for diabetics] (*Soyamarahm*, 2.50%, 30.0%). The soybean is of special importance in diabetic diets because of its low carbohydrate content, which can be reduced even more by a special process.

When Soyama Cream is mixed with coffee, tea, or chocolate, one can scarcely tell whether or not one is using cow's milk. Pages 312-13 summarize the findings of Fischer on the ease with which plant- or vegetable milks are digested.

The section on variety breads (p. 427) notes that soybean flour is now warmly recommended in such recipes.

A section titled "Soybeans" (p. 542-43) notes that edible soy products are made by Aguma-Werken F. Thoerl in Harburg, Vaterland brand soy flour is made by E. Friedrichsen in Berlin, and an excellent soy flour is made by Soyama-Werken in Frankfurt am Main. In Japan and China countless preparations made from soybeans are on the market. Especially prized is the cheese named tofu (To-fu). Soy sauce is also known worldwide. Soy coffee (p. 694) is of much less economic importance than imitation coffees made from cereal grains or malt. Page 714 mentions tests using soybean flour to make cocoa or chocolate. Page 800 discusses soya seasonings such as shoyu fermented with koji, and miso.

Pages 887-903 discuss vegetarian cures for diseases, and ten specific diseases for which they are well suited. Some

groups of German vegetarians are endeavoring to return to a more "natural way of life," and some of these eat a raw-food diet. Pages 898-99 give the protein content and calories per 100 gm of soy flour and soymilk, plus a discussion of soymilk. Page 979 gives the composition of two brands of soymilk and one of soy cream. Also contains early information on using baking soda for cooking whole soybeans. Noorden lived 1858-1944. Address: 1. Geheimer Medizinalrat und Prof., Frankfurt-am-Main, Germany; 2. Prof., Vienna, Austria.

609. U.S. Tariff Commission. 1920. *Summary of tariff information, 1920*; prepared for the use of the Committee on Ways and Means, House of Representatives. Washington, DC: Government Printing Office. 1004 p. See p. 320-22, 779-80, 990. [7 ref]

• **Summary:** Contains a description of the soybean, its uses, production, and quantities imported, and the tariff regulations applicable to the various soy products.

Paragraph 200, page 321: "The provision in this paragraph for 'bean stick or bean cake, miso, and similar products,' covers a Japanese food product made from ground soja (soya) beans and water, known as frozen tofu or koya-dofu, and fried tofu or hoshi aburage, the frozen tofu or koya-dofu being in the shape of small, porous, yellow cakes about one-half inch thick, from 1½ to 2 inches square, and the fried tofu or hoshi aburage being in thin cakes one-quarter inch thick and 2½ to 5 inches in diameter, which have been fried in some kind of oil or grease. Even if not bean cake it is dutiable as a product similar to bean cake, bean stick, and miso. (G.A. 8045, T.D. 37079, of 1917, following Abstract 29577, T.D. 32780, of 1912.) 'Amasake,' made from rice yeast (30 per cent) and boiled rice (70 per cent), used as a drink among the Japanese, was likewise classified as a 'similar product,' apparently as similar to miso. (Abstract 31147, of 1913).

Oil cake produced from the soya bean is free of duty as oil cake provided for in paragraph 560. (Abstract 23794, T.D. 30828, of 1910)."

Paragraph 201, p. 321-22: In the Act of 1909, sauces of all kinds were subject to a 40% ad valorem duty; this decreased to 25% in the Act of 1913. Thick sauces include dressings and condiments such as chutney. "Thin *Chinese soy* made by mixing cooked soy beans with wheat flour, salt, and water and exposing to the sun for about three months, used to flavor and color soups, fish, and meats, about 80 per cent being used in the kitchen and about 20 per cent on the table, is dutiable as a sauce hereunder and not as a nonenumerated manufactured article under paragraph 385. (9 Ct. Cust. Appls., -; T.D. 37976, of 1919.) *Japanese shoyu* is also classified as a sauce under this paragraph. (T.D. 37574, of 1916; Abstract 43496, of 1919)."

Paragraph 606, p. 779-80. A duty is first levied on soya beans in the Act of 1913.

“Description and uses.—*Soya beans* used in oil mills, the important consumers, are chiefly imported. Soya-bean cake, or meal, a by-product of oil manufacture, is a valuable cattle feed and enters extensively into international trade. (See pars. 560 and 561.) In China and Japan the beans, cake, and oil are elaborated into a large number of food products, such as milk, cheese, flour, bean cake, and soya sauce... Except by resident Asiatics there is only a limited use of soya beans for food purposes.

“Production.—Soya-bean culture has recently developed rapidly... Imports of *soya beans*, too small to be listed separately prior to 1914, rose from about 2,000,000 pounds in 1914 to about 32,000,000 pounds in 1918; during the same period imports of soya bean *oil* rose from 16,000,000 to nearly 337,000,000 pounds.

“*Soya beans cooked and salted*, but not enough to so change them as to prevent their identification as soya beans, and packed in tins, jars, bottles, or similar packages, do not thereby lose their status as soya beans and are free of duty under this paragraph rather than dutiable under paragraph 199. (6 Ct. Cust. Appls., 415, of 1915.) *Soya beans* in stone jars and hermetically sealed tins, invoiced as *bean sauce*, were likewise classified, and not dutiable as prepared beans under paragraph 199, nor as sauce under paragraph 201. (G.A. 8217, T.D. 37860, of 1918.) *Beans* and *bean sauce* prepared or preserved in tins, jars, bottles, or similar packages, were also held free of duty under this paragraph, analysis of the samples showing them to be soya beans, either natural or prepared. (Abstract 41021, of 1917.)... A *black bean* known to the Japanese as *Kuromame*, was held not to be free of duty under this paragraph, the evidence being insufficient to prove that the merchandise was soya beans. (Abstract 42852 of 1919).” Address: Washington, DC.

610. Thom, C. 1920? Utilization of molds in certain foods. 9 p. Undated. Unpublished typescript.

• **Summary:** “Here is some soy sauce in a bottle—this was made between January and October 1920 in Washington, DC, by the Department of Agriculture.” Describes how soy sauce is made and its microbiology. Also discusses miso (red and white), grey-white or red Chinese cheeses based on soybean curd (made by ripening with a mold and then brining; in Foo-chow is made a red vegetable dye—made from ang-quac or red rice made with the red mold *Monascus purpureus*), katsuobushi. Address: USDA Bureau of Chemistry, Washington, DC.

611. Japanese American News Inc. / Nichibei Shinbunsha. 1921. Nichibei jûshoroku [The Japanese American directory. No 17]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements. Address: San Francisco, California.

612. **Product Name:** Miso.

Manufacturer’s Name: Kagidai Miso Seizo-sho.

Manufacturer’s Address: 1534 Post St., San Francisco, California. Phone: West 3286.

Date of Introduction: 1921. January.

New Product–Documentation: The Japanese American Directory. 1921. p. 64. Note: In 1920 Nagatomi Miso Seizô-sho was at this same address and phone number.

613. **Product Name:** Miso.

Manufacturer’s Name: Nihonichi Miso Seizo-sho (Nihonichi Miso Mfg. Co.). Renamed Nihon Miso Seizo-sho in 1924.

Manufacturer’s Address: 439 Turner Ave., Los Angeles, California. Phone: 16836.

Date of Introduction: 1921. January.

New Product–Documentation: The Japanese American Directory. 1921. p. 314. Note: Nihon-ichi means “Japan No. 1.” Also in 1922, p. 315. Also in 1923, p. 355. Also in 1924, p. 394 (directory; the company has a new name: Nihon Miso Seizô-sho. New phone number: 827260) and p. 394 (¼-page ad, shows new company name and number. Owner: Mr. KANAMINE (?) Katsumaro. Wholesaler and retailer of miso, shoyu, and koji).

Also in 1925, p. S-44 (directory; new phone number: VAndike 7260. Address: 439 Turner St.) and p. S-44 (ad, ¼ page bottom right). Also in 1926, p. S-33 (directory) and p. S-73 (¼-page ad; the company now makes miso, koji, and natto. Sells wholesale and retail).

614. **Product Name:** Koji, Miso.

Manufacturer’s Name: Shiro Koji, Miso Seizo-sho.

Renamed Arada Miso oyobi Koji Seizo-sho in 1923.

Manufacturer’s Address: 922 G St., Fresno, California. Phone: 2797R.

Date of Introduction: 1921. January.

New Product–Documentation: The Japanese American Directory. 1921. p. 231. Also in 1921, p. 234. Ad (1/8 page). In addition to the basic information given above, states that the owner is Mr. Arada. Also in 1922, p. 226 (directory) and p. 228 (Ad). Also in 1923 directory, p. 262. The company now has a new name: Arada Miso Oyobi Koji Seizô-sho (Arada Miso and Koji Manufacturing Co.).

Also in 1924, p. 277 (ad; The company name is now Shiro-miso, Koji Seizô-sho, at 923 G. St. Owner: Mr. Arada. Phone: 2707R). and p. 281 (directory; the company name here is the same as it was in 1923!). Also in 1925, p. N-261

(directory and 1/8 page ad). Also in 1926, p. N-256 (directory; new phone number 2797R) and p. N-256 (1/8-page ad; Shiro-miso, Koji Seizô-sho. Phone: 2797R).

The Japanese American Directory. 1930. p. 264. Arada Miso Koji Seizô-sho, at 923 G St., Fresno, California. Phone: 2-4388. Also in 1932, p. 257 (directory; new phone number: 2-4388). Also in 1934, p. 239. Also in 1936, p. 286 (directory).

615. **Product Name:** Miso.

Manufacturer's Name: Watanabe Miso Seizo-sho [Watanabe Miso Manufacturing Co.]. Renamed Sacramento Miso Seizo-sho in 1922.

Manufacturer's Address: 427½ North St., Sacramento, California. Phone: Main 2933J.

Date of Introduction: 1921. January.

New Product–Documentation: The Japanese American Directory. 1921. p. 163. In 1920 the company's name was Watanabe Koji Seizô-sho [Watanabe Koji Manufacturing Co.]; same address and phone no. Also in 1922, p. 149. But the company has been renamed Sacramento Miso Seizô-sho. Same address and phone. Also in 1923, p. 173. Also in 1924, p. 193. Also in 1925, p. N-164. Also in 1926, p. N-162.

616. Adkins, Dorothy Margaret. 1921. The soya-bean problem. *Science Progress (London)* 15(59):445-51. Jan. [9 ref]

• **Summary:** This is a popular article. Contents: Introduction. Practical applications of the bean: Food uses include Tofu, or bean cheese (Japanese), Miso similar to chiang (Chinese), Shoyu (Japanese) and chiang-yu (Chinese), Natto (Japanese), whole dry soybeans, soybeans canned as a green vegetable (see description below), vegetable milk, roasted soybeans as a coffee substitute, soya flour, soya in diabetic diets and macaroni. Utilisation of soya-bean oil: In Italy, China, Manchuria. Utilisation of soya-bean cake and meal: As fertilizer in China and Japan, for feeding stock. Food value of the bean. The cultivation of the soya bean: China, Japan, United States, Australia (New South Wales), South Africa, West Indies, British East Africa, West Africa, Burmah [Burma], England.

“In Japan beans are germinated until the sprouts are about five inches long, and eaten with vinegar; beans, germinated and treated with brine, have also been noted in Spain.” Note: It is not stated clearly that these beans in Japan or Spain are soya beans.

“Soya-beans may be cooked and used in the same way as haricot-beans, and may also be picked when young and treated like green peas, in which condition they may be canned.”

“In South Africa success has been achieved in growing the plant; in 1910 the outlook was so hopeful that a project for constructing oil mills was suggested. Unfortunately the

bean was not taken up by farmers, who preferred to cultivated maize, as it was an easier crop to produce. Thus no extensive culture of the bean was attempted, and the subject was dropped.

“In other parts of the Empire, for example the West Indies, British East Africa and West Africa, trials of soya-beans have proved successful, but in no district have promising early experiments been followed by tests on a larger scale.”

“In certain parts of India, for example Burmah, soya-beans are grown on a large scale and are consumed by the natives.” Address: Royal Holloway College, London.

617. Oshima, Kokichi. 1921. Re: Description of Japanese foods pickled in miso or shoyu, imported to New York. Letter, probably to Margaret B. Church at USDA Bureau of Chemistry, Washington, DC, Feb. 12. 2 p. Handwritten. [Eng]

• **Summary:** Mentions daikon misozuke (white radish), taimiso (sea bream), youkizuke (Miscellaneous vegetables in shoyu).

Note: According to Dr. Charles Thom's personal papers from about 1922-23, Kokichi Oshima spent 7-8 months at the Microbiological Laboratory of the USDA Bureau of Chemistry doing research related to food fermentation, such as quantitative determination of industrial mold enzymes. Oshima was a graduate of Hokkaido Imperial University (Sapporo, Japan). In Dec. 1922 and Feb. 1923 Oshima was back in Sapporo. Address: Apt. 42, 604 W. 139th St., New York City, NY.

618. *Light of Manchuria*. 1921. Present Manchuria and Mongolia, Series II. Oct. 1. p. 12-14, 30-31, 46-47.

• **Summary:** This article, continued from the September number, notes that one of the principal agricultural products of Manchuria and Mongolia [probably Inner Mongolia] are soya beans. “Yellow (Soya) Beans belong to the most common species. They contain a good percentage of oil and are also good as an article of food and also for the expression of oil. The Manchurian (Soya) Beans have become widely known all over the world. Hitherto they used to be used by Manchurian inhabitants as a food-stuff and for the expression of oil as a source of light. The residue left after oil was obtained served as cattle feed. Since the residue popularly known as Bean Cake came to awake demand in Japan as fertilizer, and Bean Oil began to be exported to the Western countries as industrial material, a marvellous development has been noted in the cultivation of Soya Bean. This belongs to only a recent date...”

“The Chinese not only use Beans and Bean Oil in their daily cooking, but also *tofu* (bean curd palatable also to the Western palate and pronounced by the qualified chemist as similar in its composition to cow's milk), *miso* (an article of

the staple food to both Japanese and Chinese), and soy are also made from Beans...

“Beans put out in Manchuria and Mongolia are put at about 20,000,000 *koku* (1 *koku* being equivalent to 4.96 bushels), but the outputs are increasing rapidly year by year, and there is a vast area of territory awaiting cultivation.”

Page 30, under “Manufacturing Industry,” notes that “Bean milling ranks foremost in manufacturing industry... Bean milling is best developed at Dairen, which is now possessed of sixty mills. In the interior of the country, the old primitive system by which a few head of mules or donkeys and a few hands do the work of expressing oil from Beans is still found in vogue. Such is only a domestic by-industry. However, such extensive mills as use steam engines and express oil by hydraulic pressure are mostly found at Dairen. The Suzuki Bean Mill at Dairen is operated on the chemical extraction system which is the latest scientific method. The round-shaped cake left after the expression of oil weighs 46 *kin* a piece, which is the standard weight for export cake. In the fiscal year 1919, 19,693,000 piculs valued at 43,029,000 *Hk. taels* [Haikwan taels] were exported to Japan. Bean Meal, which is put out at the Suzuki Mill, is good for use as it is. Bean Cake is used by the Chinese for cattle-feed, and by the Japanese as fertilizer.”

On pages 46-47 are tables giving exports and imports at Dairen. The three exports with the greatest value (in Haikwan Taels) were Bean Cake (36,851,244), Beans (Soya) (24,750,377), and Bean Oil (17,369,655). Imports included Miso and soy [sauce] (97,305).

619. North, J.L. 1921. To solve the cost-of-living problem? A magic bean. *Illustrated London News (The)*. Oct. 8. p. 476-77. [1 ref]

• **Summary:** “The leading article and letter in the *Times* of Sept. 28 from its Vienna correspondent about Manna flour, manna bread, and milk substances made from the Soya bean, are likely to do good if they help us to realise how much we are losing by our neglect of this, the most valuable—for the uses to which it can be put—of all legumes.

“In the letter giving the details of the researches of Dr. László Berczeller of Vienna, there is no reference to the fact that these ‘Manna’ or Soya bean products were first made in England before the war. Samples of the flour and biscuits are to be seen in the cases of the London Institute of Hygiene, and Manna milk has been for years—and, no doubt, still is—sold here under the name of ‘Solac’ at a price considerably lower than that charged for milk by dairymen. The appearance and rapid rise into importance of the Soya bean is one of the most remarkable commercial events of modern times.”

“In 1790 the [soy] bean was brought to Europe when its cultivation was first attempted by Young [Arthur Young, lived 1741-1820 in England], the father of British

Agriculture, though without success. In 1878 an Austrian professor, Haberlandt, tried it, but failed [Note 1. Haberlandt did not fail; he successfully cultivated soybeans in Austria as early as 1875, and many times thereafter.] When the bean came here in 1908 there was an immediate rush to grow it both in Europe and America. Experiments were started by our Board of Agriculture, the Royal Agricultural Society, and many semi-public bodies. The early experiments failed completely, for the reason that they were made with seed whose climatic origin was unknown, as well as the orthodox Chinese methods of growing it. Later, this was remedied...”

By 1918 Europeans were aware of 500 different soybean varieties that were growing experimentally at Arlington, Virginia.

“My interest in the Soya bean began in 1913 with a visit from an agent of a German cultivator at the office of the Royal Botanical Society at Regent’s Park. He was, he said, trying to form a syndicate to grow what he called an acclimatised Soya bean, brought from China in 1910, and already in cultivation in Germany. He refused seeds for testing, but sent from Hamburg a plant which had been carefully cleared of the seed, though the *empty* pods, nearly sixty in number, were left. The syndicate never materialised, and I thought no more of the matter, until later on, whilst examining the dried plant, I noticed a tiny pod, scarcely half an inch long, which contained a seed no bigger than a pin’s head. Going over the plant I found other pods which evidently had been thought too insignificant to be of use, and from these I obtained thirteen seeds. These were sown in 1914 and resulted in thirteen plants, which produced four hundred and forty seeds. From thirty-three plants in 1915 one thousand seeds resulted, and in 1916 no less than twelve thousand. Many experiments as to the value of different methods of growing them were made in several countries, and with no less than twenty-one different foreign varieties. One thing came clear throughout the tests, and that was that the original variety started with was by far the best. It says a good deal for German astuteness that they should have gone to Manchuria and, from hundreds of varieties, chosen the one best for them and for us.”

The future of the Soya bean in England is uncertain. “Natural selection helps the plants that mature earliest produce most seed; those that mature late die out. It is noticeable that the plants experimented with in England fruit earlier now than they did at first, and this is a very hopeful sign. Another satisfactory fact is that there is no lessening in the number of pods produced, but rather a gain. This year there are plants with three times the number of pods shown in a photograph of the best German-grown specimen of 1912.”

In China and Japan the Soya bean “enters into the composition of most dishes, and in one form or another, as Soy sauce, bean paste, bean cheese, bean curd, bean milk,

bean wafers, bean cakes and confectionery, is used everywhere. For a hundred years Soy sauce has been imported—the principal ingredient in the well-known Worcester [Worcestershire] sauce.”

Apart from its value as a food, it is used in the manufacture of glycerine, explosives, enamels, varnish, varnish, waterproofs, linoleum, paints, soaps, celluloid, printing inks, and as a lubricant.”

Photos (all but #1 by Frank N. Meyer of the USDA) show: (1) A typical pod from a soya bean plant grown by Mr. J.L. North at Chiswick in 1921. (2) Blocks of tofu (also called soya bean cheese, bean curd, or soya bean curd) ready to be cut up into squares for sale. (3) Varieties of soya bean cheese on a bamboo tray. (4) A pile of wooden trays full of bean curd in a dark room. (5) A basketful of sprouted soya beans. (6) Soy bean plant with leaves, many pods and roots.

Note 2. This is the earliest document seen (March 2002) written by Mr. J.L. North, the pioneer in cultivating soybeans in England.

Note 3. This is the earliest English-language document seen (Feb. 2004) that uses the term “soya bean cheese” or “soya bean curd” to refer to tofu.

Note 4. This is the earliest English-language document seen (July 2007) that uses the term “magic bean” or that uses the word “magic” as an adjective to refer to the soybean.

Note 5. Concerning Arthur Young. He was the author of many books on agriculture, which were very influential in their day. He was an important advocate for the progressive agricultural practices of his time, advocating such innovations as the seed drill, improved crop rotations, the use of marl as fertilizer, and the enclosure of open fields. In 1767 he undertook the management of a farm in Essex. He conducted various experiments and published the results in *A Course of Experimental Agriculture* (1770). In 1784 he began the publication of the *Annals of Agriculture*, a periodical which was continued for 45 volumes and had many contributors. Young traveled to France during 1787-89 and in 1792 published an important book about his travels and observations there. The soybean was first grown in Paris, France, perhaps as early as 1740, definitely by 1779. So he may have learned about soybean from fellow agriculturalists in Paris while on this trip. Address: Curator of the Royal Botanic Society of London.

620. Satow, Sadakichi. 1921. Researches on oil and proteids extraction from soy-bean. *Tohoku Imperial University, Technology Reports (Sendai, Japan)* 2(2):1-124 (41-164). Oct. 28 cm. [Eng]

• **Summary:** Contents: 1. General description of the soy-bean: The use of the soy-bean (as a food-stuff [shoyu, miso, tofu, natto], soy bean oil [for the manufacture of soap, hydrogenated oils, paints, varnishes, oil-cloth, and rubber

substitutes], and bean cake or waste residue from the manufacture of soy-bean oil [nitrogenous fertilizer, as a cattle food, Solite—a water-based paint]). 2. Classification and analysis of soy beans and their standardization: By color, by protein / proteid content, conclusion of analysis (the best soy-beans are Tsurunoko and Kauro grown in Hokkaido): Standardization of the raw material, content of proteids, color of the raw material, moisture, regularity of the grain, specific gravity of the soy-bean, impurities. 3. Microscopical observations of soy-beans: Colour reactions of cellular substances, distribution of proteids and fatty acids, distribution of fatty oils. 4. Oil extraction (p. 17): Influence of hulls, influence of moisture, influence of oxidation, comparison of the dissolving power of various solvents, to find the best conditions for the extraction of oil by means of benzine, how to extract the oil technically without denaturing the proteids and how to remove the retained solvent, on the apparatus employed in oil extraction, working of the extracting apparatus, recovery of solvent by application of the vacuum system, separation of oil from the solvent and oil refining, reserving the oil-freed soy-bean meal.

5. Isolation of proteids out of oil-freed soy-bean (p. 35): General discussion, necessary and sufficient conditions for the extraction of proteids (on the quality of isolated proteids [plasticity, solubility, coloration], on the purity of isolated proteids, to obtain a maximum yield). 6. The extraction of proteids by means of water (p. 41): General properties of bean meal, on gummy substances and their properties (saccharo-colloids, incl. stachiose [stachyose], araban, galactan; p. 43), quantitative estimation of water-soluble proteids and carbohydrates, determination of the volume of water necessary for the extraction of soluble carbohydrates, relation of the duration of extraction to the quantity of extractable proteid and carbohydrates, effect of the process of water-extraction. 7. On the extraction of proteids by means of alkaline reagents: General properties of glycinin against alkaline reagents, classification of alkaline reagents, comparisons of dissolving power of alkaline reacting compounds, relations of the plasticity and coloration of the proteid to various kinds of extracting agents, standardization of plasticity of isolated proteid, on the relations between plasticity and chemical reagents, comparative experiments relating to the extracting process by means of sodium sulfite and sodium hydroxide.

8. The determination of the concentration, quantity, and other factors of Na₂SO₃ [sodium sulfite] in the process of extraction (p. 69): Determination of the concentration of sodium sulfite, the determination of the relation between the plasticity of the protein and the concentration of sodium sulphite, to determine the relation between the yield and the time of extraction, to find out the actual yield of proteid, as well as the volume of sodium sulfite solution provided the bean meal is previously extracted by water, then extracted

with sodium sulphite, conclusion of this chapter. 9. Extraction of proteids by means of caustic alkalies (p. 80): To determine the concentration of the caustic soda [sodium hydroxide] solution, determination of the relation between the time of extraction and the yield of proteid, to determine the volume of caustic soda, the systematic extraction of proteids (using water, sodium sulphite, or alkali). 10. Clarification of extracted proteid solution and precipitation thereof (p. 86): Precipitation of proteids, precipitation by means of alkaline earth metals (such as magnesium sulphate), by means of colour base (such as malachite green, methyl violet, brilliant green, auramine, or new fuchin), by means of alcohol, by means of heating, by means of formaldehydes, by means of fermentation, by means of acids (choice of acid, yield of precipitated proteid, quality of proteid). 11. Quantitative investigations on the precipitation of proteids (p. 101, 11 experiments with summary of conclusions). 12. Effect of heating on the yield of proteid (p. 115). 13. Separation of excess water from the proteidal precipitate (p. 118). 13A. Process for drying the proteidal mass and for drying the residue (p. 121). 14. Pulverizing the dried proteid (p. 122). 15. Recovery of carbohydrates from waste liquid (p. 123).

World soybean production (in short tons): Manchuria 1,850,000 (25% is used in Manchuria as food; 75% is exported to all parts of the world in the form of "bean cakes or bean meal"). Japan 450,000. Korea 322,500. Kantoshu 15,400. Total of the above: 2,640,000 tons valued at more than 200 million Japanese yen (p. 2).

The author investigated the use of soy-bean proteins in plastics. There are upwards of 30 varieties of soybeans which may be classified into yellow, blue, and black. The first contain the most protein and oil, the last the least. The protein content varies from 35-40.5% and the oil content from 15.4 to 20.9%. The mean analysis of 16 different varieties was: Water 10.2%, proteins 37.8%, oil 18.9%, carbohydrates 23.5%, fiber 5.2%, and ash 4.4%. The carbohydrates consist mainly of non-reducing sugars with little or no starch. The cell membrane consists of galactan or hemicellulose, with a little free cellulose. The presence of the hulls in the crushed bean reduces the speed of extraction of the oil and the yield, and gives the oil and protein a brown color. Note: This is the earliest document seen containing the word "hemicellulose." *Webster's Dictionary* defines hemicellulose, a word first used in 1891, as "any of various plant polysaccharides less complex than cellulose and easily hydrolyzable to simple sugars and other products." The sugar molecules in this polymer each contain 5 carbon atoms.

Oil extraction: Benzene is the most suitable commercial solvent; the solvent must not be recovered by direct steaming of the meal, but by the use of a vacuum.

Protein extraction: The soluble carbohydrates are removed from the meal by washing with very dilute acetic

acid. The protein is then extracted in 3 stages, i.e. with water, with 0.2-0.4% sodium sulphite solution, and with 0.2% sodium hydroxide solution. 20-30% of the total available protein is extracted in the first stage, a further 50% in the second, and the total yield is about 95%. The protein is finally dried at the lowest temperature and highest vacuum and in as short a time as possible. The dry protein is very tenacious and can only be ground in high-speed disintegrators; it is then suitable for the manufacture of plastic materials, lacquer, enamel, or imitation leather. The soluble carbohydrates, which amount to 10-12% of the meal treated, can be worked up into syrup or converted into alcohol or lactic acid by fermentation. The bean residue consists of fiber, galactan, and protein and can be used for cattle feed or as an ingredient of linoleum-like products. Continued. Address: Kôgakuhakushi.

621. Satow, Sadakichi. 1921. Researches on oil and proteids extraction from soy-bean: Illustrations and tables (Continued). *Tohoku Imperial University, Technology Reports (Sendai, Japan) 2(2):1-124 (41-164)*. Oct. 28 cm. [Eng]

• **Summary:** Continued: Illustrations show: (1) The cells of the soy-bean (after Winton, p. 55). (2) The effect of various chemicals on soy-bean cells (8 figures, after p. 16). (3) A rotary drum extractor used with solvent and a vacuum system (p. 68). (4) An endless pelt system for drying proteid precipitate.

Tables show: (1) Percentage of proteids and fat found in 23 samples of beans. The varieties are: Akakiji bean, Nagaaneko bean, Kintoki bean, Shônembo bean, Biruma ingen bean, Chûnembo bean, Maru uzura bean [speckled], Naga uzura bean, Kumamoto ingen bean, Azuki, Chûnaga uzura bean, Aneko bean, Shiromarufuku bean, Green pea, Dainenbô bean, Daifuku bean, Chûfuku bean, Red pea, Black soy-bean (38.61%), Yellow soy-bean from Manchuria {2 samples, 38.65% and 39.12%}, Yellow soy-bean from Korea (41.00%, and 22.826 fat—the highest fat of any bean tested), Yellow soy-bean from Hokkaido, Japan (41.92%—the highest proteid of any bean tested) (p. 6-7). (2) Previous analyses of the chemical composition of 16 soybean samples from Manchuria, Korea, and Japan. For each, gives the district, variety (mostly yellow but one "Blue variety"), water, proteids, fat, carbohydrate, fiber, ash, name of analyst (an organization) (p. 8). (3) Analyses by Sato of the chemical composition of 14 soybean varieties from Manchuria, Korea, and Hokkaido (Japan). For each, gives the varietal name, growing region, "moisture, total protein, soluble proteose, available protein, non-proteid nitrogenous matter, fat, nitrogen-free extract, fiber, ash, color and shape (all yellow), producing organization (Korean Central Experimental Station or Sapporo), date of production. Named varieties include: Harupin, Shoshu bean, Utsuzan bean, Ampen bean, Chogei bean, Ryusan bean,

Turunoko [Tsurunoko], Kanro, Yoshioka, Otanizi [Otaniji] (41.92% total protein and 37.53% available protein, both the highest of any bean tested) (p. 11). (4) Effect of hulls on solvent extraction of soy-bean oil with 3 varieties: Kanro, Otaniji, Yoshioka (p. 18). (5) Influence of moisture on solvent extraction (ether) of soy-beans (p. 19). (6) Effect of using benzene in place of ether in solvent extraction of soy-bean oil. The best moisture content is 7.5% to 12.5% (p. 20). (7) Substitution of vacuum drying for open air drying in removing moisture. Shows that the smaller the quantity of moisture contained in the bean, the greater the yield of oil, provided that the oil is protected from oxidation (p. 22). (8) Effect of different solvents on oil extraction: Carbon bisulphide (flammable and expensive), ether (flammable and expensive), benzene (boiling point 75°C), carbon tetrachloride [tetrachloride]. (9) Separation / distillation of benzene from oil solution (p. 34).

(10) Chemical composition of “soy bean meal” from which the hull and oil have been removed (p. 42). (11) Composition of carbohydrates or saccharo-colloids, based on S. Yukawa (p. 43). (12) Composition of para-galactaraban / gummy substances in 9 varieties (p. 44-45). (13) Percentage of water-extractable substances and reducing sugars in flattened and powdered soy-beans (p. 46-47). (14) Sugars in soy-beans (p. 48). (15) Proteids and soluble carbohydrates in soy-beans (p. 49). (16) Effect of acetic acid in retarding dissolution of the globulins (p. 50). (17-18) Dissolving power of alkaline reagents on proteids in bean meal (p. 54-56). (19) Effect of reagent on plasticity and coloration of proteids (p. 56).

(20-22) Amount of proteid extracted in 3 consecutive extractions, or with pressure (p. 63-65). (23) Effect of 4 consecutive washings in removal of ash (p. 66, 68). (24-26) Percentage of proteid extracted with sodium sulfite after 1 or 2 hours (p. 70-71). (27) Concentration of sodium sulfite, mark of plasticity [rating], and color of precipitate (p. 73). (28) Relation between time of extraction and yield of nitrogen and proteid (p. 74). (29-30). Yield of proteid with water or sodium sulfite and 5 or 6 consecutive extractions (p. 76).

(31) Test to maximize yield of proteid using sodium sulphite solvent; the weight of the solution must be 16 times that of the meal, and the yield will be 52.20 (p. 78). (32) Effect of adding acetic acid on yield (p. 79). (32-33). Effect of caustic soda (sodium hydroxide) on percentage of proteid extracted (p. 81) (34-37) Relation between time of extraction and yield of proteid using caustic soda (p. 82-83). (38) Volume of caustic soda consumed by different volumes of bean meal solution (p. 83). (39) Volume of caustic soda solution needed in three extraction processes: water, sodium sulphite, or alkali (p. 85).

(40) Extraction with magnesium sulphate for 1, 2, or 3 hours (p. 90). (41) Percentage of proteids precipitated by different precipitants; “isolated proteid,” “glutinizing

chemicals” (p. 95) (42). Effects of sulphurous acid, formaldehyde, and formalin (p. 96). (43) Effect of different precipitants on quality of precipitate; “sulphurous acid gives proteid of the whitest and best quality, and most suitable for the manufacture of plastic products” (p. 100). (44) Yields of proteid with different volumes of sulphurous acid; all yields are very unsatisfactory (p. 103). (45-47) Effect of adding sulfur dioxide to sulphurous acid at various concentrations; remarkable increase in yield (p. 104-06). (48-51) Precipitation of water extracted protein using acetic acid (p. 107-10). (52-55) Effect sulphuric acid for precipitation of proteids (p. 111-14). (56-57) Effect heating on yield of proteids (p. 116-17).

Note: Horvath (1937) states: “The extraction of protein from soybean meal, its subsequent precipitation and properties, as well as its industrial applications have been extensively studied by S. Satow, and the results published (in English) in 1921-23 in two voluminous reports [*Technology Reports, Tohoku Imperial University* (Japan): 2(2) and 3(4)]. These reports continue to serve as an unsurpassed source of information on this subject, and a number of discoveries during the last 15 years can be traced to the researches of Satow.” Horvath then summarizes many of Satow’s key findings. Address: Kôgakuhakushi.

622. Product Name: Miso.

Manufacturer’s Name: Araki (T.).

Manufacturer’s Address: 15 Ohia Lane, Hilo, Island of Hawaii.

Date of Introduction: 1921.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1921. p. 967. Araki, T., Miso Manufacturer, rear 15 Ohia Lane, Hilo, Hawaii. Note: T. Araki is listed as a baker in the 1920 Directory. Note also that in 1928-29 Sotaro Araki started making miso in Hilo, perhaps a relative.

623. Product Name: Matsu-jirushi Shiro Miso.

Manufacturer’s Name: Takei Miso Factory (Takei Miso Seizo-sho).

Manufacturer’s Address: Kahului, Maui, Hawaiian Islands.

Date of Introduction: 1921.

New Product–Documentation: Hawaiian Japanese Annual & Directory. 1936-37, p. Maui 25. Shûji Takei (from Yamaguchi prefecture), Takei Koji, Miso Seizô-gyo [Takei Koji & Miso Manufacturing Co.] Box 237, Kahului, Maui.

Nihei. 1978. *Nippon Jozo Kyokai Zasshi*. 73(7):542-49. “Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi.” Takei Miso Seizo-sho was founded in about 1921 by Shuji TAKEI. They made Matsu-jirushi Shiro Miso, but are no longer in business.

Note: In the 1909 there was apparently a shoyu maker named H. Hirao in Kahului. Wm. Higa. 1980. History of

Miso Companies in Hawaii; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. This was the third miso company in Hawaii and the United States, started in 1921 by Mr. Shuji Takei. No longer in business.

624. Kinoshita, Asakichi. 1921. *Jitsuyô miso jôzô-hô* [Practical miso fermentation]. Tokyo: Meibundo. 411 p. [30+ ref. Jap]

• **Summary:** Contains the most complete description of miso preparation published during the first quarter of the 20th century.

625. Japanese American News Inc. / Nichibeï Shinbunsha. 1922. *Nichibeï jûshoroku* [The Japanese American directory. No 18]. San Francisco, California: The Japanese American News Inc. (Nichibeï Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements. Published Jan. 1 by Nichibeï Shinbunsha. Address: San Francisco, California.

626. **Product Name:** Koji, and Miso.

Manufacturer's Name: Kanedai Koji, Miso Seizo-sho (Kanedai Koji Miso Co.).

Manufacturer's Address: 1534 Post St., San Francisco, California. Phone: West 3286.

Date of Introduction: 1922. January.

New Product–Documentation: The Japanese American Directory. 1922. p. 40. Note: In 1921 Kanedai / Kagidai Miso Seizô-sho was at this same address and phone number. Also in 1923, p. 60. Also in 1924, p. 58. Also in 1925, p. N-17. Also in 1926, p. N-22.

Ad in 1922 directory. In English: “Kane Dai Koji & Miso Co., 1534 Post. St., San Francisco, Calif.” In Japanese: The original maker of Kane Dai brand American-made koji and miso. Also makes pickles. Sells wholesale and retail.

Ad (¼ page) in 1925 directory, p. N-63. Similar to 1922 ad except “Kane-Dai” is hyphenated.”

Shin Sekai-sha. 1922. *Zaibeï Nippon-jin Kan (Directory of Japanese in the USA)*. p. 50. Gives company name and address. The display ad for this company says it was the first to make koji and miso in the USA (*Beikoku koji oyobi miso no ganso*). Note that this company was later purchased by and merged with Norio Co.

Same ad in 1923, p. 43 (top right). Same ad in 1924, p. 31 (top right). Half-page ad in The Japanese American Directory. 1926. p. 31. The largest writing is in English at the top: “Kane-dai Co., 1534 Post St., S.F., Calif. Phone

West 3286.” Most of the ad and characters are in Japanese. Maker of Kane-dai brand koji and miso.

627. Fujimoto Co. (Fujimoto Shokai). 1922. Kanemasa (Ad). In: Nichibeï Shinbun-sha. 1922. *Japanese-American Directory (Nichibeï Jushoroku)*. Page 30 near front. [Jap; eng]

• **Summary:** Ad (full-page). The top 1/5 of this ad is in English. Miso, koji, pickles manufacturing department, 1014 Stockton St.; Phone: Kearny 2339. Japanese food, groceries, direct importing and exporting department, 1640 Post St.; Phone: West 733. The prominent brand / logo is pronounced Kanemasa–Not Kadomasa, Kakumasa, Kanesho, Kadosho, or Kakusho. Note: Similar but smaller ads, and all in Japanese, appeared in 1920 and 1921.

The Japanese American Directory. 1923, p. 36. Full-page ad. Same as 1922 except the company is now making Japanese rice vinegar. Same full-page ad as in 1922, p. 29, but the main office and plant are now at 238 Jackson St.; rice vinegar is no longer mentioned. Ad also in 1924, p. 21, however a 2nd phone number is given: West 7353. Address: San Francisco, California.

628. Nishimura, Torazô; Kinoshita, A.; Inoue, T. 1922. *Miso jôzô-yô enshitsu hikaku shiken hôkoku* [Comparative test on salts used to manufacture miso]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 87. p. 579-86. March. [Jap]

Address: Jozo Shikensho. 1. Gishi; 2. Gishi; 3. Gushu.

629. **Product Name:** Miso, and Koji.

Manufacturer's Name: Arata Miso Koji Seizo-sho.

Manufacturer's Address: 825 F Street, Fresno, California. Phone: 3285-J.

Date of Introduction: 1922.

New Product–Documentation: Shin Sekai-sha. 1922. *Zaibeï Nippon-jin Kan (Directory of Japanese in the USA)*. p. 234.

630. **Product Name:** Miso, Vinegar, and Koji.

Manufacturer's Name: Miso, Su, Koji Seizo-sho.

Manufacturer's Address: Jackson Street near 7th Street, San Jose, California.

Date of Introduction: 1922.

New Product–Documentation: Shin Sekai-sha. 1922. *Zaibeï Nippon-jin Kan (Directory of Japanese in the USA)*. p. 208. This may be a side business with no real company name.

631. Niki, E. 1922. *Tsuboi hakase hakken no jiyô miso ni tsuite* [The nutritious miso discovered by Dr. Tsuboi].

Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan) 17(7):8-10. [Jap]

Address: Naigai Jozo K.K., Japan.

632. **Product Name:** [Nishii Super Shoyu, and Miso].

Foreign Name: Nishii Super Shoyu, and Miso.

Manufacturer's Name: Nishii Super Shoyu.

Manufacturer's Address: Renovacion 101-A, La Victoria, Lima 13, Peru.

Date of Introduction: 1922.

Ingredients: Water, soybeans, wheat, salt.

Wt/Vol., Packaging, Price: 750 ml bottle.

How Stored: Shelf stable.

New Product–Documentation: Nishii Shoyu, located in the Victoria district of Lima, Peru, is owned by Mr. Shinji Kawakami, age 75, the second-generation Japanese owner. The outside and inside of his shop, and the process by which he makes 5 tonnes/week of shoyu in the traditional hand-made way, are shown. He also makes miso. A close-up shows the 750 ml bottle and its colorful label, orange, blue, and green on yellow. One bottle costs the equivalent of about 300 yen.

Talk with Mr. Kawakami by phone. 1991. March 21. His uncle founded this company at this location in 1922. He is the second generation owner. He runs it as an “individual business” so there is no real company name. His address is shown above. His phone is 14-31-81-05.

Letter from Marco Kamego of Kikko Corporation S.A. in Peru. 1998. Feb. 13. The present manager of this company is Mr. Cesar Kawakami.

Note 1. This is the earliest known commercial soy product made in Peru, or in South America, or in all of Latin America.

Note 2. This is the earliest document seen concerning soybean products (shoyu and miso) in Peru. This document contains the earliest date seen for soybean products (shoyu and miso) in Peru (1922); soybeans as such had not yet been reported by that date.

633. Ri-Koheki. 1922. Chôsen shôyu miso oyobi tôfu no seihô ni tsuite [The processes for manufacturing shoyu, miso, and tofu in Korea]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 17(11):45-46. [Jap] Address: Chosen Sotokufu Iin Yakuzai-shi.

634. Togano, Meiji-ro. 1922. Shôyu miso no sokujô ni tsuite [Rapid manufacture of shoyu and miso. I-III.]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 17(3):7-9; 17(4):4-8; 17(5):14-16. [Jap] Address: Nihon Jozo Kogyo K.K., Senmu Torishimari Yaku, Nôgaku-shi, Japan.

635. **Product Name:** Miso, and Shoyu.

Manufacturer's Name: Tsuruda Miso Shoyu Seizo-sho (Tsuruda Miso & Shoyu Mfg. Co.).

Manufacturer's Address: 472 Jackson St., San Jose, California. Phone: 5539.

Date of Introduction: 1922.

New Product–Documentation: Shin Sekai-sha. 1922. *Zaibei Nippon-jin Kan (Directory of Japanese in the USA)*. p. 208.

San Jose City Directories. 1927-1936. The first listing, in 1927, says: Tsuruda Co., Nabutaro Tsuruda, mgr. Food products. 472 Josefa, San Jose. In 1929 the company name had changed to Tsuruda Bros. (Nabutaro and Tsuneo). Yasua and Yoshio were factory heads. In 1932 the occupation first changed to condiment manufacturers from food products. In 1936 the listing was: Tsuruda Bros. Mitsuo Tsuruda, mgr. Condiment mfrs, 472 Josefa.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. Started by Mr. and Mrs. Tsuruda, this company was shut down during World War II and never resumed.

636. Fritsch, Jean. 1922. *Fabrication et raffinage des huiles végétales: Manuel à l'usage des fabricants, raffineurs, courtiers et négociants en huiles. Troisième édition entièrement refondue* [Manufacture and refining of vegetable oils: A manual for the use of manufacturers, refiners, brokers, and wholesale merchants. 3rd ed., completely reset]. Paris: Desforges–Librairie Générale Scientifique et Industrielle. xiv + 723 p. Illust. Index. 25 cm. [16 ref. Fre]

• **Summary:** Chapter 2, “Drying oils (*Huiles siccatives*)” contains a section on “Soybean oil (*Huile de Soja hispida; Huile de pois*)” (p. 368-76). Its contents: Origin (Incl. miso, shoyu, tofu). Manufacture (China, Japan, above all Formosa). Physical and chemical properties. Table showing such properties, with 16 references. Applications and uses. Residues (soybean cake remaining after the oil is pressed from soybeans; *le tourteau de soja*).

Also discusses: Margarine (p. 232-33). Peanut oil (*Huile d'arachide*, p. 238-48, 699-701). Colza oil (Coleseed oil, *Huile de colza*), rapeseed oil (*Huile de navette*), and rubsen oil (*Huile de rabette*) (p. 265-72, 652). Sesame oil (*Huile de sésame*, p. 273-81, 705-06).

Note 1. The first edition of this work was published in 1905, and the second edition in 1914.

Note 2. This is the earliest document seen (March 2005) that uses the English word “coleseed” or the term “coleseed oil” to refer to rapeseed or to rapeseed oil, respectively. Address: Ingénieur-Chemiste.

637. Shin Sekai-sha. 1922. *Zaibei Nippon-jin kan* [Directory of Japanese in the USA]. San Francisco, California: Shin Sekai-sha. See p. 19, 41, 50-51, 207-08, 234, 238, 346, 357, 409. [Jap] Address: San Francisco, California.

638. U.S. Tariff Commission. 1922. Summary of tariff information, 1921, relative to the bill H.R. 7456.

Washington, DC: Government Printing Office. 1625 p. See p. 152, 786-87, 802-03.

• **Summary:** “The principal sources of information have been the commodity surveys and reports of the Tariff Commission, especially the ‘Summary of Tariff Information, 1920.’ The material in the latter has been amplified and brought up to date.”

Soybeans are more specifically dealt with in the 1920 Summary. Soybean oil, however, is considered in H.R. 7456.

The section titled “Soya-bean oil” (p. 152-53) states: “Description and uses... This oil “is a semi-drying oil used in paint either as a substitute for or mixed with linseed oil. Its greatest use is in soap making, for which it has largely replaced cottonseed oil, but the purified oil is edible. After the oil is expressed the cake becomes a feed for dairy cattle or a fertilizer.

“*Production* of soya beans has increased greatly, but only a small portion of the crop is used for oil. In 1915 approximately 100,000 bushels of American-grown beans were pressed for oil. The domestic output of oil (inedible and edible) increased from 2, 764,000 pounds in 1914 to 42,074,000 pounds in 1917 and 79,861,000 pounds in 1918. Reports of the Bureau of the Census show that no crude soya-bean oil has been produced either from domestic or imported beans in this country from 1919 to September 30, 1921, inclusive. The oil is imported in the crude state and refined in this country.

“*Imports* have increased from 16,360,452 pounds in 1914 to 336,824,646 pounds in 1918, the great bulk coming from China and Japan. Imports since 1917, almost wholly from Kwangtung, China proper, and Japan, have been as follows:”

A table shows that imports fell rapidly after 1918 (and the end of World War I) to 195.8 million lb in 1919, 112.5 million lb in 1920, and only 16.3 million lb in the first 9 months of 1921. The value per pound plunged from \$0.11 in 1918 to \$0.04 in 1921.

Exports since 1918 have been chiefly to Italy, France, and Austria. A table shows the quantities: 27.7 million lb in the last 6 months of 1919, 43.5 million lb in 1920, but only 1.93 million lb in the first 9 months of 1921.

“Important changes in classification.—Soya-bean oil was exempt from duty under the Act of 1913 (par. 561); it is dutiable under the emergency tariff act of 1921 (par. 11).”

The next section, titled “Hempseed oil” (p. 152) states that this oil is obtained from the seeds of the hemp plant, cultivated in France, Belgium, Germany, southern Italy, Turkey, Algeria, North America, India, Manchuria, and Japan. It is used mainly in paint as a drying oil.

Soya beans are also mentioned under “Beans” (p. 786). Under “Beans, prepared or preserved” (p. 787) we read: “Soya beans are also made into various food preparations, especially for use by orientals.” A table shows that imports

of such soya beans increased from 1.43 million lb in 1918 to 3.4 million lb in the first 9 months of 1921.

The section on “Vegetables prepared or preserved” (p. 802-03) states: “Bean stick [perhaps dried yuba] or bean cake is an oriental food product made from ground and fermented soya beans. Miso is a cooked and fermented combination of rice and soya beans, generally used in making soup.” “Imports of bean stick or bean cake and miso were valued at \$73,097 in 1914, soya bean cake constituting about 40%. Edible bean cake and miso are imported to meet the demand of the oriental population.” A table shows that there was a 25% duty on such products and imports and value dropped from 1918 to 1921. Address: Washington, DC.

639. Japanese American News Inc. / Nichibei Shinbunsha. 1923. Nichibei jūshoroku [The Japanese American directory. No 19]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements. Published Jan. 1 by Nichibei Shinbunsha. Address: San Francisco, California.

640. **Product Name:** Maru-sho brand Miso, Shoyu [Soy Sauce].

Manufacturer’s Name: Tsuruda Goshi-gaisha (Tsuruda Limited Partnership). Miso, Shoyu Seizo-sho. Renamed Tsuruda Kyodai Goshi-gaisha in 1930 (Tsuruda Brothers Limited Partnership).

Manufacturer’s Address: 472 Josefa St., San Jose, California. Phone: San Jose 5539.

Date of Introduction: 1923. January.

New Product–Documentation: The Japanese American Directory. 1923. p. 138. Ad (¼-page) at bottom middle of same page (all in Japanese) says the company makes Marusho (or possibly Marumasa) brand miso and shoyu. Marusho is their registered trademark (*toroku shohyo*). Also in 1925. p. 4. Full-page ad (all in Japanese). The company now makes and sells koji. Tsuruda (probably not Tsuruta) Goshi-gaisha makes Maru-sho brand miso, shoyu, and koji. 473 Josefa St. (probably is 472 Josefa), San Jose. No phone number listed. A large illustration shows Maru-sho brand shoyu in a 30 oz. glass bottle, and a keg, Maru-sho brand miso in the same size keg, and Maru-sho koji in a wooden box. Also in 1924 directory, p. 143. Address is now 472 Josefa St. Also in 1924, p. 143. Also in 1925, p. N-114. Also in 1926, p. N-111. Still 472 Josefa. Full-page ad (identical to that of 1923) also in 1926, p. N-113. Also in 1930 directory, p. 116. New company name: Tsuruda Kyodai

Shokai. Miso, shoyu. 472 Josefa St., San Jose, California. Phone: BALLard 5539. Also in 1932 directory, p. 112, plus ad (¼ page) on same page, bottom right. Makes Maru-sho brand miso, shoyu, and koji. Also in 1934 directory, p. 116. Also in 1936 directory, p. 140.

641. Piper, Charles V.; Morse, William J. 1923. The soybean. New York, NY: McGraw-Hill Book Company, Inc. xv + 329 p. Feb. Illust. Index. 24 cm. Reprinted unrevised in 1943 by Peter Smith Publishers, New York. [563 ref]

• **Summary:** This is the first comprehensive book about the soybean written in English, and the most important book on soybeans and soyfoods written in its time. Contains an excellent review of the world literature on soybeans and soyfoods with a bibliography on soy that is larger than any published prior to that time (563 references), a good description of the present status of the soybean worldwide based on the authors' extensive contacts, and a great deal of original information. It quickly became a key source for people and organizations working with soybeans and soyfoods in all countries, and a major factor in the expansion of the soybean in the western world. Because of its scope and influence, Soyfoods Center considers the year of its publication to mark the end of the "Early Years" of the soybean worldwide. It remained in print until about 1986.

Contents: Preface. 1. Introduction: Name of the plant, origin, literature, use by the Chinese and Japanese, present importance, future prospects in the U.S., recognition of the possibilities. 2. The commercial status of the soybean: Manchuria and China, Japan, Europe, U.S., other countries, summary of imports and exports of soybeans and soybean oil. 3. Botanical history of the soybean: History prior to Linnaeus' "Species Plantarum" 1753, Linnaeus' misunderstandings of the soybean, Prain's elucidation, other and the correct botanical name.

4. Agricultural history of the soybean: Vernacular names of the soybean, China, Korea, and Japan, India and neighboring regions, Cochin China, Malayan region, early introduction into the United States, later U.S. introductions, the early introduced varieties (grown in the USA by 1898–Ito San, Mammoth, Buckshot, Guelph or Medium Green, Butterball, Kingston, Samarow, Eda, Ogemaw or Ogema), soybean in Europe, varieties grown in Europe and identification, Hawaiian Islands, Australia, Africa, Argentina (p. 50), Canada, Philippines, Egypt, Cuba (p. 52), British Guiana, Mauritius (p. 53), present culture distribution. 5. Culture of the soybean: Climatic adaptations, soil preferences, water requirement, preparation of seed bed, time of planting, methods and rate of seeding, seeding for pasturage, depth of seeding, inoculation, fertilizer reactions, cultivation, soybeans in mixtures (with cowpeas, sorghums, Sudan grass, Johnson grass, millet, corn, or sunflowers and corn).

6. Harvesting and storage of soybeans: harvesting soybeans for hay, silage, for the seed, seed yields, proportion of straw to seed, storing seed, separation of cracked from whole soybean seed, viability of soybean seed, pedigreed, inspected, registered, and certified seed. 7. Composition of the soybean: Proportions of stems, leaves and pods, composition of plant and seed, nutritive and mineral constituents, forms of nitrogen in soybean nodules, factors affecting oil content of seed. 8. Utilization of the soybean: Diversity of uses (a chart, p. 129, shows 59 products that can be made from soybean seeds, and 6 more that can be made from soybean plants), soybeans for green manure, pasturage, soiling, ensilage, hay, straw.

9. Varieties: Japanese, Manchurian, botanical classifications, vital characteristics, descriptions of important varieties, key for identification, breeding and improvement, genetic behavior, oil content.

10. Structure of soybean seeds. 11. Soybean oil: Methods of extraction [Manchurian, and solvent], American oil mills, methods of shipping and marketing, prices, utilization in soap manufacture, food, paint manufacture, miscellaneous. 12. Soybean cake or meal: Feeding value, composition, use for feeding for dairy cows, cattle, swine, sheep, poultry, digestibility, injurious effects, fertilizer.

13. Soybean products for human food: Food value of the soybean, digestibility of the soybean and its products, mature or dry soybeans, immature or green soybeans [a nutritious green vegetable], soybean flour, digestibility of soybean flour, soybean bran (p. 225-26), soybean sprouts, soybean coffee, soybean or vegetable milk [soymilk] (preparation, composition, residue from the manufacture of vegetable milk [okara], utilization of soybean milk, condensed vegetable milk, vegetable milk powder, fermented vegetable milk), vegetable casein, tofu or soybean curd (names and brief history, method of manufacture, coagulating agents, manufacturing yields, digestibility, utilization of bean curd and manufactured products, bean curd brains or *tofu nao*, dry bean curd or *tofu khan*, thousand folds {*chien chang tofu*}, fried bean curd {*tza tofu*}, Fragrant dry bean curd {*hsiang khan*}, frozen tofu {*kori tofu*}, Chinese preparation, various dishes), natto, hamananatto [hamanatto], yuba, miso, shoyu [soy sauce], confections. 14. Table dishes of soybeans and soybean products: mature or dry beans, flour, tofu, sprouts (86 recipes). 15. Enemies of the soybean: bacterial, mosaic, fungus [fungus], and nematode diseases, insects, rodents. This last chapter is a comprehensive review of the literature on soybean diseases and insects published before 1922.

The Preface begins: "The soybean, also known as soya or soja bean, has assumed great importance in recent years and offers far-reaching possibilities of the future, particularly in the United States. It is, therefore, desirable to bring together in a single volume the accumulated information concerning this crop..."

“The aim has been to present the information so as to make it useful from both agricultural and commercial standpoints, not omitting, however, much that is mainly of historical or botanical interest...”

The introduction begins: “There is a wide and growing belief that the soybean is destined to become one of the leading farm crops in the United States.”

Note 1. C.V. Piper lived 1867-1926. Note 2. This is the earliest English-language document seen that uses the term “soybean bran” to refer to soy bran.

Note 3. This is the earliest document seen in which Piper or Morse describe natto, Hamananatto [Hamanatto], yuba, or miso.

Note 4. This book was published by March 1923 (See *Ohio Farmer*, 10 March 1923, p. 313). Address: 1. *Agrostologist*; 2. *Agronomist*. Both: United States Dep. of Agriculture, Washington, DC.

642. Read, Bernard E. comp. 1923. Botanical, chemical, and pharmacological reference list to Chinese materia medica. Peking, China: Printed by the Bureau of Engraving and Printing. v + 38 p. Feb. 28 cm.

• **Summary:** Contents: Chemical and pharmaceutical references (45 entries; p. i-ii). Botanical literature (17 entries; p. iii). Bibliography of materia medica and medical botany other than cited in this reference list (47 entries; p. iv-v). Note: For these first three parts, column 1 is the abbreviation; column 2 is the full title.

The rest of this book consists one long table (p. 1-38) composed of four columns. (1) Chinese names (The name of each materia medica substance written in Chinese characters). (2) Romanized Wade (The Wade-Giles romanization of the Chinese name; the table is sorted alphabetically by this column). (3) Botanical references (such as the scientific name of a plant, or terms like “soy oil,” “rice congee,” or “rice gruel”). (4) Chemical & pharm. references (Abbreviations of references to documents containing information about this plant or other substance).

Chiang Yu–Soy oil appears on p. 3. References: (1) USDA Office of Experiment Stations, Bulletin No. 68, p. 36 (1899). (2) Stuart, G.A. 1911. Chinese materia medica, Shanghai. (3) J. of the College of Agriculture, Tokyo Imperial University 1:97 (16 June 1909). (4) J. of the College of Agriculture, Tokyo Imperial University 1:89 (16 June 1909).

Huang Ta Tou–Glycine hispida [The yellow soybean] appears on p. 11. References: (1) Matsumura, J. *Shokubutsu-me-i*, Tokyo, 1915. (2) *China Medical Journal* 35:247 (1921). (3) Martindale and Wescott, *Extra Pharmacopoeia*, London, 1921, p. 824, 1913. (4) *Pharmaceutical Journal* (London), II, p. 120, 1913. (5) Loureiro, J. *Flora cochinchinensis*, 1790, vol. II, 1844, 1912. (6) *Pharmaceutical Journal* (London), II, p. 154 (1912). (7) USDA Office of Experiment Stations, Bulletin No. 68, p. 33

(1899). (8) Wehmer, C. *Die Pflanzenstoffe*, Jena, 1911, p. 362.

Pai Tou–Soja hispida [The white soybean] appears on p. 11. References: (1) Stuart, G.A. 1911. Chinese materia medica, Shanghai. (2) Wehmer, C. *Die Pflanzenstoffe*, Jena, 1911, p. 362. (3) *American J. of Physiology* 19:468 (1907). (4) *J. of the American Chemical Society* 20:419 (1898).

Ta Tou–Glycine hispida M. [The soybean] appears on p. 11. (3) Bretschneider, E. *Botanicon sinicum*, 1881, 1892, 1895. (4) Giles, H.A. *A Chinese-English dictionary*, 1892

Ta Tou Ch’in–Bean relish appears on p. 30. No references.

Ta Tou Huang Chüan–Bean sprouts appears on p. 30–References: (1) Stuart, G.A. 1911. Chinese materia medica, Shanghai. (2) USDA Bureau of Plant Industry, Bulletin No. 107 (?), p. 28. (3) *China Medical Journal* 35:247 (1921).

Note 1. The references in this book are very cryptic and hard to understand, even after careful analysis. The book also contains quite a few typographical errors, inconsistencies, and mistakes.

Note 2. Other interesting substances mentioned in this book are: Mung beans (p. 4; *Phaseolus mungo*). Laminaria and Sargassum (p. 7, 15; types of sea vegetables, like kombu). Amaranthus (p. 9). Sesame seeds (p. 10; *Sesamum indicum*). Fermented nonglutinous rice (p. 12). Job’s tears (p. 12; *Coix lachryma*). Kudzu (p. 13; *Pueraria hirsuta*). Daikon (*Raphanus sativus*). Umeboshi plum (p. 19; *Prunus mume*). Address: Dep. of Pharmacology and Physiological Chemistry, Peking Union Medical College.

643. Piper, Charles V.; Morse, William J. 1923. Miso (Document part). In: Piper and Morse. 1923. *The Soybean*. New York: McGraw-Hill. xv + 329 p. See p. 247-50.

• **Summary:** “In extent of use miso is said to surpass all other preparations from the soybean in the Orient. It forms an indispensable part of the daily menu of the rural population and wage earners but it is used somewhat less extensively among the people living in cities. It is the general custom of the people in rural districts to prepare miso for their own use. It has been estimated that the daily consumption of miso per person in rural districts of Japan is about 40 grams.

“The preparation of miso depends primarily upon the action of a fermenting agent known as *kojii* [sic, koji], containing certain forms of fungi, of which *Aspergillus oryzae* is the principal one. The *kojii* also contains diastatic and inverting ferments which change the carbohydrates of the raw material into maltose, glucose, etc., and a proteolytic ferment which acts upon the nitrogenous bodies, converting them into simpler and more soluble materials.”

Describes the method of preparing miso in Japan, and two of the most important kinds of Japanese miso. The soybeans “are usually steamed for about 25 hours first with strong heat and later very gently.” “White miso, which

contains but little salt, is fermented with rice koji for 3 or 4 days only, and may be preserved for about 10 days. Red miso is red in color and contains a relatively large amount of salt. It is fermented usually with barley koji for 1½ to 2 years, and may be kept for several years." A table (from Kellner 1889) compares the composition of these two types of miso.

Photos show: (1) Five Japanese men making miso in a commercial shop; shows the steamer and a large miso fermentation vat. (2) Four men working at the "mill used for crushing the soybeans, yeast [koji] and salt mixture in the manufacture of miso. (3) Two Japanese men shoveling "early cured miso" out of a large vat and packing it into small wooden tubs, each ringed by 5 bamboo hoops.

Note: This is the earliest document seen in which Piper or Morse describe miso.

644. Church, Margaret B. 1923. Soy and related fermentations. *USDA Department Bulletin* No. 1152. 26 p. May 12. [27 ref]

• **Summary:** This long and very informative paper, with its excellent bibliography and review of the literature, is the third earliest study seen of a fermented food published by a USDA researcher. The focus is on Japanese fermentations because of the laboratory's contact with Japanese researchers, such as Dr. T. Takahashi and Dr. G. Kita. "The experimental work reported here was conducted under the direction of Charles Thom, mycologist in charge, Microbiological Laboratory, Bureau of Chemistry."

Contents: Introduction. Work of previous investigators. Experimental work: Apparatus, material, preparation of ingredients, shoyu-koji, peanut press cake koji, shoyu-moromi. Proportions of ingredients. Yields. Chinese soy sauce. Peanut sauce. Relation of enzymic activity to soy processes. Manufacture in the United States. Related fermentations (Miso, soy cheese [fermented tofu], natto). Summary. Bibliography. "Soy sauce is a dark-brown salty liquid made by the fermentation of soy beans with, as a rule, some additional starchy component. It is widely used as a seasoning throughout Japan, China, and Java [Indonesia], and has been introduced into the Philippines and Hawaii* (* = See letter from C.W. Carpenter, Sept. 23, 1918). Where the occidental would use a vegetable or meat extract and salt, the oriental daily uses soy sauce. Americans are familiar with soy sauce as it is used in the Chinese-American restaurants and as an ingredient which produces the characteristic flavor of the Worcestershire type of sauce." In Japan, the process of preparing "shoyu-koji," a mold-fermented product made from "tane-koji," takes 3 to 4 days. "The mold-fermented material is emptied into a strong brine, thus producing a mash. Constant daily attention is given to aeration, even distribution, and stirring of the solid ingredients. Progressive changes take place over a period of from six months to several years, until at last the mature

'moromi,' as the mash is designated by the Japanese, is produced. These changes are due partially to the activity of bacteria and yeasts, but chiefly to the enzymes of the mold introduced into the mash with the koji."

"Experimental work: The Department of Agriculture had certain strains of the *Aspergillus flavus-oryzae* group of molds known to be used in making soy sauce. Through the courtesy of W.T. Swingle, of the Bureau of Plant Industry, a can of commercial Japanese rice *tane-koji* designed for shoyu manufacture was also received. Dr. Gen-itsu Kita brought additional samples of shoyu *tane-koji* under sterile conditions directly from Japan. Provided thus with soy beans, wheat, and the mold ferment, experiments with soy sauce were undertaken by the Bureau of Chemistry in 1918.

"Apparatus: The apparatus was made according to specifications drawn by Doctor [T.] Takahashi, of the Imperial University of Tokyo, who worked in the bureau for a month." "The usual Japanese koji room (fig. 2) is 32½ feet long, 11 feet wide, and 7 feet high. The walls are thick, and in the more modern factories are built of brick, which does away with fluctuations in the temperature from without. At one end of the room is an entrance and at the opposite end a window (fig. 3). In the ceiling several openings provide means of escape for the carbon dioxide [dioxide] and the damp air. Steam pipes along the floor make it possible to warm the room in cold weather. The ceiling is built with many layers of straw in order that the condensing moisture may be absorbed. One disadvantage of such a ceiling is that infection always occurs in the wet straw. A large area of infection directly over the piles of koji trays is detrimental to the production of sweet koji. In modern buildings, therefore, the surface of the ceiling is coated with cement. When a cement ceiling is used the condensed water drops on the trays of koji, which also is harmful... The burning of sulphur is useful in combatting any infection of a koji room."

Material: "The mold ferment employed in shoyu-koji manufacture is *Aspergillus flavus* Link, occasionally *A. oryzae* (Ahlb.) Cohn, or strains intermediate between the two species." "Certain Japanese manufacturers add cultures of pure yeast belonging to the genus *Zygosaccharomyces* at the time of placing the first mold-fermented material in the brine."

Preparation of ingredients: While soaking the soy beans, the water should be changed at intervals of several hours to prevent the formation of spore-forming rods, which cause heating and souring. The spores of these bacilli are on the beans as they come from the field. "After being soaked for 20 to 24 hours the swollen beans are cooked in an open kettle or under pressure until they are soft enough to be easily pressed flat between the thumb and finger. This desired softness can be obtained by autoclaving at 15 pounds pressure for 50 minutes and also by much longer cooking in an open kettle. Autoclaving under pressure has

the advantage of sterilizing the material.” After roasting, the wheat is crushed or cracked. It is important to “reduce some portions of the kernel to a fine powder or dust.” The cooked beans and cracked wheat are “mixed in large trays or on mixing tables.” Hot beans “may be cooled with a draft of air directed over a thinly spread layer.” These “two ingredients need to be thoroughly mixed, so that the wheat dust may form a coat over each bean. The lower water content thus induced on the exterior of the beans makes them better adapted to mold growth than to bacterial growth.”

“Shoyu-koji–Ripening: After the beans and wheat are thoroughly mixed, a very small quantity of previously molded material, such as mature rice koji (tane-koji), some shoyu-koji, or a pure mold culture, is thoroughly mixed into the ingredients. The whole mass is then distributed into the small flat koji trays (Plate II, inserted between pages 4 and 5) which are immediately placed into the koji fermentation room before they cool further. Each tray holds about 1.8 liters, or about 2 quarts of raw material. The koji trays are placed in tiers along the wall of the room (Fig. 3).” They are usually stacked in a zigzag fashion to ensure adequate aeration. This is extremely important “because moisture and the lack of oxygen induce the development of mucors and bacteria, and are said to cause the diastatic enzyme to develop at the expense of the proteolytic enzyme. In some localities in Japan no such trays are used, but a broad straw mat with which very good koji can be secured.” “The koji room or compartment is kept at a temperature of 24° to 25° C., with a definite humidity.” Continued. Address: Microanalyst, Microbiological Lab., Bureau of Chemistry [USDA].

645. Church, Margaret B. 1923. Soy and related fermentations: Related fermentations–Miso (Document part). *USDA Department Bulletin* No. 1152. 26 p. May 12. See p. 23.

• **Summary:** “Soy sauce is only one of the mold-fermented food products originating in the Orient, the majority of which are ripened by means of the molds represented by the yellow-green group of *Aspergilli*.

“Miso, one of these products, is one of the most common breakfast foods for children. There are two types of miso, white or shiro miso and red miso. Miso is prepared from a koji ripened by means of the *A. flavus oryzae* group of molds. The soy beans are cooked in miso before the fermentation is undertaken. The treatments subsequent to the cooking and preparatory to the fermentation doubtless varies in different localities. It is said that the beans may be made into a paste before being ripened by the mold. As bought in this country, however, miso shows the beans intact. White miso is said to be made from a koji of soy beans or soy beans and a starchy material, as rice or barley. The koji is ripened as is shoyu-koji and placed in a weak brine for 10 days. Unfinished rice wine may be added to

improve the flavor and to preserve the product, which is rather perishable. Red miso is prepared in the same way as the white miso, but is ripened for from one to three months in a stronger brine. White miso has been bought in the United States in two forms. One type is very salty and therefore less perishable than the other. Probably because of longer fermentation red miso is dark red. It is very cheap, whereas white miso is expensive.” Address: Microanalyst, Microbiological Lab., Bureau of Chemistry [USDA].

646. Brook, Harry Ellington. 1923. Care of the body. *Los Angeles Times*. July 8. p. XI30-35. Sunday magazine.

• **Summary:** The section titled “What workers eat” begins: “Dr. Josiah Oldfield, an eminent English physician, has been investigating the diet of the world’s workers. He obtained the following information from foreign legations in London:”

“From the Consulate General of Japan: Rice, barley, wheat, vegetables, miso soup (miso is prepared from the soya bean), soy [soy sauce or shoyu] (Japanese sauce which is indispensable for cooking purposes), fish (fresh or salt, wet or dried), vegetables are chiefly cooked with soy, salt, sugar, etc. Rice is taken in the place of bread. Flesh-meat does not form an important part of the Japanese dietary.”

After discussing food consumption information from 13 countries, Brook concludes: “These people are better nourished than the Americans, who subsist mainly on lean meat, bread made from refined white flour and refined white sugar, with tea and coffee and little vegetables”

647. **Product Name:** Miso.

Manufacturer’s Name: Takesuye (S.) Miso.

Manufacturer’s Address: Wailuku, Maui.

Date of Introduction: 1923.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1923. p. 1365. But not listed in the Business Directory under Miso Manufacturers. First clearly listed there in 1924. Address is now Kahului. 1934-35 Directory lists him as Takesue S. in Kahului, Island of Hawaii.

648. **Product Name:** Miso.

Manufacturer’s Name: Ueno Miso Factory (Ueno Kojiten).

Manufacturer’s Address: 639 North King St., Honolulu, Oahu, Hawaii.

Date of Introduction: 1923.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1923. p. 950. Ueno Yakuma, miso, 1100f Hoapili Lane. General Store, 639 N. King. 1924 Directory. p. 469. Residence given as 639 N. King. 1928-29 Directory. p. 516, 837. Ueno Yakuma/Yakumo, General Store 639 N. King. Miso, 1100f Hoapili Lane. Note: No business name is listed yet. Yakuma is listed as a vinegar

manufacturer in the 1922 Directory. Phone numbers are 8818 and 8896. Y. Ueno is listed as early as 1917. 1914 Directory. p. 712. Yakuma, U., soy, 642 N. King. Residence, same. 1947-48 Directory. p. 1216. Yakuma Ueno, 1024 Hoapili Lane, Honolulu, is the only miso mnfr listed for this year.

Nihei. 1978. *Nippon Jozo Kyokai Zasshi*. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." Says: "Ueno Koji-ten, founded by UENO Yuichi at 639 N. King St., Honolulu. No longer in business." No date of founding given. Wm. Higa. 1980. *History of Miso Companies in Hawaii*; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. The company was started by Mr. Yuichi Ueno. No longer in business.

649. Bottari, Fulvio. 1923. *La soja nella storia, nell'agricoltura e nelle applicazioni alimentari ed industriali* [The soybean in history, in agriculture, and in food and industrial applications]. Torino & Genova, Italy: S. Lattes & Co. 243 p. Preface by Prof. Oreste Matriolo (R. Università di Torino). With 34 illust. 22 cm. [25 ref. Ita]

• **Summary:** Contents: Preface. Reason for the work; its scope and limits. Part I: The origin and history of the soybean. Reason for this history, the origin of the soybean and its early dissemination, soya (including production statistics) in Oriental countries (China, Manchuria, Japan, Formosa, Korea, French Indochina), how the soybean was introduced to Europe, the cultivation of soya in France, Soya in England, Austria, Germany, Denmark, Holland, Russia, Sweden, Alsace-Lorraine (now in northeast France), Spain, Italy, America, Conclusion.

Part II: Cultivation of soya. Part III: Soya in the feeding and nutrition of humans and animals. 1. The analysis and physiology of metabolism as an element in the study of nutrition. 2. Soybean forage in the feeding of animals. 3. Soybeans (*il grano di soja*) and soy products in the feeding of humans and animals. 4. Flour, pasta, and bread in feeding. 5. Soymilk (*il latte di soja*) and its use in the feeding of animals and humans. 6. Tofu (*il formaggio di soja*). 7. Soy oil and oil-cakes (*panelli*). 8. Condiments and sauces: Natto, miso, soy sauce. 9. Enzymes (I fermenti, incl. urease). 10. Conclusions.

Part IV: Industrial applications of soya.

Part V: General conclusions.

The first test of the lactation of calves with soymilk was conducted in the winter of 1916-17 by the Bonafous Institute in Turin. The results were splendid, and have encouraged eminent pediatricians such as Dr. Casalini, Prof. Dr. Alberto Muggia (teacher of clinical pediatrics at the University of Turin), and Dr. Enrico Gasca (vice director general of infants at Turin) to extend their experiments (p. 6).

In Italy vegetable oil production has decreased steadily from 1870 to 1920. Attempts were made to grow sesame,

peanuts, and rapeseed, and to import oils from abroad. During World War I, unrefined soy oil was introduced to the market in large quantities, but its unappealing taste disgusted consumers and for a while nothing more was heard of it. Then in 1921 it began to be introduced again, but this time it was refined at Italy's national oil works. The good results obtained encouraged the Italian oil milling company, Sairo, and other oil works to make great progress in soy oil production. Several thousand quintals (i.e. several hundred metric tons) of the best soy oil, sold under the name "refined oil from seeds," were introduced in the first half of 1922 by the national oil works of Genoa.

Returning to the early history of soya in Italy, we find that in 1848 some missionaries brought soybean seeds and a little soil to Italy from Japan. They waited for the cultivation for several years, then nothing else was said. In 1880 the Italian Ministry of Agriculture recommended the cultivation of soybeans as a fodder crop for the future, as was being done in the USA, but their suggestion received no attention. In 1918, according to Mattei, a test of soybean culture was done at the Colonial Garden of Palermo on a parcel of 300 square meters.

Since 1912, after seeds had been brought by foreign delegates to the International Exhibition at Turin in 1911, repeated experiments with soybean cultivation have been conducted at the Bonafous Agricultural Institute in Turin, with the goal of developing two well adapted varieties, one for fodder and one for seed. Their green variety is for fodder and their yellow one for seed.

From 1920 the directorship of the cultural work was given to the head professor at the Institute, Venanzio Manvilli, also professor of the Germano Sommeiller Technical Institute, professor the faculty of agriculture, University of Turin. They worked with seeds already selected from the institute and with those obtained from Prof. Don Ricaldone, and from Tientsin, China, directly. Others who have done important work with soya in Italy are Paolo Bottari (with soymilk at the Bonafous Institute), Tamanini Guido, Mossello and Bellia, Prof. Cav. Giov. Batt. Allaria, Dr. Mose Miccinelli

A table (p. 31) shows soybean and cotton hectareage and production in Korea from 1909 to 1917. Soybean hectareage increased from 277,776 ha to a record 487,134 ha. Soybean production grew from 1,991,126 quintals (1 quintal = 100 kg or 0.1 metric tons) to a record 3,816,498 quintals.

Page 35: "Prof. Rouest of Luxey (Landes) in France wrote us on 30 Nov. 1921. 'I have finished only the period of acclimatization of the soybean. It remains for me to propagate it a little everywhere. The experiments of 1921 were extended in all the Departments, being viewed from an industrial and commercial point of view. I must now study which variety adapts among those I am cultivating. Soy flour will not be able to be made until we have many thousands of hectares under cultivation, and then we will be

able to think of other applications as well... Actually the firm Hendebert de Lion sells its flour, originating in China, at 10 French francs per kg, a prohibitive price.”

Page 206: At the pediatric congress held in Milan in Sept. 1922, the question of lactation (feeding children) with vegetable milk was discussed in a favorable way, proposed by Prof. Muggia and sustained by the illustrious Prof. Berghius, Director of the Pediatric Clinic of the University of Padua, and by Prof. Francioni of Bologna. We can also add that experiments on lactation are proceeding in Italy at the pediatric clinics of Turin, Bologna, Padua, Genoa, and Florence, and also at the Infant's Dispensary in Turin.

Photos show: (1) Three different varieties of soybean plants (p. 70). (2) 2 soybean plants up close (p. 71). (3) The leaves of 3 different varieties of soybean plants (p. 72). (4) Close-up of the stem and pods of a soybean plant (p. 73). (5) Beans and pods of soybeans (p. 74). (6) Different stages of germinating soybean seeds (p. 75). (7) Close-up of soybean roots (p. 76). (8) Field of soybeans at the “Istituto Bonafous” (p. 106, 108, 113). (9) Field of soybeans grown with corn (p. 122, 123). (10) Cellular transverse section through a soybean (facing p. 152). (11) Pasta made from soy (p. 181). (12) Bread made from soy (p. 183-89).

Note 1. Quite a bit of the historical and non-Italian information in this book comes from Léon Rouest's 1921 book *Le soja et son lait végétal: Applications agricoles et industrielles*.

Note 2. This is the earliest Italian-language document seen (Feb. 2004) that mentions natto, which it calls “il Natto in Giappone che corrisponde al *Tao-Teche* della Cina.” Address: Dr. of Economic and Commercial Science, Turin [Torino], Italy.

650. Jansen, B.C.P. 1923. On the need of anti-beri-beri-vitamin of the animal organism and on the amount of this vitamin in different foodstuffs. *Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indie* p. 1-122. See p. 65-73. [60* ref. Eng]

• **Summary:** Eykman, who discovered the nutritional cause of beri-beri, quickly pointed out the great importance of determining the protective power of various substances against beri-beri. It has been known for 25 years that living mainly on polished rice contributes to beri-beri, “whilst unpolished rice entirely protects against this disease.” Most Javanese farmers still pound their own rice; when they do, only a part of the pericarp is removed by pounding. This sort of rice contains sufficient vitamin to protect the population from beri-beri. Industrial workers, who have neither time nor opportunity to pound their own rice, buy polished rice (with the whole pericarp removed) from rice mills. Though nearly devoid of vitamin, it is a product which “much more lasting with regard to storage and transport, and which at the same time by its nicely white aspect fetches a much better price on the market.” Therefore

the authors are investigating foods that can be eaten with polish rice to help prevent beri-beri.

Section 8, titled “Katjang kedele (Soy-beans)” (p. 65-73) begins: “This is a very important kind of beans for the native dietary.” Soy-beans were fed to pigeons with white rice in varying proportions. The higher the proportion of soybeans, the better the health of the pigeons. When a large proportion of the diet was washed and polished white rice, the birds developed polyneuritis and often died or became paralyzed.

On page 68 the author notes that in Java, “soy-beans are not only eaten as such, but also very much in the shape of different native concoctions. It has been asserted (by C.L. van den Burg, 1904) that in this way the hard-to-digest legumins would be made easier to digest. However as far as I know, this assertion has not been founded on any experiment. A priori I think it as probable that by making tempé of the beans the taste is changed to such an extent, that they may be used continually, without being objected to. I hope some time to find an opportunity of experimentally deciding this question. Till at present I only examined, whether in these concoctions the vitamin-content either has increased or lessened... I now experimented with tempe kedele and with tao-tjo” [Indonesian-style miso].

Tempe, purchased on the market in Batavia, was fed in place of the soybeans. The results showed “a rather considerable loss of vitamins may be seen to have taken place during the preparation of tempe kedele from the soy-beans.” Tao-tjo (Indonesian-style miso) was then used in place of soybeans, and it too was found to be a poor source of vitamins.

Note 1. This is the earliest English-language document seen that mentions tempeh, which it calls “tempé” or “tempe” or “tempe kedele.” These terms are not italicized in the text.

Note 2. This is the earliest English-language document seen (March. 2009) uses the word “tao-tjo” to refer to Indonesian-style miso. Address: Dr., Head of the Chemical Dep., Medical Lab. at Weltevreden.

651. Kellogg, John Harvey. 1923. *The natural diet of man*. Battle Creek, Michigan: The Modern Medicine Publishing Co. 386 p. Illust. Index. 20 cm. [50+* ref]

• **Summary:** This classic of vegetarian literature contends that a vegetarian diet is the natural diet of man. Contents: 1. Man not naturally a flesh-eater: Modern civilized life unnatural and unbiologic, animal dietaries, lessons from the monkey, porcine wisdom in diet, animals classified by diet, the ancient family of primates, all mammals originally vegetable feeders, when germ diseases were unknown, kinship of higher apes and men, flesh-eating never a universal human custom.

2. Twenty popular delusions about flesh foods: D-1. That meat is superior as a blood-making food, and, hence, is

needed in anemia. D-2. That meat is essential as a flesh-building food. D-3. That a flesh diet is essential to support severe or prolonged activity; that is, promotes endurance. D-4. That flesh-eating is necessary to produce physical courage. D-5. That vegetarian races are inferior physically and mentally to races using a mixed diet. D-6. That flesh foods are more refined and more easily digested and, hence, more nutritious than are foods of vegetable origin. D-7. That man is naturally omnivorous. D-8. That flesh foods are stimulating and thus supply an element needed especially by brain workers. D-9. That beef tea is a useful nutrient. D-10. That a meat diet is required to prevent or cure gastric acidity. D-11. That a meat diet is desirable in tuberculosis. D-12. That a meat diet is necessary in diabetes. D-13. That a flesh diet is essential in the treatment of obesity. D-14. That meat is required in beri-beri. D-15. That meat is essential as a “building-up” or restorative food. D-16. That meat is needed by growing children. D-17. That meats are needed as a stimulus to appetite. D-18. That the beef industry is a necessary part of our national economic system. D-19. That a meat diet is necessary to insure reproductive activity. The law of diminishing returns versus flesh-eating. D-20. That meat is a harmless luxury.

3. Scientific objections to the use of meat: Human liver not adapted to meat diet; important differences between meat and milk; meat deficient in vitamins and food lime; Eskimos eagerly seek vegetable food; ill effects of meat diet on Arctic explorers; meat saturated with tissue poisons; meat readily putrefies, natural foods do not; the poisons of meat; meat extracts; why viscera are especially objectionable; bacteriology condemns meat as food; vast numbers of bacteria in meat; putrefactive products of meat; why physicians forbid meat in cases of kidney disease and high blood pressure; how flesh-eating causes constipation.

4. Diseases due to flesh eating: Tuberculosis in animals, cancer from meat eating, cancer rare and appendicitis unknown among flesh abstainers, meat-eating causes disorders of nutrition, acidosis from a flesh diet, a meat diet and scurvy, meat eating and arteriosclerosis, pernicious effects of a meat diet experimentally proven, recognized meat contraindications, the peregrinations of a deadly parasite, typhoid germs in meat products, flesh poisoning, no protection for meat-eaters, oyster poisoning, converting sewage into food.

5. Experimental evidence against flesh eating: McCollum’s experiments, Dr. S. Weir Mitchell endorses the meatless regimen, an eminent scientist on meat diet, Fauvel’s observations, greater endurance of flesh-abstainers, the death rate reduced by meatless diet, flesh-eating does not develop intelligence, meat-eating and race degeneracy, meat-eating a city habit, non-meat diet best even for carnivorous animals, the Scotchman’s dog, the effects of a meat diet on rats, the effects of a flesh diet on rabbits, flesh-eating animals short lived. 6. The ethical argument.

7. Historical facts and authoritative opinions: Biblical teaching about flesh eating, apostles who were flesh abstainers, the Essenes were flesh-abstainers, the diet of the ancient Greeks, King Cyrus a flesh-abstainer, Julius Caesar’s army ration, diet of Peruvian soldiers, diet of athletes of ancient Greece, ancient philosophers were flesh-abstainers, Plutarch’s essay on flesh-eating, fleshless diet of a Roman emperor, meatless diet endorsed by Gautier, views of Seneca, diet of the ancient Sumerians [today’s Iraq], eminent modern flesh abstainers, vegetarian monks, Thoreau on the fleshless diet, a Chinese statesman’s experience, the views of two great naturalists, the poet Shelley a food reformer, a child’s natural repugnance to meat, Liebig on the advantages of a non-flesh diet, Sylvester Graham’s diet reform movement.

8. Interesting facts concerning the dietary habits of various peoples. 9. The marvelous adaptation of the natural diet to human needs. 10. How to discard meats comfortably and safely.

11. Is the disuse of meat advisable from a practical standpoint? The U.S. Department of Agriculture shows the use of less meat to be safe and economic, the importance of planting nut trees, avoidance of meat is necessary to change the intestinal flora, vegetable substitutes for meat, the recent low protein movement in the United States, the half century experience of the Battle Creek Sanitarium with a fleshless diet.

12. Newspaper and magazine misinformation: An “eat-more-meat” campaign, Professor Fisher of Yale University [Connecticut] refuses to support the “eat-more-meat” campaign of the [Chicago, meat] packers, pernicious piffle.

Soy is mentioned in many places. The section titled “Flesh-eating never a universal custom” states (p. 33-34): “According to Mori, the Japanese peasant of the interior is almost an exclusive vegetarian. He eats fish once or twice a month and meat once or twice a year... The soy bean is held in high esteem and used largely in the form of *miso*, a purée prepared from the bean and fermented; also *to-fu*, a sort of cheese; and *cho-yu* [shoyu], which is prepared by mixing the pulverized beans with wheat flour, salt, and water and fermenting from one and a half to five years. The Chinese peasant lives on essentially the same diet, as do also the Siamese, the Koreans, and most other Oriental peoples. Three-fourths of the world’s population eat so little meat that it cannot be regarded as anything more than an incidental factor in their bill of fare.”

Page 45: Complete “proteins are found in milk and eggs as well as in most nuts, peanuts, and the soy bean...”

Page 73: “The protein of milk, of the soy bean, and of nuts is known to be superior to meat as a source of body nitrogen.” Address: Superintendent of the Battle Creek Sanitarium, Battle Creek, Michigan.

652. Kempfski, Karl E. 1923. *Die Sojabohne: Geschichte, Kultur und Verwendung unter besonderer Beruecksichtigung der Verhaeltnisse in Niederlaendisch-Indien* [The soybean: History, culture and use, with special attention to the situation in the Netherlands-Indies]. Berlin: Paul Parey. 88 p. Illust. Index. 22 cm. [101 ref. Ger]

• **Summary:** Contents: Introduction. Some remarks on the soybean's early history. Overproduction of soybeans in Manchuria after the Russo-Japanese War—English oil mills make their first trials. Soybean production in Manchuria. Soybean production in Korea. Soybean production in Japan. Soybean production in America—Soybean meal and soybean milk are introduced. Soybean production has also expanded in Africa, British India, and the Philippines. The introduction of soybean cultivation to Europe. The many uses of the soybean in Europe. Uses of soy oil. Old and new methods of obtaining soy oil. Soybean production and use of soybeans in the Netherlands-Indies. Appendix: Descriptions of how the most important soybean products are manufactured: In Java (*tao-hoe* [tofu]), *tempeh*, *ketjap* [soy sauce], *tao-tjong* [or *tao-jiung*, a term, and perhaps a product, between *doujiang* and *tao-tjo*, Indonesian-style miso], in China and Japan (soy sauce, miso, tofu, frozen tofu, *natto*, soymilk) (p. 62-68). Supplements: I: Soybeans in Manchuria. II; *Hansamuehle* [Hansa Muehle] in Hamburg, Germany. III: *The Soybean* by Piper and Morse.

Note the extensive, early bibliography. Unfortunately, it contains many errors.

This book is largely a review of the literature, but with some original information, especially on Indonesia and Germany. In 1923 Java imported 150,000 to 200,000 tons of soybeans and had a population of 35 million. The area of soybeans planted in Java (including Madura) increased from 157,600 ha in 1918 to 164,700 ha in 1922 (p. 32). In 1921, 67.3% of Java's soybean acreage was in Central Java, 20.7% was in East Java, and only 5.7% was in West Java. (p. 35). Large quantities of soybeans are imported to the Netherlands-Indies from Manchuria: 35,105 metric tons (tonnes) in 1920, rising to 95,742 tonnes in 1922. From these and local soybeans are made *tempeh* [spelled like this!], *tofu* (*tahoe*; *Bohnenkäese*), *soy sauce* (*Ketjap*, *Sojasauce*), etc. In Java, mostly black soybeans are grown. To make *tofu* yellow, it is cooked in an extract of the *Curcuma* root / rhizome. Sometimes it is also sun-dried or fried/roasted (*gebraten*). *Tempeh* is inoculated with a piece of *tempeh* from a previous fermentation, and often fried in coconut oil. Detailed descriptions are given of the production of *soy sauce* (*ketjap*; which is made from black soybeans) and Indonesian *miso* (*taucho*; *tao-tjong*). The author (p. 64) states that *ketjap* and *tao-tjong* are both inoculated using *Hibiscus tiliaceus* (hibiscus) leaves, called *waroe* in Java. Today Germany, like America, produces fresh and dried soymilk, fresh and dried soya cream, meat analogs, and soy sauce (p. 25).

This book contains 17 interesting, old photos. Descriptions of those reproduced from other periodicals are omitted. (1) A soybean field on the farm Kikai Nojo near Sempo-Station, Korea, owned and run by Mr. Moegling (p. 12). (2) A combine used for harvesting regular beans in California in 1918 (p. 19). (3) Many hydraulic presses in a modern American oil factory (p. 29). (4) The equipment used in steaming the soybeans before they are crushed in an American "steam mill" type oil mill (p. 31). (5) The interior of a British oilmill (p. 33). (6) The electrical generators in a modern oilmill (p. 34). (7) Soybeans being harvested manually at Madioen [Madiun, in East Java], Java (p. 48). (8) Harvested soybeans being dried on racks in a field in Java, and carried away by one worker (p. 48). (9) Workers dividing up the harvest in Java (p. 50). (10) Threshing soybeans with bamboo flails in the courtyard of a small farmer in Java (p. 51). (11) Selling soybeans in a small market in Central Java (p. 51).

Tables show: (1) Imports of soybeans to Germany from 1910 (43,500 tonnes) to 1912 (more than 125,200 tonnes) (p. 24). (2) Soybean acreage in Java (including Madoera) from 1918 (157,600 ha) to 1922 (164,700 ha) (p. 32). (3) A breakdown of soybean area in Java in 1921 (of 226,186 bouws) into West Java (12,980 bouws), Central Java (152,154 bouws), and East Java (61,082 bouws) (p. 35). Note: 1 bouw = 1.754 acres (Johnstone 1975). (4) Imports of Manchurian soybeans to Java (including Madoera) and other parts of the Dutch East Indies (mainly Sumatra) from 1920 to 1922 (p. 36). (5) Yields (average or range) of soybeans in various countries: Germany, Italy, British Indies, Manchuria (incl. China and Korea), Japan, America (up to 2,700 kg/ha), Java (p. 52). (6) Comparison of the nutritional composition of soybeans, peas, and regular beans (*Phaseolus* varieties) (p. 53). (7) Comparison of the nutritional composition of soya cheese (*Sojakäse*, *tofu*), beef, and lean pork (p. 53). (8) The prices of white and of black soybeans in Java during January and December 1922 and the same two months of 1923 (in Gulden) (p. 56). (9) Comparison of yields, price, costs, and profit for peanuts (*Katjang tanah*) and soybeans in Java (p. 57-58). (10) Nutritional composition of canned frozen *tofu* (based on E. Senft) (p. 68). (11) Exports of soybeans from five Manchurian ports (Dairen, Antung, Newchwang, Suifenho [Suifenhe], and Sansing) in 1919, 1920, and 1921 (p. 70). (12) Exports and value of soybeans from all of China to four countries (Netherlands, Russia, Japan, Dutch East Indies) in 1919, 1920, and 1921 (p. 72). (13) Exports of soybean oil from five Manchurian ports (Dairen, Antung, Newchwang, Suifenho [Suifenhe], and Harbin) in 1919, 1920, and 1921 (p. 72). (14) Exports and value of soybean oil from all of China to five countries (England, Netherlands, Belgium, Japan, USA) in 1919, 1920, and 1921 (p. 72). (15) Exports of soybean meal from four Manchurian ports (Dairen, Antung, Newchwang, Suifenho

[Suifenhe]) in 1919, 1920, and 1921 (p. 73). (16) Exports and value of soybean meal from all of China to three countries (Japan, Russia, USA) in 1919, 1920, and 1921 (p. 73). (17) Names of the five major railway lines in Manchuria (South Manchuria Railway, Chinese Eastern Railway, Peking Mukden Line, Kirin-Changchun Line, Saupingkai-Taonan Line) (p. 74). (18) Amounts (in tons) of soybeans, soybean cake, and soy oil (*Sojaöl*) shipped over the South Manchuria Railway, and the Chinese Eastern Railway in one year (p. 74). (19) Railway transport and production amounts of the mills (in tons) in Dairen and Newchwang of soybeans, soybean cake, and soy oil (*Sojaöl*) during the year 1921 (p. 74). Address: Agricultural Expert in Poerbasari te Pengalengan, Java.

653. Watson, Ernest. 1923. The principal articles of Chinese commerce (import and export) with a description of the origin, appearance, characteristics, and general properties of each commodity; an account of the methods of preparation or manufacture together with various tests, etc., by means of which the different products may be readily identified. Shanghai, China: Statistical Dept., Inspectorate General of Customs; sold by Kelly & Walsh [etc.]. xi + 630 p. Illust. 28 cm. The Maritime Customs. II. Special Series No. 38.

• **Summary:** Section II, titled “Oils, fats, and waxes” (p. 76-149) contains detailed definitions of the following: Bean oil (*Tou-yu* or *Oleum dolichos*) obtained from the soya bean of China, and the residual meal (*tou-ping-fên*) (p. 85-86). “In China bean oil is used as a food; for cooking purposes; for mixing with lacquer; in making varnish and printing ink; in soap making; and, to a slight extent, as an illuminant, although for this purpose it has been almost superseded by kerosene. It is also used in water proofing cloth and paper for making umbrellas and lanterns. In foreign countries, where the demand for the oil is practically unlimited, bean oil is used chiefly in the manufacture of soap and in preparing salad oils. On account of its drying properties bean oil is not very suitable for use as a lubricating oil.

“Bean oil appears in Chinese commerce packed in wooden tubs, paper-lined baskets, or in earthenware jars, of no standard weight. It is exported in great quantities from many of the northern ports, particularly from Dairen and Newchwang, and, to a smaller extent, from Hankow and other Yangtze ports.”

Section VI, titled “Miscellaneous products” contains a long subsection on “Beans, Soya” (*Tou*) (p. 320-21). “Soya beans, or ‘soy beans’... are cultivated in enormous quantities in Central Manchuria... It is estimated that about 1,600,000 tons are produced annually in Manchuria alone... The beans are small,... the yield per acre being from 1,100 to 1,600 pounds [18.3 to 26.6 bushels]. Several varieties are grown in China and are commonly classified by the Chinese according to form, colour, size, use, and other

characteristics. The best known of these varieties are (with Chinese characters for each term): -

(1) Yellow beans (*huang-tou*), subdivided into *pai-mei-tou* or ‘white eye-brow bean,’ so called from the whiteness of the prominent hilum; *chin-yüan-tou* or ‘round golden bean’; and *hei-ch’i-tou*.

(2) Black beans (*wu-tou*), subdivided into (*ta-wu-tou*) or ‘large black bean’; (*hsiao-wu-tou*) or ‘small black bean’; and (*pien-wu-tou*) or ‘flat black bean.’

(3) Green beans (*ch’ing-tou*), subdivided into two varieties, one of which has a green epidermis and green interior, the other a green epidermis and yellow interior.

Three subspecies [of soya beans], yielding very small beans, are known as: (*hsiao-pai-tou*) or ‘small white bean’; (*hsiao-hung-tou*) or ‘small red bean’; and (*hsiao-liü-tou*) or ‘small green bean.’” Note 1. The writer may be mistaken in calling these last three subspecies of soya beans. They are probably white azuki beans, red azuki beans, and mung beans.

Soya beans “are valued chiefly as a source of bean oil, but are also extensively used as food, either whole or ground to flour in making beancurd, bean milk, bean sauce, or ‘soy,’ and salted relish (*ta-tou-shih*) [soy nuggets], which is used both as a food and as a medicine. The black beans, which are not much used as food because they are supposed to make the body too heavy, are used in medicine, to impart strength and vigour, as a carminative, and also as an antidote for vegetable poisons, such as aconite, croton oil, etc. The hulls of green [soy] beans are applied to smallpox ulcers and other sores; the bruised leaves of the plant are used in treating snakebite; the flowers are used in treating diseases of the eyes. Young bean sprouts (*tou-ya*) are used as a vegetable food.” Details are given on the following products made from soya beans: “Beancurd (*tou-fu*), bean milk (*tou-fu-chiang*), bean sauce (see under ‘soy’), and bean vermicelli (*Fen-ssu*, *Tou-fen-ssu*, *Hsi-t’iao-mien*, or *Kua-mien*.—A very famous vermicelli made in the Chefoo district, from beans most of which are originally imported from Manchuria).

Note 2. This is the earliest English-language document seen (Nov. 2008) that uses the term “salted relish” to refer to soy nuggets.

The section titled “Soy (*Chiang* or *Chiang-yu*)”—with Chinese characters for each term) states: “Soy is a sauce made in China from the soya bean (*Soja hispida*). In preparing it, a quantity of beans are slowly boiled, an equal quantity of coarsely ground wheat or barley being added. The mixture, after being allowed to ferment for some time, is put into a jar with an equal amount of salt, a few aromatics, and three times as much boiling water as there were beans at first; the whole is then allowed to stand for several weeks exposed to the sun, after which the liquor, which constitutes the soy, is separated by pressing and

straining the mass. The finished product is afterwards packed into jars or bottles ready for the market.

“Soy is thin, and, in colour, very dark brown or almost black; it becomes brighter and clearer on being kept, has an agreeable salty flavour, and produces a yellowish froth when even slightly shaken. It is much used by the Chinese as a sauce and condiment, as it creates an appetite and is supposed to counteract the injurious properties of contaminated food; it is also used in medicine as an application for burns, scalds, eczema, leprosy sores, etc. Soy is often exported from China to foreign countries, where it is extensively used in the manufacture of many European sauces.”

Also discusses: Groundnut oil (*Hua-shêng-yu*), also called peanut oil, earth-nut oil, and arachis oil (*Oleum arachis*) (p. 105-06). Hemp-seed oil (*Ma-yu or Ma-tzu-yu*) (p. 106).

Sesamum-seed oil (*Chih-ma-yu or Hsiang-yu; Oleum sesame*) also known as “gingelly oil,” “teel oil,” or “benne oil” (p. 133-35). Groundnuts (p. 421-22). Wheat gluten (*Mien-chin*, p. 574). A second edition was published in 1930. Address: Chief Appraiser, Chinese Maritime Customs.

654. **Product Name:** [Sweet White Miso].

Foreign Name: Shiro-miso.

Manufacturer’s Name: Harada Shiro-miso Seizo-sho (Harada Sweet White Miso Manufacturing Co.). Renamed Harada Miso, Koji Seizo-sho in 1926.

Manufacturer’s Address: 825 F St., Fresno, California. Phone: 5606W.

Date of Introduction: 1924. January.

New Product–Documentation: The Japanese American Directory. 1924. p. 277. Ad (1/10 page. The company also makes pickles and koji. The address has changed to 825 F. St. New phone number: 2858W). Also in 1925, p. N-261 (directory and 1/8 page ad; still has two different names). Also in 1926, p. N-256 (directory; Harada Miso, Koji Seizô-sho).

The Japanese American Directory. 1930. p. 264. A 1/12 page ad (p. 271) gives the company name and address (in characters): Harada Miso Koji Seizô-sho, 825 F St., Fresno, California. Phone: 2-1761. They also make and sell various Japanese-style pickles (*tsukemono*).

655. Japanese American News Inc. / Nichibei Shinbunsha. 1924. Nichibei jûshoroku [The Japanese American directory. No 20]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements.

Published Jan. 1 by Nichibei Shinbunsha. Address: San Francisco, California.

656. **Product Name:** Miso, Koji.

Manufacturer’s Name: Kushiro Miso, Koji Seizo-sho (Kushiro Miso & Koji Manufacturing Co.).

Manufacturer’s Address: 915 Meridian Ave., South Pasadena, California. Phone: ELliot 1367.

Date of Introduction: 1924. January.

New Product–Documentation: The Japanese American Directory. 1924. p. 369. Ad (½ page vertical). The top part is written in English: “Kushiro Miso Koji Mfg. Co., 915 Meridian Ave., So. Pasadena, California. Tel. 351367.” But most of the ad (about 85%) is in Japanese. At the top of the Japanese part, an illustration shows two containers of koji, side by side. On each is written, from right to left, in Chinese characters and hiragana, *tokusei hoshi kauji* (today pronounced *tokusei hoshi koji* = special dried koji). The company makes both fresh and dried koji. They are trying to get a patent for their new koji making process. Also in 1925, p. S-44 (¼-page ad, bottom left. New phone number: ELliot 1367. They are still trying to get a patent for their new koji making process). Directory entry p. S-155 under South Pasadena. Same address and phone. Also in 1926, p. S-73 (¼-page ad; They have been issued a patent on their new koji making process).

Ad (¼ page) in The Japanese American Directory. 1930. p. S-41. Phone: ELliot 1367. A maker and seller of high quality koji. Special patented koji. Sold in an 8-kin container of Takara [Treasure] Koji. An illustration shows one or two containers of this koji. On each is written (in horizontal characters, from right to left), *hoshi koji* = dried koji. Note: A kin is a Japanese unit of measuring capacity / volume. 1 kin = 1.323 lb = 600 gm at this time. The 1st directory entry (p. S-53) contains the same name, address, and phone number. But the 2nd directory entry (p. S-171) contains the same address and phone number, but the company name is given as Kushiro Miso, Koji Seizô-sho.

657. **Product Name:** Koji, Miso.

Manufacturer’s Name: Oofu Koji, Miso Seizo-sho (Oakland Koji, Miso Manufacturing Co.)

Manufacturer’s Address: 283 7th St., Oakland, California. Phone: Lakeside 4373.

Date of Introduction: 1924. January.

New Product–Documentation: The Japanese American Directory. 1924. p. 99. Note: *Oofu* is the Japanese name for Oakland. Also in 1925, p. N-67. Also in 1926, p. N-67.

658. **Product Name:** Miso, Vinegar, Koji.

Manufacturer’s Name: San Jose Miso, Su, Koji Seizo-jo (San Jose Miso, Vinegar, Koji Manufacturing Co.).

Renamed Sa-shi (San Jose) Koji, Miso Seizo-sho in 1925.

Manufacturer's Address: North 7th and Jackson Streets, San Jose, California.

Date of Introduction: 1924. January.

New Product–Documentation: The Japanese American Directory. 1924. p. 143. No phone number given. Also in 1925, p. N-114. Renamed Sa-shi (San Jose) Koji, Miso Seizô-sho. Jackson & North 7th St. Phone: S.J. 1015. Also in 1926, p. N-111.

659. Loew, Oscar. 1924. The soy bean, a superior crop. *Porto Rico Agricultural Experiment Station, Agricultural Extension Notes* No. 64. p. 1-2. Jan. 15.

• **Summary:** “The soy bean originated in Eastern Asia and has been introduced during the past 30 years into different countries of the world. It can be grown successfully even in a rather poor soil, in the absence of nitrogenous manure, provided the specific root-nodule bacteria are present. This plant is far superior to other leguminous crops, even those very rich in protein, as the lupin, which it equals in protein and highly surpasses in fat content. In fact, the soy bean is richer in fat than all other leguminous crops and is, therefore, sometimes called the oil bean. The soy bean does not contain alkaloids and bitter tasting matters like the lupin...”

A table compares the nutritional composition of the pea, common bean, lupin, and soy bean. “From the analyses it would appear to be of great advantage for the people of Porto Rico to replace the common bean now serving as an essential part of the daily food, by the soy bean, it providing a higher percentage of protein and fat... Since the Soy bean needs prolonged boiling until it reaches a sufficient degree of softness, it is best soaked for a day in water to which some soda and common salt are added (about a teaspoonful of each to half a liter) followed by washing two to three times with fresh water and then boiling for an hour or so. The taste of this dish is very agreeable.

“In Japan the soy bean serves for several preparations, called ‘tofu,’ ‘yuba’ and ‘miso,’ which might be prepared in Porto Rico. Also, a dressing or condiment similar to the English Worcestershire sauce, is prepared from the seeds.” The preparation of tofu is described. It is “generally fried like cakes and represents an excellent food.”

“The milky liquid can also doubtless be used as a suitable nutrient, but it can never replace the mother’s or cow’s milk for children, since the lime content is exceedingly small and the protein differs widely from the casein of the milk.

“In our trials with soy beans at the Experiment Station, Mayaguez, the results at first were disappointing. This was found to be due to the fact that the soil was not inoculated with the proper bacteria for assimilating nitrogen for the roots. We now have inoculated soil, and before planting on ground new to this crop inoculating material should be secured from the Station for mixing with the seed at the

time of planting. When the soil is once inoculated it will remain so for all succeeding crops.”

Note: Who was Dr. Oscar Loew and how did he learn about soyfoods? From 1897 to 1906 he was a Professor of Agricultural Chemistry at the Imperial University of Tokyo, Japan, where he wrote articles about soy sauce, tofu, soymilk, and yuba. In 1911 he was in Munich, Germany, where he wrote an article about soymilk. When he speaks of “our trials with soy beans at the Experiment Station, Mayaguez,” he seems to indicate that he was living at the Station in Porto Rico in about 1924. Address: Mayaguez, Porto Rico.

660. Faber, Sandor. 1924. A szójabab jelentősége és termelése [The significance and cultivation of the soybean]. *Gazdasági Lapok (Agricultural Papers)* 5:49. [Hun] Address: Hungary.

661. Kodama, Renichi. 1924. Nature of the oil of soy bean miso. *Industrial and Engineering Chemistry* 16(5):523. May.

• **Summary:** This article begins: “Miso, a soy bean paste made by fermentation, is one of the most staple and nutritious food products of Japan. All the people like it, and it is used as a soup stock and seasoning in every home.” Miso is made from polished rice fermented with *Aspergillus oryzae*, mixed with steamed soy beans, salt, and water. The yearly consumption amounts to about 400,000,000 kan (1 kan = 8.27 pounds), and its value is about 360,000,000 yen, or \$180,000,000. There are two varieties of miso—the Edo or Tokyo miso, and the Sanshu or Haccho miso.

The preparation of both types of miso is described and the properties of the extracted oil studied. “The Sanshu miso is produced chiefly in the central part of Japan. It is made by inoculating the steamed soy bean with Koji mold and mixing with salt and water. This is also packed down under weights and kept for 1 or 2 years to ferment. The result is a dark brown paste with a salty taste.”

The oil was extracted from the vacuum-dried miso of the two different varieties. Tables show: (1) The composition of “Edo miso” and “Sanshu” miso—in terms of the amount of rice, soy beans, salt, and water used to make each. (2) The properties of miso oils for the two types of miso. (3) The constants of soy bean oil, including specific gravity, melting point, solidification point, acid value, saponification value, iodine value, Hehner value, and R.M. value [Reichert-Meissl value].

The appearance of ordinary soy bean oil and of the oil of soy bean miso is practically identical. The decolorization of the oil with animal charcoal materially altered the above characteristics; the iodine value was greatly decreased, and the saponification and Hehner values were increased, the oil becoming nearly solid. The miso oil shows a greater

Reichert-Meissl value and a smaller iodine value than soy bean oil.

Note: This is the earliest English-language document seen (March 2009) that uses the term “soy bean paste” to refer to miso, or that mentions “Edo miso” or “Sanshu miso.” Address: Iwasaki Food Research Lab., Tokyo, Japan.

662. Nishiwaki, Yasukichi. 1924. Soja-Bereitung mit *Oidium lupuli*, *Aspergillus oryzae*, und *Rhizopus japonicus* [Preparation of soy sauce with cultures of *Oidium lupuli*, *Aspergillus oryzae*, and *Rhizopus japonicus*]. *Zentralblatt fuer Bakteriologie. Series 2.* 63(1/8):28-30. Nov. 27. [2 ref. Ger]

• **Summary:** The author reports experiments concerning the production of soy sauce using three different types of mold: *Oidium* [one of the early names for *Neurospora* before the sexual stage was described in 1927], *Aspergillus* (the mold generally used in soy sauce production in Japan), and *Rhizopus* (the mold widely used to make tempeh). Surprisingly, the soy sauce fermented with *Oidium* was considered to be the best quality. It can also be used to make good quality miso. The quality of soy sauce made with *Rhizopus* molds was considered to be poor, and the yield of soy sauce was low. Onchom is not mentioned. Address: Professor, Technischen Hochschule zu Osaka, Japan.

663. Nishiwaki, Yasukichi. 1924. Biologische Untersuchungen ueber den Koji-Pilz des Okazaki-Hatchomiso-Koji und der Kaboch-Bana des Tome-Koji [Biological investigations on the koji mold of Okazaki Hatcho miso koji and the “orange flowers” of “tome koji”]. *Zentralblatt fuer Bakteriologie. Series 2.* 63(1/8):25-28. Nov. 27. [2 ref. Ger]

• **Summary:** “On Tome-Koji, a type of koji produced during the warmer times of the year, one can often observe that the surface is covered with a red- to reddish-yellow mycelium of mold. Because of its yellowish-red [orange] coloring, which is reminiscent of the Japanese cucurbit [pumpkin] named Kabocha, this koji is usually called *Kabochabana* (“Kabocha flower”). Japanese koji manufacturers ascribe no significance to the appearance of this mold and consider it harmless since the quality of the Tome or Miso made from this koji is not found objectionable. In the production of koji for Okazaki Hatcho Miso, a large quantities of this yellowish-red mold appear and, in fact, the manufacturers consider this type of koji as the best, since the Okazaki Hatcho miso made from it is regarded as the best.

“In 1911, through the friendliness of manufacturers Aoki, Hayakawa, Hattori, and Ito, I obtained samples of *Kabochabana*, which I investigated. I became convinced that the mold in question was a type of fungi imperfecti, the *Oidium lupuli* Matthews & Lott = *Monilia sitophila* Mont. (Saccardo).” Note: The genera *Oidium* and *Monilia* were later renamed *Neurospora*.

The author concludes that this mold is especially found on Hatcho miso koji. He notes that in 1901 Went reported that in Java, this mold plays an important role, because of its enzymes, in the production of ontjom, a good-tasting cake made by fermentation of peanuts. Address: Prof., Technischen Hochschule, Osaka, Japan.

664. Cullison, W.V. 1924. The soy bean and commerce. *Oil Miller* 20(3):17-18, 20-22. Nov. Reprinted from The Staley Journal.

• **Summary:** Contents: Introduction and history. Three methods of producing soybean oil: Old hydraulic method, extraction process using “light petroleum naphtha,” and by the Anderson Expeller mill (continuous process). Crude soy bean oil. Use of oil in hard soaps and paints. Soy bean meal: Soy bean flour as food. Food uses of soy beans in China and Japan: Soy bean or vegetable milk, tofu or soy bean curd, miso or soy bean paste, soy bean sauce (shoyu). Soy beans and the farmer: North Carolina led in acreage until 1923, when Illinois gained first place. Growing soy bean. history of the soybean, uses, methods of oil production, and uses for the oil and meal.

“The soy bean has been grown in the United States since 1804, under the names of Coffee bean, Japan pea, Soja, Soy, Soya and Stock pea. During the period of the Civil War the soy bean was used rather extensively in the southern States as a coffee substitute. For a considerable while seedmen sold certain varieties under the names Coffee Berry and Coffee Bean.

Note 1. This is the second earliest document seen (Nov. 2005) which states that soybeans were used as a coffee substitute during the Civil War in the United States.

“The demand and market for soy bean products, especially the oil, is here and now. Whether or not this demand will be filled by American grown beans, or by beans and oil imported from Manchuria depends upon the American farmer.”

A map shows where soy beans are produced in the USA. A flow sheet shows the basic steps in making soy bean oil, meal, and other chief products. A photo shows a line of expellers, powered by overhead belts, as they “extract soy bean oil.”

Note 2. This article says nothing about the A.E. Staley Manufacturing Company’s work with soybeans. Address: Research Chemist, A.E. Staley Mfg. Co., Decatur, Illinois.

665. **Product Name:** Maruman Shoyu, and Marua Shiro Miso.

Manufacturer’s Name: America Honolulu Shoyu K.K.

Manufacturer’s Address: Banyan St., Honolulu, Oahu, Hawaii.

Date of Introduction: 1924.

New Product–Documentation: Nihei. 1978. *Nippon Jozo Kyokai Zasshi.* 73(7):542-49. “Hawaii ni okeru Nihon-shu,

miso, shoyu no rekishi.” States that the company was founded in about 1924 by a merger of the Honolulu Shoyu Co. (1906, N. King St.) and the America Shoyu Jozo K.K. They are still in business, presently making miso.

666. Laxa, Otakar. 1924. Syrarstvi: Popis výroby a upravy syra jako potraviny [Cheese production: Production of cheese and its productivity as a food. 2nd ed., revised and enlarged]. Prague: Ceskolovenske Podniky Tiskarske a Vydavatelске. 539 p. See p. 522-24. Series: Zemedelska Knihovna, edited by Prof. Dr. Alois Velich. [Cze]

• **Summary:** In the section titled “Vegetable Cheeses” (p. 522-24), the author discusses tofu, natto, kori-tofu [dried frozen tofu], and miso. Address: Prof., Dr., Czechoslovakia.

667. Minami Manshû Tetsudô K.K. Kôgyô-bu. Nômu-ka. [South Manchuria Railway Co., Industrial Div. Bureau of Agriculture]. 1924. Daizu no kakô [Soybean processing]. Dairen, Manchuria: SMRC. 777 p. 30 cm. (Sangyo Shiryo 21). [250 ref. Jap]

• **Summary:** Name of company with diacritics is: Minami Manshû Tetsudô K.K. Kôgyô-bu. Nômu-ka. This important, major work was written by Yoshitane Satô. Contents: Photos (on unnumbered pages at the front of the book) show 16 scenes of soybean transportation, storage, and processing in Manchuria, as follows: (1) Mule drivers whipping mules trying to pull carts loaded with large sacks of soybeans over muddy roads. (2) Cylindrical osier storage bins for soybeans. (3) Row upon row of sacks of soybeans piled high in storage near docks. (4) Soy sauce being made in a courtyard; each earthenware jar is covered with a woven conical lid. (5) The inside of a huge and modern soy sauce plant. (6) Wooden kegs and glass bottles of Yamasa shoyu. (7) Soy sprouts growing in round woven baskets. (8-11) Soy oil being pressed using vertical screw presses [as an alternative to hydraulic presses]—four views. (12) Boilers used in a soybean mill. (13) A wooden barrel of soybean oil being sealed. (14) Soy oil packaged in many small containers, each surrounded by a wicker basket. (15) Round soybean cakes stacked high on railway flatcars. (16) The inside of a modern soy oil factory.

Contents: 1. Current status of soybean production and consumption: A. Production: Overview (p. 2), Japan (p. 4), Korea (p. 12), Manchuria (p. 16), China (except 3 eastern provinces, but including Eastern Inner Mongolia, p. 31), USA (p. 34), British colonies (p. 37), European countries (p. 40). B. Consumption: Japan (p. 41), Korea (p. 52), Manchuria (p. 57), China (p. 59), Dutch East Indies (Indonesia, p. 60), USA (p. 61), European countries (p. 63).

2. Characteristics of soybeans: A. From a physical sciences viewpoint (p. 67): Structure (overview, cotyledons, hypocotyl, seed coat), contents of each system (p. 70), appearance (p. 73; color, gloss, shape, size, hilum (*fusuma*) color, young plumule leaf color, ratio of seed to seed coat).

B. From chemical viewpoint (p. 82): General composition, structure of each component (p. 109; protein, oil, carbohydrate, ash/minerals, vitamins). C. Appearance and relationship between oil and protein content (p. 126): Oil and protein color related to color, glossiness, shape, size, hilum color, young plumule leaf color. D. Evaluating soybean quality (p. 140): Overview, key points (sizes, shapes, colors, glossiness, hilum color, young plumule leaf color, ratio of seed coat to seed, dryness of seed, volume, weight, smell, mixing of different varieties, ratio of imperfect seeds, amount of other types of seeds), collection of materials for testing, testing and evaluating commercial soybeans.

3. Soybean usage and processing (p. 175). A. One view of main usage of soybeans. B. Nutritional value of soybeans as food (p. 183): Nutritional value of soy protein. C. Processed soyfoods (p. 208): Soy sprouts (p. 208), natto (*itohiki nattô*, p. 212, Hamanatto, p. 224), types of tofu (regular tofu [*nama-dôfu*, p. 226], *kori-dofu* or *koya-dofu*, p. 240, aburaage, p. 245, tofu curds [*tofu nô*, p. 247], hard tofu [*tofu-kan*, p. 247], fragrant hard tofu [*kô-kan*, p. 248], *senchô tofu*, p. 249, fermented tofu [*nyûfu* or *funyû*, p. 249]), *tofu-p'i* or yuba (p. 256), soymilk and artificial cow's milk, p. 259, soybean flour raw, or roasted (kinako, p. 263), shoyu (p. 266; overview of miso and shoyu, Japanese traditional regular shoyu, p. 267, Japanese traditional special shoyu and tamari, p. 269, Chinese soy sauce, p. 272, recent shoyu research and development, p. 274), miso (p. 280; Japanese traditional regular miso, Japanese traditional special and processed miso, p. 282, Chinese miso, recent miso research and development, p. 285). D. Soybeans as feed or fodder (p. 287; green soybeans as feed, p. 290): Fresh forage, dried forage or hay. E. Soybeans as manure or fertilizer (*hiryô*, p. 297; in the Kaijô area of Manchuria, have been roasted and steamed, and mixed with compost, and used for green manure (*ryokuhî*) or soybean cake (*daizu kasu*). This method has also been used in the northeastern provinces (*Tohoku chiho*) of Japan in rice fields). F. Soybeans as oilseeds (p. 302). G. Use of soybean protein in industrial products (p. 304).

4. The soy oil extraction industry (p. 305): A. Methods of removing the oil (origins, traditional methods, hydraulic pressing, extraction method, p. 340). B. Advantages and disadvantages of each method (p. 348). C. The soy oil industry in Manchuria (p. 357): History of development, important places for soy oil on the Manchurian Railway, economic condition of the Manchurian oil industry (p. 420), oil extraction in Japan (history, p. 437, commercial factories, p. 442, development of these factories, p. 451).

5. Soybean meal or cake and its composition (p. 464). A. The varieties of soybean meal or cake and the composition of each. B. Evaluation of quality (p. 473). C. Soybean meal or cake as a fodder (p. 478): Feeding value and digestibility, incorrectness of the theory that there are bad effects from

feeding soybean meal or cake (p. 479). D. Soybean meal or cake as a fertilizer (p. 490). E. Soybean meal or cake as food (p. 504): Use as a raw material for shoyu production (p. 506), use to make soy flour (p. 509). F. Soybean meal or cake as a source of protein in industrial products.

6. Soy oil and its processing (p. 526). A. Characteristics of soy oil: Composition, physical characteristics (p. 535), chemical characteristics, testing and evaluating soy oil (p. 564), the quality of commercial soy oil products (p. 577). B. Refining soy oil (p. 587). C. The use and processing of soy oil (p. 631): Overview, refined soy oil as a food, substitute for salad oil, or for deep-frying oil, as an illuminant, as a cutting oil, lard substitute, margarine, in paints, soap, hardened oil, for waterproofing, substitute for petroleum oil, glycerin, fatty acids, stearine.

7. Exports and imports of soybeans, soybean meal or cake, and soy oil (p. 708). A. Manchuria. B. Manchurian exports. C. China. D. Japan. E. Korea. Appendix: Bibliography of soybeans (Japanese-, German, and English-language works; p. 748). List of photos.

Note 1. This is the earliest Japanese-language document seen (April 2001) that mentions fermented tofu, which it calls *nyûfu* or *funyû*.

Note 2. This is the earliest Japanese-language document seen (Feb. 4) that uses the term *itohiki nattô* to refer to natto. Address: Dairen, Manchuria.

668. Japanese American News Inc. / Nichibei Shinbunsha. 1925. Nichibei jûshoroku [The Japanese American directory. No 21]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Published Jan. 1 by Nichibei Shinbunsha. Address: 650 Ellis St., San Francisco, California. Phone: Prospect 238 or 239.

669. **Product Name:** Miso.

Manufacturer's Name: Ooshima-ya Koji, Miso Seizo-sho [Ooshima Koji & Miso Manufacturing Co.].

Manufacturer's Address: 1627 3rd St., Sacramento, California. Phone: Main 5155-J.

Date of Introduction: 1925. January.

New Product–Documentation: The Japanese American Directory. 1925. p. N-157, N-164. 1627 3rd St., Sacramento, California. Phone: Main 5155-J. Ad (1/8 page) in 1925, p. N-165. All in Japanese. Ooshima-ya Shoten. Maker of koji and shiro miso (sweet white miso). Science applied and quality guaranteed. Ad (1/8 page) in 1926, p. N-151. Also in 1926 directory, p. N-155. But phone number is now Main 3274-W.

670. Ochse, J.J. 1925. Tropische groenten. Geteelde en in 't wild groeiende gewassen, die door de Indische bevolking worden gegeten [Tropical vegetables: Cultivated and wild

plants eaten by the Indonesian people]. Weltevreden: Uitgave en Druk Volkslectuur. 215 p. July. See p. 92-95. Illust. Also listed as series #686. [Dut]

• **Summary:** This is the original Dutch-language edition, which was revised in 1931 as *Indische Groenten* and translated into English in 1931 as *Vegetables of the Dutch East Indies*. Ochse lived 1891-1970. After describing the plant, the author notes that there are two varieties of soybeans: one is yellowish brown and the other is black. The first is used to make tempeh and tofu; the second to make kêtjap. Very popular soy products in the Indonesian market are tofu and firm tofu (*tahoe* and *takoöh*). Also discusses *tao tjo* (Indonesian-style miso; has a consistency like paste or porridge), *tao dji* (soy nuggets), *témpé*, and *ontjom*. The process for making each of these soyfoods is described.

Illustrations show: (1) A young soybean plant with leaves and pods (half size).

(2) A bamboo scaffolding or curing frame, in tripod form with 3 horizontal supports, used for drying bunches of soybeans.

Note: This is the earliest document seen (April 2001) that contains the word *takoöh*. Address: Buitenzorg [Bogor], Java.

671. Kaku, T. 1925. [Analysis of miso of Korea]. *Chosen Ikai* 55:317-; 56:495-. [Jap]*

672. Yamada, Masakazu. 1925. Yûki enki bunri ni "nafutooru" ô no ôyô ni tsuite ("jiamin" no shin bunri-hô) [Application of naphthol yellow to the isolation of organic bases (a new method for isolation of diamine)]. *Nippon Jozo Kyokai Zasshi* (*J. of the Society of Brewing, Japan*) 20(12):23-30. Continued in 1926. [Jap] Address: Jozo Shikensho Gishu, Japan.

673. Carqué, Otto. 1925. Natural foods: The safe way to health. Los Angeles, California: Carqué Pure Food Co., Inc. 359 p. Illust. Index. 20 cm.

• **Summary:** Contents: Part I: Fundamental facts about food and health. 1. The old and new conceptions of the cause of disease. 2. Drug medication, vaccination, and serum therapy. 3. Nature's healing factors: Sunlight, fresh air, exercise, rest, water, the importance of natural foods for life and health, why denatured foods (white flour, refined sugar, candies, etc) are injurious. 4. The constituents of food considered in the light of modern physiology and biology: Proteins, carbohydrates, fats and oils, cellulose, fruit acids are organic acids, organic salts, the alkaline or base-forming elements (iron, sodium, calcium, magnesium, potassium, manganese, and aluminum), the acid-forming elements (phosphorus, sulphur, silicon, chlorine, fluorine, iodine, bromine, arsenic), the vitamins. 5. Rational soil culture essential for the production of superior foods. 6. The

conservation of vital force (stimulants, narcotics, elimination of waste, quality of foods, prolongation of life, alkaline and acid-forming foods). 7. Why the calorie theory is misleading. 8. Fruit, man's best friend (the fruit of the tree, sulphured and unsulphured fruits). 9. Nuts–Nature's most concentrated foods. 10. Vegetables–Nature's blood purifiers (Great hygienic value of green leaves, proper soil fertilization most essential to vegetable culture, loss of organic salts in cooking, classification of vegetables–5 classes). 11. Cereals and legumes (Cereals falsely called "The staff of life," whole grain products are the best, the great waste of food elements by modern milling processes, legumes–an important food). 12. Milk and dairy products (Milk not a perfect food for adults). 13. Meat–the least essential and most expensive of all foods (the vegetarian alternative).

Part II: Practical dietetics. 14. How to live well on less food. 15. The feeding of infants and children (lactation, almond milk, soy bean milk). 16. The rational preparation of foods. 17. Rational food combinations (importance of simplicity of eating, the mono-diet and its advantages). 18. Simple and well balanced menus for all seasons. Appendix: Tables and statistics. A1. Analyses showing the amount of sodium, calcium and iron in foods. A2. Amount of food materials necessary to supply one ounce of protein. A3. Amount of calories contained in one pound and one ounce of 200 food products. A4. Average time required for gastric digestion of foods. A5. Annual consumption of sugar, soft drinks, salt, spices, coffee, tobacco, drugs, alcohol, etc., in the United States. A6. Regulations for the enforcement of the Food and Drug Act. Important information about chemical preservatives and artificial colors.

The Preface (and the book) begins: "Two powerful superstitions are impeding the welfare and progress of the human race. The one is the conviction that disease is an entity, a mysterious something that attacks us without warning from the outside, either in the form of germs or as inclemency of weather. The other–perhaps the more harmful of the two–is the belief that for each disease specific remedies must be found, such as drugs, serums, vaccines, glandular extracts, etc., and that, when we are afflicted, we have to submit to a specialist's treatment or even to the affected parts or organs."

The average individual tries "to shift the responsibility for his sins of omission or commission to some imaginary cause, rather than to hold himself accountable for the violation of nature's laws." There is "almost universal ignorance of the fact that disease is merely an effort on the part of nature or the universal life force to restore normal conditions in the organism. Our present system of commercialism has taken advantage of this situation by misleading people through clever advertising to persist in their errors in order to maintain the demand for drugs and serums, proprietary medicines,..."

Chapter 11, "Cereals and Legumes," briefly discusses many types of soyfoods–soy sprouts, milk, flour, tofu, soy sauce, and oil (p. 142). Page 196 discusses the use of soy bean milk and almond milk for feeding infants and children. Chapter 16, titled "The Rational Preparation of Foods," contains a long and detailed section on soy beans (266-71), with subsections on boiled soy beans, soy bean milk, tofu, soy sauce, and soy bean sprouts. Home preparation of each is described. Miso, yuba, natto, and hamananatto are also mentioned (p. 268). Soy-related recipes include: Baked soy beans (p. 269). Soy bean loaf. Soy bean croquettes. Soy bean bread (p. 270).

Chapter 9, about nuts, states: "The making of nut butters is not a difficult process. At present peanuts and almonds are chiefly used for this purpose... The blanching of peanuts and almonds is now done on a large scale by special machinery, and the blanched nuts can be procured in nearly all the larger cities." Break the blanched nuts into small pieces by running them through the Climax Grater or a food chopper. Put them into a moderately hot oven for a few minutes to make them dry and crisp, then run them through a tightly adjusted nut mill to create a "smooth, palatable nut butter." A large table (p. 122) compares the composition of various nuts and nut butters (almond butter, peanut butter) with meat, cheese, eggs, cow butter, and whole wheat bread. "The pecan contains the largest amount of fat, about 70%, closely followed by the hickory nut, brazil nut, filbert and pine nut, which all contain over 60% of fat. The pignolia imported from Spain ranks highest in the amount of protein, containing nearly 34%; the peanut comes next with 29.8%; the butter nut, almond, pistachio, all contain over 20% protein, excelling the best cuts of meat in that respect. The almond does not contain any starch as is, therefore, the nut best suitable for infants, especially in the form of almond milk." Chufa contains 3.5% protein and 31.6% fat.

The section titled "Fruit and nut confections" (p. 212-15) discusses and has recipes for natural candies and confections.

The section titled "How the American people deplete their vitality by their favorite poisons: The tremendous waste of our material wealth" (p. 328-43) discusses (p. 338-43): The amount spent in 1924 on each of 15 "adulterated foods and drinks and of poisonous stimulants and narcotics" (\$5,040 million) compared with the amount spent on foods and vegetables (\$850 million, or 16.8% as much). Refined sugar. Coffee. Tobacco. Condiments, etc. Alcoholic beverages. Drugs. Regulations for the enforcement of the Food and Drug Act (due to untiring efforts of Dr. Harvey W. Wiley, former chief of the Bureau of Chemistry, USDA). Sodium benzoate and sulphur dioxide. Salt. Saltpeter. Boric acid and borax. Saccharine. Mineral and coal tar dyes. Laxity in enforcement of the Pure Food Law.

On pages 344-47 is information about the Carque Pure Food Company (incorporated 1912) and its founder and

owner Otto Carque, including a brief biography of Otto, a list of leading Carque food products, and a full page photo of the company's new home at 729 Seward St., on 1 Oct. 1925 (2 story brick building).

The food products are arranged by groups: Fruits: Sun-dried and dehydrated, without bleaches or preservatives (Black mission figs, white Smyrna-type figs, prunes, dates, olives, raisins, apricots, peaches, pears). Nuts: Fresh, selected and unroasted (almonds, walnuts, Brazil nuts, pecans, pignolias, pistachios, peanuts). Confections: Of assorted fruits, nuts and honey, without sugar, salt, glucose or preservatives (delectables, fruit nuggets, Kandy-Andy). Stamina and laxative foods (Nut-Fruto, Prunola {prunes and olives}, fruit laxative). Nut butters: Ground from whole nuts, uncooked and unsalted (almond, nut cream, peanut). Cereals and products: Made from re-cleaned whole grain (wheat flour, yellow corn meal, brown rice, breakfast food, crackers). Miscellaneous (olive oil, strained honey, raw sugar, fig-cereal breakfast drink {instead of coffee}). Price list and descriptive circulars on request.

Note: This is the earliest English-language document (or book) seen (June 2004) with the term "Natural foods" in the title that also discusses soy. Address: Los Angeles.

674. Lecourt, Henri; Nachbaur, Albert. 1925. La cuisine Chinoise [Chinese cuisine]. Peking: Published by the authors. 141 p. (on double leaves-unnumbered). 26 cm. [Fre]

• **Summary:** The section titled "Sauces fermentés et condiments" notes that this 8th chapter is the indispensable complement to the preceding recipes, for it discusses the condiments and fermented sauces which are widely used in Chinese cuisine and which are included in almost all the recipes in this book. Here you will find the recipe for *mienn tsiang* (CC), a sauce of wheat flour fermented with salt, more commonly known as *t'ienn mi tsiang* [tien mian jiang].

Each person should be able to make the famous *ts'ing tsiang* (CC), also known as *tsiang yeou* [jiang-you; soy sauce], which is used in almost all the recipes mentioned.

The generic sauce is *tsiang* (CC) [jiang], which refers to a fermented sauce of soya or beans, a condiment used for seasoning. This product is the base of all fermented things.

675. Japanese American News Inc. / Nichibei Shinbunsha. 1926. Nichibei jûshoroku [The Japanese American directory. No 22]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements.

Published Jan. 1 by Nichibei Shinbunsha. Address: San Francisco, California.

676. Yamada, Masakazu. 1926. Yuki enki bunri ni nafutooru o no ôyô ni tsuite (jiamin no shin bunri-hô) [Application of naphthol yellow to the isolation of organic bases. (A new method for the isolation of diamines)]. *Nippon Nogeikagaku Kaishi* (*J. of the Agricultural Chemical Society of Japan*) 2(4):246-67. English abstract bound in the back. Vol. 2, No. 4. p. 39-41. [10 ref. Jap]

• **Summary:** The author applied to sake and shoyu the method proposed recently by A. Kossel and K.E. Gross (*Z. Physiol. Chem.*, 135, 167-74, 1924) for the isolation of arginine and aphthol yellow. He was able to obtain much crystalline precipitate in the shoyu, but none in the sake. This precipitate was easily recrystallized from boiling water in beautiful rosettes, which were found to be the mixture of the double salts of putrescine and cadaverine with the naphthol yellow. The precipitation in shoyu was caused by "salting out." The author also used naphthol yellow to precipitate bases (cadaverine picrate) from tamari shoyu, Hatcho miso, inaka miso, and natto. Address: Nôgaku-shi, Japan.

677. *Jozogaku Zasshi* (*J. of Brewing, Osaka*). 1926. Shojo: Seimai, daizu, komugi, mugiyasu, ômugi, seishu, shoyu, miso, tsukemono [State of commerce: Prices of rice, soybeans, wheat, rye, barley, refined sake, shoyu, miso, pickles]. 4(1):88-91. Aug. [Jap]

• **Summary:** Soybeans are used mainly in making tofu and fermented foods. Gives the price of soybeans at various places in Japan. Likewise gives prices of shoyu and miso at various locations.

678. *Jozogaku Zasshi* (*J. of Brewing, Osaka*). 1926. Shojo: Seimai, daizu, komugi, mugiyasu, ômugi, seishu, shoyu, miso, tsukemono [State of commerce: Rice, soybeans, wheat, rye, barley, refined sake, shoyu, miso, pickles]. 4(4):88+. [Jap]*

679. Iwasaki, K. 1926. Muon shitsu de kome kôji jikayô shôyu miso seizô-hô [Making rice koji, shoyu, and miso without using warm incubation rooms]. *Dainippon Nokaiho* (*J. of the Agriculture Society of Japan*) No. 549. p. 47-49. [Jap]

Address: He is head of the village. Kagawa-ken Sanpo Gunasa Mura.

680. Yamada, Masakazu. 1926. Yûki enki bunri ni "nafutooru" ô no ôyô ni tsuite ("jiamin" no shin bunri-hô. II.) [Application of naphthol yellow to the isolation of organic bases (a new method for isolation of diamine)]. *Nippon Jozo Kyokai Zasshi* (*J. of the Society of Brewing*,

Japan) 21(1):40-42; 21(2):23-33; 21(3):42-45; 21(4):27-31; 21(5):19-22. [11 ref. Jap]

Address: Jozo Shikensho Gishu, Nôgaku-shi, Japan.

681. Yamada, Masakazu. 1926. Yûki enki bunri ni “nafutooru” ô no ôyô ni tsuite (jiamin no shin bunri-hô) [Application of naphthol yellow to the isolation of organic bases (a new method for isolation of diamine)]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 94. p. 302-41. [11 ref. Jap]

Address: Jozo Shikensho, Gishu.

682. Allen, Paul W. 1926. Industrial fermentations. New York, NY: The Chemical Catalog Co., Inc. 424 p. See p. 123-27. Chap. 14, Soy-Bean Sauce Manufacture. [10 ref]

• **Summary:** Chapter 14. Soy-Bean Sauce Manufacturer. The chapter is chiefly a series of quotations from M. Church of the United States Department of Agriculture, on the preparation of soy sauce and the possibilities for the industry in the U.S. Other authorities are cited on the industrial applications of the fungus used in soy sauce. Address: Prof. of Bacteriology, Univ. of Tennessee.

683. Elsdon, G.D. 1926. The chemistry and examination of edible oils and fats, their substitutes and adulterants. London: Ernest Benn, Ltd. 521 p. See p. 188-95. Chap. XI, Soya Bean Oil. Also p. 98, 150. [14 ref]

• **Summary:** Contains quotations from various writers on the uses of the plant (M. Toch), the commercial uses and methods for obtaining oil and protein (Satow), chemical composition of the oil, composition of hydrogenated oil, and the nature of “soy” and “saké” oils and of soybean miso oil. Additional references are grouped at the end of the article. Many of the references in the article are from the *Journal of the Society of Chemical Industry*. Address: Lancashire County Analyst, England.

684. Mayerhofer, Ernst; Pirquet von Cesanatico, C. eds. 1926. Lexikon der Ernahrungskunde [Dictionary of dietetics]. Vienna, Austria: J. Springer. viii + 1205 p. Illust. 25 cm. [Ger]*

• **Summary:** Included in the long list are: Akamiso, miso, shiromiso, tofukasu [okara], daizu [soybeans], fu [dried wheat gluten cakes], kingyo-fu, kiri-fu, kiri-mochi [frozen and dried rice cake], ame [malt extract], mirin, aburage [tofu fried in vegetable oil], natto–Bohnenkäese, Tofu–Sojatopfen, Tonyu–Sojamilch [soymilk], azuki [small red beans], kwansen-fu, kinako–Sojabohnenmehl, geröstet, amasake [amazake]–unvergorener Sake, umeboshi, koritofu [frozen and dried tofu], midzuame [soft ame = rice syrup], shoyu–Sojasauce, yuba–eine Bohnenspeise. Note that a number of these terms are Japanese.

Note 1. This is the earliest German-language document seen that mentions amazake, which it calls “amasake.”

Note 2. This is the earliest document seen (Aug. 2002) in any language that uses the term *tonyu* (or *tônyû* or *tonyû*) to refer to soymilk.

685. Saito, Akio. 1926. [Chronology of soybeans in Japan, 1900 to 1926, last half of the Meiji period and all of the Taisho period] (Document part). In: Akio Saito. 1985. Daizu Geppo (Soybean Monthly News). Feb. p. 12-14. [Jap]

• **Summary:** 1901–Crushing of soybeans starts in Japan. Owada Seisakusho of Tsuruga, Fukui prefecture, Japan, starts making soy oil and soybean cakes using the press method (*assaku-ho*).

1901–Nakahara Kota is issued a patent on his process for making dried-frozen tofu indoors in a freezer (*jinko kôri-dofu*). This makes it possible to produce a good-quality product year round. This year there are 453 makers of dried-frozen tofu in Nagano. Nagano prefecture encouraged production of this product during the Russo-Japanese War as a side home industry.

1901–Soybean production in Japan reaches 525,000 tonnes, topping 500,000 tonnes for the first time.

1905–After Japan’s victory in the Russo-Japanese War, it is said that maybe, because of the victorious mood, tofu makers start to blow a horn while selling tofu.

1905–At about this time, soybean cake (*daizu kasu*) passes fish cake to become the main fertilizer for crops in Japan.

1905–Shin Sawamura (lived 1865-1931) discovers the main natto bacteria and names it *Bacillus natto* Sawamura.

1906–Neda Tadamasu of Akita prefecture develops a new type of soybean. Named the Akita, it is a cross between Shirosaya and Itoi’s Ani.

1907 March–Nisshin Mamekasu is founded (initial capitalization is 3,000,000 yen). The next year its soybean crushing plant in Dairen, Manchuria, starts to operate. In 1918 the company merged with Matsushita Mamekasu to become Nisshin Seiyu K.K.

1908–At about this time the retail price of tofu in Tokyo is 1 *sen*. The average cake of tofu weighs over 100 monme (1 monme = 3.7656 gm or 0.1325 oz), so over 376 gm. In 1982 the average price of tofu is 100 yen per cake and the average cake weighs 300 gm.

1914–The Mogi Saheiji family in Noda starts to sell shoyu in 1-sho bottles (1 *sho* = 1.805 liters or 3.81 pints). Before this time a ceramic sake bottle (*tokkuri*) was used.

1914–Yamada Hikozauro of Nagano prefecture succeeds in making dried-frozen tofu (*Koya-dofu*) for the first time in the *Shimi-dofu* area.

1915–From this year until 1919, the soybean oil industry in Japan is in a period of prosperity. In 1914 Japan produces 7,105 tonnes of soy oil and 92,325 tonnes of soybean cake. Just 5 years later, in 1919, these figures have risen about 13-fold to 30,658 tonnes of soy oil and 353,288 tonnes of

soybean cake. Soybean cake becomes very widely used in Japanese agriculture.

1918—The mayor of Tokyo, Tajiri Inataro, recommends that people eat low-fat soybean cake cooked with rice (*mamekasu meshi*) to protect themselves from the rapidly increasing price of rice; he himself eats this dish every day. Hiroetsu? Takako (a woman educator, lived 1867-1949) cooked soybean cake and rice (*mamekasu gohan*). Dr. Saei Tadasuke (1876-1959, a nutritionist) introduces an inexpensive meal (it costs 3 *sen* 5 *rin* for 5 people) using tofu and fish bones for breakfast and dinner at the Inexpensive But Nutritional Cookery Seminar (*Eiyo Anka Ryori Koshukai*). This year 30-50% of Japanese don't have enough to eat. The demand for beef tendons and okara increases. The price of high-quality meat increases faster than the price of tofu.

1919—Artificially cultured pure-culture natto starts to be used. Hanzawa Jun of Hokkaido University (1879-1972), using this method, invents a new "Sanitary Natto Container" (*Eisei Natto Yoki*) made of thin slabs of wood (*kyogi*). He also founds the "Natto Container Improvement Association" (*Natto Yoki Kairyo-kai*)

1919—Soybean production in Japan reaches 502,200 tonnes, and soybean imports rise to 168,000 tonnes. Production of soybean oil reaches 8,853,600 gallons or 33,573,000 liters, equal to that of rapeseed oil.

1919—A machine or kit for making tofu or soymilk easily at home (*katei tony-ki*) is marketed.

1920—Soybean production in Japan reaches a record 559,000 tonnes.

1920—Tsugano Akisaburo of Tokyo invents a quick method for fermenting shoyu (*shoyu sokujo-ho*). By adding salt water to soybean koji to make moromi, he is able to make shoyu in less than 10 days.

1922 April—The oil production department of Suzuki Shokai [which went bankrupt in 1922] becomes independent and founds Hohnen Oil Co., Ltd. (*Hohnen Seiyu*).

1923 Sept.—The Great Kanto / Tokyo Earthquake (*Kanto Daishinsai*) strikes. 70% of the miso factories in the area are burned down, causing a shortage of miso. But miso makers in other parts of Japan use this opportunity to ship their miso to Tokyo, and the people of Tokyo come to realize the good taste of miso made elsewhere in Japan.

1924—Kodama Shizutoshi? (or Shintaro) invents another quick method for fermenting shoyu (*shoyu sokujo-ho*) using acid or alkali to hydrolyze soybeans or soybean cake to make shoyu.

Note: This is the earliest document seen (April 2001) that mentions shoyu made by acid hydrolysis. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

686. Takenobu, Y. 1926. Japan Year Book. Tokyo: The Japan Year Book Office. 626 + 162 p. Index.

• **Summary:** The total area of Japan proper is 147,652 square miles (382,861 square kilometers). Japan's population (as of Oct. 1925) was 59,736,704. A large area of Japan is very mountainous, and it is estimated that the cultivated area is about 6 million hectares. According to Prof. Shimizu of Keio University the population density per square kilometer of cultivated area in Japan is much larger than various European countries. Japan 969. Belgium 394. Italy 305. Netherlands 273. England 226. Germany 195. Switzerland 168. France 108. Spain 90.

In chapter 29, Agriculture, the section titled "Beans, potatoes and sweet potatoes" (p. 449) begins with a graph showing the production (in 1,000 koku; 1 koku = 180 liters) of these crops from 1921 to 1923, inclusive. Soybean production decreased from 4,261 koku in 1921 to 3,434 koku in 1923. The text continues: "Among subsidiary farm crops there is perhaps nothing that plays so important a part in the Japanese kitchen as soy beans. The three daily articles of diet for all classes, viz., soy [sauce], miso and tofu are manufactured with this bean either in part or wholly. The 'tofu' (bean curd) is one of the most popular articles of diet, being cheap and highly nutritious; the 'miso' makes Japanese soup and is used in various other ways. The 'soy' is indispensable in Japanese cooking. Then for extracting oils, as manure, and food for horses beans are equally important. The supply being insufficient, a large quantity comes in from Manchuria and Korea. In Japan, Hokkaido is the principal centre of the production. Red beans [azuki], also very extensively produced in the northern island, are used for making confectionery."

The section titled "Soy" [meaning shoyu or soy sauce] (p. 514) states: "For soy the prefecture of Chiba, which is contiguous to Tokyo municipality, heads all other places on the list as to output. Parched wheat mixed with salt and beans is a principal ingredient. The process is still far from scientific, requiring about 12 months before the liquid is ready for sale. It is also costly, as it does not much admit labor-saving appliances. To obviate these disadvantages have been tried several patented processes, but most of them have failed. In 1917 the leading soy manufactures of Chiba-ken combined and formed the Noda Soy Co., capital ¥7,000,000 p.u. with capacity of about 250,000 'koku' i.e. about 60 per cent. of the total output of the Prefecture."

A table (p. 514) shows production of sake, beer, and soy from 1919 to 1922 (year ending in March). Production of soy (in 1,000 koku) grew from 2,940 in 1919 to 3,268 in 1922. Address: Prof. at the Waseda Univ. and late of the "Japan Times".

687. Tetsudo Shounyukyoku. 1926. Shio satô shōyu miso ni kansuru chōsa [Survey concerning salt, sugar, shoyu, and miso]. Tokyo: Tetsudo Shoun'yū Kyoku. 1 vol. 23 cm. Series: Juyo Kamotsu Jokyō, no. 9. [Jap]*

• **Summary:** This is a Japanese government publication. Address: Japan.

688. Thom, Charles; Church, Margaret B. 1926. *The Aspergilli*. 1st ed. Baltimore, Maryland: Williams & Wilkins Co. ix + 272 p. See p. 64, 198-207. [250* ref]

• **Summary:** In this work, with its good bibliography, the authors “sought to bring together all of this taxonomic literature, as published before that date, and to present a critical opinion as to the proper relationship of the species described, whether retained in the genus or placed elsewhere. Some 350 names were thus accounted for, but the actual number of species accepted as known in culture or probably determinable from existing literature was given as 69 (p. 252). These were more or less arbitrarily considered in 11 groups.”

Chapter 6 titled, “Enzymic and fermentative activities of Aspergilli and their industrial significance” (p. 58-75) includes sections on koji (incl. Takamine, Taka diastase), diastase, protease, soy fermentation (incl. soy sauce), and miso (with 7 references). Address: Microbiological Lab., Bureau of Chemistry, USDA.

689. Togano, Meijiro. 1926. *Saishin shōyu miso jōzō-hō* [Principles of modern shoyu and miso brewing]. Tokyo: Jōzō Hyōron-sha. 1052 p. [Jap]*

690. Wagner, Wilhelm. 1926. *Die chinesische Landwirtschaft* [Chinese agriculture]. Berlin: Paul Parey. xv + 668 p. See p. 311-20. Illust. No index. 25 cm. [214 ref. Ger]

• **Summary:** The section on legumes contains a long subsection on the soybean (p. 311-20). Contents: Distribution in China. Types and varieties of soybeans. Chemical composition. Techniques of soybean cultivation. Utilization of soybeans: Chiang (*djang*; *Bohnensauce* [like soft miso]), soy sauce (*djang-yo* or *djang-yu*), and tofu (*dou-fu*; *Bohnenkäse*), firm tofu (*dou-fu-gan*; *getrocknete Bohnenkäsekeks*), yuba (*dou-fu-pi*; *Bohnenkäsehaut*), frozen tofu (*dung-dou-fu*; *gefrorener Bohnenkäse*), smooth soymilk curds (*dou-fu-nao*; *Bohnenkäsegehirn*), soy sauce residue (*djang-yu-dscha*; *Rueckstände der djang-yu*), tofu residue (*dou-fu-dscha*; *Rueckstände der dou-fu*; *okara*), soybean oil (*dou-yu*; *Bohnenöl*), soybean cake or meal (*dou-bing*; *Bohnenkuchen*; the latter two in northeast China). The section on oilseed cakes as fertilizers mentions soybean cake (p. 230). Soybeans are also mentioned as a summer crop in rotation with millets (p. 305).

The section on legumes also discusses (p. 320-21) peas (*Die Wintererbse*, *Pisum sativum L.*, *Wan-dou*), broad beans (*Die Pferdebohne*, *Vicia faba L.*, *Tsan-dou* or *Hu-dou*) and the two types of bush beans which are grown throughout China and distinguished by the color and size of the seeds (*Die Buschbohne*; {1} *Phaseolus mungo L.*, *Lü-dou*, and

{2} *Phaseolus radiatus*, *Tschi-hsiau-dou* [*chixiaodou*]). The *Lü-dou* is widely prized as a vegetable, often as 5-cm-long beansprouts (*dou-ya-dsi*), or in parts of the North they are used to make vermicelli (slender noodles).

The section on oilseeds contains subsections on rapeseed, sesame, and peanuts (p. 332-38). The section on textile plants discusses hemp (p. 358-60).

Bray (1981) describes that as “A full and systematic description of Chinese agricultural methods in their ecological and socio-economic context, based on the agronomist author’s personal experience and careful questioning of his students at the Sino-German High School in Qingdao.” Address: Abteilungsvorsteher bei der Landwirtschafts-Kammer fuer den Regierungsbezirk Wiesbaden in Wiesbaden, Germany. Frueher Dozent fuer Landwirtschaft und Abteilungsvorsteher der Deutsch-Chinesischen Hochschule Tsingtau (China).

691. Horvath, A.A. 1927. The soybean as human food. *Chinese Economic Journal* 1(3):298-309. March. [24 footnotes. Eng]

• **Summary:** Contents: Soybean milk for food: Introduction. Preparation of soybean milk. Properties (Yu-P’i is Chinese for yuba; Laxa). Market prices. Composition. Nutritive value. New methods in the manufacture of soybean milk (Prof. Laxa in Prague [Czechoslovakia], Li Yu-ying, Soyama). Some dietetical advantages and applications of the soybean milk. Condensed soybean milk and milk powder (Soy Lac soybean milk powder made in America by Chard). Soybean cake, soybean meal and soybean flour as material for soybean milk. Yu p’i and yu ba (yuba; also fu chu).

“In 1905, Li Yu-ying submitted a paper on the subject [of soybean milk] to the 2nd International Milk Congress in Paris, in which he emphasized that the introduction of soybean milk to Western countries ‘will be highly beneficial to public health as well as to the budget of the poor.’ Also by those who advocate and urge a vegetarian diet, a very strong case can be made for this Oriental substitute” (p. 298).

According to Prof. Laxa: “Soybean milk, supplemented with lactose and inoculated with a culture of yoghurt [yogurt] bacteria, coagulates at 40° C. in 4 hours and gives a curd-like acid mass” (p. 300).

“Market prices. In Peking soybean milk is sold in small bottles in portions of about 200-220 cc. labeled ‘Bean milk, a Chinese product, the most nourishing food, made by... For such a bottle, delivered daily, the big factories of Peking asked in 1925 \$1.00 (Mex.) per month. One liter of such milk costs, therefore, about 15 cts. (Mex.)... A fine soybean milk powder, called *Soy Lac*, has recently been prepared in America by Chard” (p. 300-01). Note: This company (Chard) was first referred to by Piper and Morse in 1916 in *USDA Bulletin* No. 439, “The soy bean, with special

reference to its utilization for oil, cake, and other products.” Soy Lac is mentioned again by Horvath on p. 307.

A table (p. 302) compares the composition of soymilk made in 3 locations (Tsinanfu, China; Peking, China; and Japan) with that of human, cow, and goat milk. Human milk has the lowest protein content (1.25%) and ash content (0.25%); soymilk has about the same protein content as cow’s milk (3.3%) but an ash content (0.40%) which is higher than that of human milk but lower than that of cow’s milk. Footnote: “To supplement the deficiency of the soybean milk in mineral constituents [such as calcium], it is recommended by von Noorden and Salomon to add to it the salt mixture of Pirquet, which consists of: sodium chloride, 0.3 gm.; potassium chloride, 1.1 gms.; calcium glycerophosphate, 1.7 gms.; magnesium lactate, 0.5 gm.; ferrum glycerophosphate, 0.1 gm. This mixture is called *Nemssalz*. If diluted in 1 liter of water it gives the same percentage of salts as in women’s milk” (p. 302).

“In Germany the Soyama factory (in Frankfurt) manufactures soybean fresh milk (mostly from soybeans), soybean normal cream, and also condensed bean milk and cream. Soyama bean milk looks like cow’s milk, contains the same constituents, even in larger amount and in a state of finer dispersion. Only its taste is different. According to Fuerstenberg, Soyama milk can be qualified as a special, very valuable dietetic nutrient. The high lecithin content of this preparation adds to its value too” (p. 306). A table (p. 306, based on the analyses of Dr. G. Popp of Frankfurt) shows the nutritional composition of 6 types of Soyama milk and cream preparations: Normal milk. Milk for diabetics. Milk for baking purposes. Normal cream. Cream for diabetics. Cream extra rich in fat (especially for diabetics). “According to von Noorden and Salomon, Soyama preparations may be kept as long as almond milk and Paranut milk. Soyama milk looks just like cow’s milk. By keeping, cream separates and it must be shaken before using” (p. 306).

“In using Soyama milk and cream preparations, v. Noorden confirms the following statement of Fischer (for vegetable milk in general): ‘1. In the stomach soybean milk gives a much finer flocculent precipitate than does cow’s milk, produced by acid or even rennet. 2. The ingestion of soybean milk results in a feebler (smaller) secretion of gastric juice; the period of secretion is also shorter. 3. The period of stay in the stomach of the finely flocculent precipitate of the soybean milk is shorter than that of the casein-fat coagulum of cow’s milk. 4. The peristaltic motion of the stomach is less after the ingestion of soybean milk and more coordinated than in the case of cow’s milk, as shown by X-ray investigation’” (p. 307).

“On the basis of these observations soybean milk is recommended by v. Noorden in cases of gastric and duodenal ulcer, states of peritoneal irritation, hypersecretory conditions of the stomach, disturbances of the motility of

the stomach, uric acid diatheses, kidney disturbances, conditions with edema where a food poor in sodium chloride is required, Basedow’s disease, cholecystitis, cirrhosis of the liver, diabetes, and in cases where a very nutritious diet is required” (p. 307).

“Soybean milk powder will undoubtedly have a successful future in the Orient as well as in European countries and the United States. Its great advantage in comparison with cow’s milk powders is its cheapness. Soybean milk powder can be easily stored and transported... It is believed that at present come of the commercial milk powders contain an admixture of soybean milk powder” (p. 307-08).

A table (p. 309) gives the nutritional composition of five types of yuba: Common yuba, Kyoto yuba, Shimada yuba, Peking yuba, and Fu chu. “In Japan, Kyoto and Nikko are noted for *Yu Ba*.”

Reprinted in 1927 as part of an 86-page monograph titled “The Soybean as Human Food” (Peking, China). Address: Dr., Peking Union Medical College, China.

692. Horvath, A.A. 1927. The soybean as human food. *Chinese Economic Journal* 1(4):415-25. April. [34 footnotes. Eng]

• **Summary:** Contents: Soybean curd (tofu) for food: Preparation and types (“The Chinese classical name for *tofu* is *li chi*, probably meaning ‘the morning prayer’”), historical, present state (of tofu in China), chemical composition, digestibility, utilization (incl. frozen tofu and fried tofu).

Fermented soybean products for food. Soy sauce: Kibiki and sobiki tamari, composition of various soy sauces. Natto. Miso. Conclusion. Bibliography.

Tofu–Historical (p. 416): “The manufacture of soybean curd (*tofu*) was started in China in 164 B.C., during the reign of the Emperor Han Wen, by a man named Liu An, the duke of Hwai Nan. Liu An was a great friend of the Buddhist monks, and it seems quite probable that he made this bean curd to provide a change or delicacy to break the monotony of the monastic ration (Adolph). *Tofu* was introduced into Japan from Korea for the first time during the Toyotomi government, and Buddhist priests and some other people used it for their daily food among others before it was generally used in Japan.

Tofu–Utilization (p. 418-19): “Both the composition and the digestibility of *tofu*, therefore, prove it to be a very nutritious food material. In the Orient *tofu* forms a very popular and almost indispensable dietary article for the Buddhist priests, as well as the strict adherents to Buddhism, who eat no animal food [i.e., are vegans]. A common saying in some parts of China terms ‘bean milk the poor man’s milk, and bean curd the poor man’s meat.’ *Tofu* is also called ‘the meat without the bones.’ Note: This is the earliest English-language document seen (Dec. 2008) that

contains the phrase “the meat without the bones.” Note that it refers to tofu and not to soybeans.

In Indo-China the daily consumption of *tofu* by an adult is about 3/4 of a pound. *Tofu* in its various forms is also used very extensively by all classes of Japanese. In the interior of the country where fish cannot be easily obtained, it is a most important source of protein.

“In the Orient *tofu* is eaten in a fresh condition simply with a little *shoyu*, though it is also frequently cooked in soup. Fried *tofu* is also a very popular article of food. Rape-seed oil, sesame oil or soybean oil are generally used in frying.

Tofu may also be prepared for preservation and transportation. For this purpose fresh *tofu* is cut into smaller pieces and exposed to severe cold weather, to remove the water by freezing, and is then dried in an oven. As this prepared it can be preserved for several years. When the *tofu* is frozen the water collects in fine needles of ice distributed throughout the mass. When the ice melts and the water runs out, it leaves the *tofu* porous and it may be easily dried. If it is not frozen, it is difficult to dry and the resulting material is dense and horn-like. The *tofu* also cooks very well if cooked in diluted soy sauce and smoked in the same manner as meat. The resulting product forms in the Orient the basis for the manufacture of various ‘artificial meat’ preparations.*” Footnote: *”In Germany, the Soyama factory prepared during the Great War [World War I] a meat supplement from soybeans. It was cheaper than beef, contained less carbohydrates and had a nutritive value of about 1500 Calories in 1 kilo.”

“In Peking, at the Kai Cheng Bean Products Company, various preparations manufactured from *tofu* may be purchased, such as different kinds of soybean meat, soybean sausages, etc. The company has established a restaurant in Peking (at 86 Morrison Street, the name is written in Chinese characters) where one can get a Chinese dinner of numerous dishes prepared mostly from soybean products (chicken meat, pork, ham and beef, manufactured from *tofu*). Also discusses Dr. Yamei Kin.

A note at the end of this April issue states: “A reprint of Dr. Horvath’s paper in booklet form may be obtained from the Bureau of Economic Information. Price \$1, Peking Currency.–Ed.” Thus, these six articles were reprinted in 1927 as part of an 86-page monograph titled “The Soybean as Human Food” (Peking, China). Address: Dr., Peking Union Medical College, China.

693. Horvath, A.A. 1927. The soybean as human food. Peking and Shanghai, China: Chinese Government Bureau of Economic Information. Booklet Series No. 3. 86 p. May. Reprinted from Chinese Economic Journal, Sept. and Nov. 1926, and Jan. to April 1927. No index. 21 cm. [38 ref]

• **Summary:** A very original and important book. Contents: Preface by Macey F. Deming, Tappan New York, from an

address at a meeting of the National Soybean Growers’, held at Washington, DC, Sept. 1925. Introduction. 1. General ingredients of the various Manchurian beans. 2. Composition of some Japanese soybeans and of the common American varieties. 3. Value of the soybean as food. 4. Soybean oil for food. 5. Refined soybean oil: As substitute for salad or frying oil, as substitute for hardened oil and lard (hydrogenation), in oleomargarine and vegetable butters. 6. Whole soybean as food: Immature or green soybeans, mature or dry soybeans, the digestibility of the boiled soybean seeds, boiled soybeans as a food of predominant importance in China, soybean coffee, soybean chocolate, soybean sprouts.

7. Soybean cake, soybean meal and soybean flour for food: Soybean press cake, soybean extraction meal, soybean flour (Berczeller, Soyama, Aguma, lecithin, Ehrhorn), Sojawurze (Suppenwurze, Maggi cubes), digestibility of soybean flour, value for infants, some medical aspects of the use of soybean flour, soybean flour in diabetes. 8. Soybean milk for food: Introduction, preparation of soybean milk, properties (incl. inoculation with a culture of yoghurt [yogurt] bacteria to give a curd-like acid mass), market prices, composition, nutritive value, new methods in the manufacture of soybean milk (Prof. Laxa in Prague [Czechoslovakia], Li Yu-ying, Soyama), some dietetical advantages and applications of the soybean milk, condensed soybean milk and milk powder (Soy Lac soybean milk powder made in America by Chard), soybean cake, soybean meal and soybean flour as material for soybean milk, yu p’i and yu ba (yuba; also fu chu).

9. Soybean curd (*tofu*) for food: Preparation and types (classical name is *li chi*), historical, present state (of *tofu* in China), chemical composition, digestibility, utilization. 10. Fermented soybean products for food. Soy sauce: Kibiki and sobiki tamari, composition of various soy sauces. Natto. Miso. Conclusion. Bibliography.

On page 9 we read: “An industry which promises to be of importance in a further utilization of the soy bean is the manufacture of ‘vegetable milk.’ At the present time a factory in New York State is being equipped for this purpose.” Address: Peking Union Medical College, China.

694. Gonzalez, B.M. 1927. Education and agricultural promotion in Japan. IV. Promotion of agriculture. *Philippine Agriculturist* 16(2):67-71. July. [1 ref. Eng]

• **Summary:** Contents: Introduction. Intensification of culture. Land reclamation. Land adjustment. Price regulation. Rice conservation. Agricultural experiment stations.

The Central Experiment Station was first organized in 1890 as an experimental farm of the Department of Agriculture. Address: Delegate from the Univ. of the Philippines and the Government of the Philippine Islands to the Third Pan-Pacific Science Congress.

695. Heyne, K. 1927. De nuttige planten van Nederlandsch Indië [The useful plants of the Netherlands Indies. 2 vols.]. The Hague, Netherlands: W. van Hoeve. 1450 p. See vol. 2, p. 789-90, 814-20. See also 3rd ed. 1950. [14 ref. Dut]

• **Summary:** Contents: Ontjom. Dagé. The soybean (Sojaboon, Kedele). Cultivation. Seeds. Utilization: Témpe [tempeh], tao hoe [tofu], tao koan [pressed tofu; doufu-gan], tao tjo [Indonesian-style miso], soja (kètjap). Address: Hoofd van het Museum voor Economische Botanica te Buitenzorg (Bogor).

696. Horvath, A.A. 1927. The soybean as stock feed and human food. *Vestnik Manchzhurii (Manchuria Monitor)* No. 8. p. 5-7. English edition. p. 13-23. Russian edition. [19 ref. Eng; Rus]

• **Summary:** A brief but good introduction to soybeans and soybean products including soybean meal, soybean flour, soybean oil, bean milk [soymilk], to-fu, frozen to-fu, soy sauce, and mizo [sic, miso] or tsiang [jiang].

“When boiled with gypsum or chlorate of magnesia bean milk curdles, and is known as ‘to-fu.’ Its constitution varies dependent upon the method of preparation employed. Fresh soy curd contains on the average, 8% protein and 3% fat. ‘To-fu’ when smoked or fried, owing to loss of water, becomes somewhat allied to meat, thereby substantiating the Chinese proverb that—‘to-fu is meat without bones.’ Frozen to-fu prepared during the cold season contains up to 50% protein. Bean curd is almost totally assimilated, and may be used in the preparation of a considerable number of European dishes, the recipes for which have been published by the U.S. Department of Agriculture. The Chinese prepare an unlimited number of dishes based upon this comestible, including artificial meat. In order to obtain the specific taste of meat, smoking soybean sauce is used.” Address: Manchuria.

697. Japanese American News Inc. / Nichibei Shinbunsha. 1927. Nichibei jūshoroku [The Japanese American directory. No 23]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]*
Address: San Francisco, California.

698. Nadkarni, Krishnarao Mangeshrao. ed. and pub. 1927. The Indian materia medica. 2d ed. Bombay, India: K.M. Nadkarni. 5 + xviii + 1142 + clxix + lxxxviii p. Index. 20 cm.

• **Summary:** The body of this book (1142 p.) appears to be titled *The Indian Materia Medica with Ayurvedic, Unami & Home Remedies*. Soybeans are mentioned in three different places, almost as if each was thought to be different plant.

Page 313-14. “305. Dolichos Soja—(English—Soya bean, German—Soja bohne, Bengali—Gari kulaj, Hindi—Bhatwan,

Kumaon—Bhut) is a species cultivated in some part of India for its seeds which are eaten and which contain a high percentage of protein and fat.

Page 399: “396. Glycine Soja & G. Hispida are species (English—Soya bean, Hindi—Bhatwan, Bengali—Gari kulaj, Kumaon—Bhut, Eastern Terai—Khajuwa) met with on the tropical Himalayas from Kumaon to Sikkim and Khassia and Naga Hills. A decoction of the root is said to possess astringent properties.”

Page 803: “886. Soja Hispida or Glycine Soja (English—Soya bean; Soy-bean) has taken the place of meat in the diet of Chinese, Japanese and other Asiatics. Its notable characteristics are its large proportion of assimilable protein and fat, and its lack of starch and small content of sugar. Being so highly nutritious, it is not adapted for use as a side-dish, like ordinary vegetables, but, like meat, supplies a chief food. Among the preparations mentioned as common in China and Japan are ‘tofu’ resembling cottage cheese; ‘Shoyu or Soya’ which has been soaked to remove the skin and then boiled and seasoned; ‘Miso’ or soy-bean milk, prepared by soaking pulverized beans and straining; and ‘Natto’ obtained by fermenting the boiled beans. The lack of starch gives the beans favour as a diabetic food, and soy-bean meal and soy-bean bread have been prepared. The beans have been also tried as a coffee substitute—(Popular Science Siftings). For more particulars see also Dolichos Soja etc.”

Also mentions *Sesamum indicum* (p. 788-90). Sanskrit.—Tila. English—Gingeli. French—Sesame. German—Sesom [Sesam]. Hindi, Cashmeri, Punjabi & Bengali—Til. Mahrathi & Konkani—Teel. Telugu—Nuvvulu; Guvvulu. Tamil—Ellu. Canarese—Uru-Ellu. Malayali—Karuellu.

The author was born in 1864. A 3rd edition was published in 1955. First published in 1908 under the title “Indian Plants and Drugs.” Address: India.

699. Read, Bernard E.; Liu, Ju-ch’iang. 1927. Flora Sinensis. Series A. Volume 1. Plantae medicinalis Sinensis. 2nd ed. Bibliography of Chinese medicinal plants from the Pen Ts’ao Kang Mu... 1596 A.D. Peking, China: Dept. of Pharmacology, Peking Union Medical College. xi + 106 p. In collaboration with the Peking Laboratory of Natural History. [39 soy ref. Eng; chi]

• **Summary:** References related to soybeans are given in the chapter on Leguminosae under the genus *Glycine* on p. A.I.30. References are given for the soybean (*ta tou* or *huang ta to*), the wild soybean (*pai tou*), soy bean sauce (*chiang*), bean curd (*tou fu* [tofu]), bean ferment (*tou huang*), bean relish (*ta tou ch’ih* [soy nuggets]), and bean sprouts (*ta tou huang chüan*).

Also discusses kudzu (ko, 1: #372 “*Pueraria hirsuta* Schneid.”), which is reported to grow in the provinces of Chihli, Shantung, Kiangsi, Kwangtung, Chekiang and Hupeh. Address: 1. Prof. and Head of; 2. Asst. of. Both:

Dep. of Pharmacology, Peking Union Medical College, Peking, China.

700. Y.W.C.A. 1927. Chinese cook book Peking: Young Women's Christian Association. 41 p. 23 cm. [Fre]

• **Summary:** In the section on "Soups," (p. 3) is a recipe for Egg soup which calls for "Soy sauce (Chiang yu)" and "1 teaspoon epicurean powder (Ajinomoto powder, a Japanese powder procurable in bottles)."

On the same page, the recipe for Spinach soup calls for "Bean curd diced (1 piece 3 in. square). Add salt and chiang yu to 4 cups of boiling water... Be careful not to break the bean curd by stirring."

A recipe for "Bean curd soup" (p. 6) begins: "Buy *hsin tou fu* (new / fresh bean curd less than 6 hrs. old that has not been pressed into cakes)" [i.e. fresh soymilk curds].

In the chapter on "Meats" (p. 12), the recipe for Shredded beef calls for "Soy sauce" and "Black chiang yu." The recipe for Meat-vegetable dish to be served with Shao ping (p. 14) calls for "Tou Fu Kan (Dry bean curd [pressed tofu], 5 flat cakes, 2 inches in diameter)." The recipe for Spiced mutton (p. 14) calls for 2 tsp. "Soy bean paste."

On pages 39-41 is a "Vocabulary" with three columns: Name in English. Romanization of Chinese name (Wade-Giles) with accents. Name in Chinese characters. Soy related words: Bean curd-tou fu. Bean curd (dry)-tou fu kan. Bean curd pickled-chiang tofu fu. Soy bean paste-hei chiang. Soy bean oil [sic, sauce] (black)-hei chiang yu. Soy sauce-chiang yu. Address: Peking, China.

701. Makino, Tomitaro; Tanaka, Koichi. 1928. Nippon shokubutsu-Kazoku kensaku [A manual of the flora of Nippon]. Japan. 13 + 53 + 15 + 864 p. See p. 291. Illust. 19 cm. [Jap]

• **Summary:** Contains 212 illustrations. On page 291, under the genus *Glycine*, are mentioned two species: *Glycine Soja* Benth. (Japanese: *daizu*, *ô mame*, *miso mame*, *mame*) and *Glycine ussuriensis* Reg. et Maack. (Japanese: *tsurumame*, *nomame*).

See also: Peanuts (*Nankin mamé*, *Tojin mamé*, p. 282). Lupins (p. 282). Pueraria (*kuzu*, *mamekuji*, *makuzu*, p. 299). Sesame (*goma*, p. 529). Address: Japan.

702. Oshima, Kokichi. 1928. Protease and amylase of *Aspergillus oryzae*. *J. of the College of Agriculture, Hokkaido Imperial University* 19(3):135-244. March. [109 ref. Eng]

• **Summary:** Contents: Introduction. Methods used for the quantitative estimation of amylase and protease, a formula to determine digestibility, and precautions in the use of Van Slyke's method. Enzymes found in *Aspergillus oryzae*. Conditions influencing enzyme production. Properties of protease from *Aspergillus oryzae*. Properties of amylase

from *Aspergillus oryzae*. Disinfectants for preserving the amylase solution of *Aspergillus oryzae*. General summary.

"There are at least four large manufacturing industries in Japan, in the manufacturing process of which *Aspergillus oryzae* is of the first importance... The total yearly quantities of these products are approximately as follows: Sake (rice wine) 4,500,000 'koku' (=813,000 kilolitres). Shoyu (soy sauce) 5,000,000 'koku' (=902,000 kilolitres). Miso (soy cheese [paste]) 450,000,000 'koku' (=1,690,000 kilograms). Shochu (distilled alcoholic liquor calculated as 95% alcohol) 220,000 'koku' (=39,700 kilolitres)." Address: Chemical Lab., School of Fishery, Hokkaido Imperial Univ., Japan.

703. Grey, Egerton Charles. 1928. The food of Japan. Geneva: League of Nations, Health Organization. 161 p. May. Index. 22 cm. [82 ref. Eng; fre]

• **Summary:** Detailed information and analysis. Contents: Preface. 1. Quantity of food in Japan: Exports, imports, production and consumption of food in Japan in the year 1925. 2. Quality of food in Japan: Definition of quality. 3. Distribution of food in Japan: Natural and artificial distribution. 4. Chemical composition of Japanese foods as consumed: Methods of analysis. 5. Chemical composition of Japanese food as purchased. Appendices: I. Literature relating to the chemical and physical properties of the food of Japan, with list of authors. II. Food materials and the plants and animals serving as sources of food in Japan.

Table 7 (p. 25) shows the amounts of major foods consumed in Japan. The percentage of the total food consumed is: Rice 50.83%, barley 10.15%, potatoes 8.63%, wheat 6.63%, soy bean 4.76%, other beans 3.71%, other cereals 3.24%, fish 1.72%, seaweed 1.23%.

On page 54, the author discusses the "Alkalinity of the ash [of foods]. This figure is of considerable importance as indicating the capacity of the food material to produce alkali in the body." On pages 61-111 the author lists the nutritional composition of all major Japanese foods, grouped by food type: 1. Cereals and cereal products. 2. Legumes, pulses, and legume products. 3. Roots, greens, and other vegetables. 4. Mushrooms and seaweeds. 5. Fruits, nuts, and seeds. 6. Vegetable oils. 7. Other vegetable products. 8. Dairy products. 9. Eggs. 10. Meat and animal fat. 11. Fish. 12. Condiments, beverages, etc. The name of each food is given in both English and French, usually with a brief explanation.

In a table (p. 65-69), in category "II. Legumes, pulses, and legume products," the section titled "Fresh legumes" includes (p. 64-65): Edamame (Soy bean in pod) = *Fève de soya en cosse*. The section titled "Dry legumes (pulses)" includes (p. 64-67): Azuki (Small red bean) = *Petit haricot rouge*. Dainagon (Small red bean) = *Petit haricot rouge* Ao daizu (Soy bean [with green seed coat]) = *Fève de soya*. Kuro daizu (Black soy bean) = *Fève de soya noire*. Shiro

Daizu (White soy bean) = *Fève de soya blanche*. Rakkasei (Pea nut) = *Pistache de terre*.

The section titled “Bean products” includes (p. 66-69): Aburage (Fried-bean curd) = *Pâte de haricots frite*. Aka miso (Soy-bean paste) = *Pâte de fèves de soya*. Gammodoki (Fried-bean curd) = *Pâte de haricots frite avec mixture d'algues marines*. Kinako (Soy-bean powder) = *Poudre de fèves de soya*. Kori dofu = *Pâte de haricots séchée*. Namaage (Fried-bean curd) = *Pâte de haricots frite*. Natto (Fermented soy bean) = *Fève de soya fermentée*. Sarashian (Red-bean powder) = *Poudre de haricot rouge* [Sarashi-an from azuki beans]. Shiro miso (White soy-bean paste) = *Pâte blanche de fève de soya*. Tofu (Soy-bean curd) = *Pâte de fèves de soya*. Tofu kasu (Soy-bean residue) [okara] = *Déchets de fèves de soya*. To nyu (Soy-bean milk) = *Lait de fève de soya*. Yuba.

Also: Mushrooms and seaweeds includes (p. 73-75): Arame, Asakusanori [Asakusa nori], aonori, hijiki, kanten, kombu, mozuku, ogonori, tororo kombu, wakame. Fruits, nuts and seeds includes (p. 77): Asanomi (Hemp seed), Goma (sesame, white and black). Vegetable oils includes (p. 79): Daizu yu (Soy bean oil) = *Huile de fève de soya*.

Condiments includes (p. 92-93): Hamana natto [soy nuggets]. Kiriboshi (Dried daikon). Misozuke [miso pickles]. Narazuke. Shoyu [soy sauce]. Takuan (Pickled radish). Umeboshi (pickled plum) = *Prune confite*. Beverages includes (p. 92-93): Amazake. Mirin (fermented rice). Sake (Rice wine).

For each food, the following values are given in both English and French: Water, protein (N x 6.25), fat, carbohydrate, ash, calories, alkali value, total nitrogen, water-soluble nitrogen, phosphoric acid (anhydrous), sodium chloride (salt), water-soluble ash, water-insoluble ash, alkalinity due to soda and potash, alkalinity due to lime and magnesia, calcium oxide, ferric oxide, factor for converting to dry food.

Note 1. In Japan, the typical person is well aware of which foods are alkaline (*arukari-sei*) and which are acidic (*san-sei*). The alkaline foods are generally considered more healthful and health-protecting. For the alkaline values given by Grey for many basic Japanese foods, see *SoyaScan Notes*. 1991. Sept. 20.

Note 2. This is the earliest English-language document seen (March 2009) that uses the term “soy-bean paste” to refer to miso.

Note 3. This is the earliest English-language document seen (July 2001) that uses the term “Edamame” to refer to [green] soy beans in their pods.

Note 4. This is the earliest English-language document seen (Feb. 2004) that uses the term “kori dofu” to refer to dried-frozen tofu.

Note 5. This is the earliest English-language document seen (Dec. 2006) that uses the term “pickled plum” to refer to umeboshi salt plums.

Note 6. This is the earliest English-language document seen (Oct. 2008) that uses the term “Hamana natto” to refer to soy nuggets.

704. Togano, Meiji. 1928. Shôyu, miso oyobi kyarameru seizô-hô [Production methods for shoyu, miso, and caramel]. *Kojo Kenkyu-kai, Sokki-roku (Factory Research Society, Collected Notes)* No. 38. 46 p. July. [Jap]

• **Summary:** On this document, Kôjô Kenkyu-kai is translated as “Japan Workshop Committees Association;” They published this lecture. The author’s last name is romanized as “Tsugano.”

705. Wu, Hsien. 1928. Nutritive value of Chinese foods. *Chinese J. of Physiology, Report Series* No. 1, p. 153-86. July. Issue title: Metabolism. [7 ref. Eng; chi]

• **Summary:** The nutritive value of many Chinese foods (water, protein, fat, ash, crude fiber, carbohydrate, calories) is given (with the English name, scientific name, and name in Chinese characters), including the following: wheat gluten, sesame seed (p. 155), yellow soy bean, black soy bean (large or small), green soy bean, soy bean sprout (yellow or green), soy bean flour, soy bean curd, soy bean dregs [okara], bean curd (doufu-gan, boiled in salt and spices and partially dried), oil skin ([yuba], from boiled soy bean milk), bean curd skin ([yuba], dried, or rolled like bamboo), soft bean curd, soy bean milk (p. 156), smoked bean curd, sheet bean curd, fermented bean curd, pickled bean curd, soy bean (fresh) (Characters: hair + bean = mao tou), wild soy bean, red gram bean (red small bean, *Phaseolus mungo* [azuki bean], p. 157), cucumber pickled in soy bean paste (p. 175).

Condiments: Thick soy bean paste, thin soy bean paste, fermented soy bean, fermented bean (dried), thin soy bean sauce (white), thick soy bean sauce (white), thin soy bean sauce (black), thick soy bean sauce (black), soy bean sauce (“chemical”), sweet flour paste (p. 176).

Table 4 (p. 180) gives the calcium, phosphorus, and iron content of some Chinese foods in percentages of edible portion, including the following: Wheat gluten, job’s tear, yellow soy bean, black soy bean, red gram bean [azuki], green soy bean (fresh), soy bean flour, soy bean milk, bean curd (Southern style and Northern style).

Table 5 (p. 182) lists foods as sources of vitamins A, B, C, or D, including the soy bean (an excellent source of vitamin B).

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the word “doufu-gan” (or “doufu gan”) to refer to Chinese-style firm tofu. Address: Dep. of Biochemistry, Peking Union Medical College, Peking, China.

706. Dyson, G. Malcolm. 1928. Mould food of the Far East. *Pharmaceutical J. and Pharmacist (London)* 121:375-77.

Oct. 20.

• **Summary:** Discusses *Aspergillus* molds, soya sauce or shoyu, shoyu-koji, tane-koji, the shoyu-yeast (a strain of *Zygosaccharomyces*), the sodium salt of glutamic acid (which imparts a meat-like flavor to these purely vegetable preparations), *aji-no-moto*, red miso and white miso (*shiomiso*), natto, the protein-splitting powers of the enzymes secreted by the molds mentioned above.

Red soya cheese is a type of tofu. The ripened curd is immersed in a brine and the maturing is finished by a purple mold—*Monascus purpureus* (Went.)—which imparts a red color to the finished tofu.

Note: This is the earliest English-language document seen (Feb. 2007) that uses the term “soya cheese” or the term “Red soya cheese” to refer to fermented tofu. Address: Ph.D., A.I.C.

707. Takata, Riohei. 1928-1929. Miso jôzô no eiyô gakuteki kôsatsu. I. Miso gan chisso seibun no yôka teiretsu to sono riyû [Nutritional observations on miso fermentation. I. The inferior nutritional value of miso’s nitrogen compounds and the reason therefor]. *Kogyo Kagaku Zasshi (J. of the Society of Chemical Industry, Japan)* 31(9):811-20; 31(10):983-89. Sept/Oct; 32(4):495-97. May. English abstracts on p. 196B-199B, 233B-235B. (Chem. Abst. 23:5221). [2 ref. Jap]

• **Summary:** Describes nutritional experiments with rats. Address: Naimu-sho Eiyô Kenkyûsho, Kakô Shokuhin Kenkyûshitsu, Japan.

708. Dorsett, P.H.; Morse, W.J. 1928-1932. Agricultural explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon (Log—unpublished). Washington, DC: USDA Bureau of Plant Industry. Foreign Plant Introduction and Forage Crop Investigations. 7,410 p. Unpublished typescript log. Illust. Partially indexed. 28 cm.

• **Summary:** Also called the “Log of the Dorsett Morse Expedition to East Asia” and (by the National Archives) “Dorsett-Morse Expedition to the Far East, 1929-31,” this is one of the most important documents ever produced on soybeans and soyfoods. It consists of 17 volumes of typewritten unpublished manuscript plus handwritten notebooks. Hundreds of photos are pasted on the pages, each with a number and a caption. The first quarter of the pages (to about page 2,500) are indexed, using 4 separate indexes. The only original and 2 microfilm copies were at the American Soybean Assoc. (St. Louis, Missouri), however as of Oct. 2004 they are on permanent loan to Special Collections at the National Agricultural Library (Beltsville, Maryland)—which also has 7 photograph albums that accompany the 7 log books. One photocopy of a microfilm copy is at the Soyfoods Center (Lafayette, California). One microfilm copy is at the National Archives in Washington, DC, in Records of the Bureau of Plant

Industry, Soils, and Agricultural Engineering, Record Group 54. See: “National Archives Microfilm Publication No. M840. Expedition Reports of the Office of Foreign Seed and Plant Introduction of the Department of Agriculture, 1900–1938.” Rolls 16-20, volumes 56-73. These microfilm rolls may also be available for viewing or duplication at one of the various regional branches of the National Archives (e.g. San Bruno, California).

A brief itinerary of the trip is as follows: 1929 Feb. 18–The party of 5 people leaves Washington, DC, for Los Angeles by train. It consists of Morse, his wife Edna, their daughter Margaret (age 7), Dorsett, and his daughter-in-law Ruth (Bobbie; the widow of Dorsett’s son, she served as Dorsett’s secretary and general helper). March 1–They sail from San Francisco to Yokohama on the S.S. *President Grant* of the Dollar Steamship Lines. March 29–Arrive in Yokohama, proceed directly to Tokyo, establish headquarters with rooms at the Imperial Hotel, and hire an interpreter, Mr. Suyetake, who works with them for the next 2 years. May 21–The Morses go to Hokkaido, the Dorsetts to Kyoto, by sleeper train. Morse returns to Tokyo. Aug. 17–The entire party arrives in Hokkaido and establishes headquarters in Sapporo to study soybeans. Oct. 8–Leave Hokkaido for the Northeast Provinces, then arrive in Tokyo on Oct. 15. Oct. 22–Arrive in Keijo (Seoul), Korea, then take many side trips. Note: 1929 Oct. 29–Great Depression begins in USA with stock market crash. Dec. 8–Return to Japan via Kyushu, then to Tokyo to study soyfoods. They buy and photograph many!

1930 April 1–Travel by steamer to Dairen, Manchuria, where they set up headquarters. Dorsett very sick from April 11 to June 11; almost dies of double pneumonia. Morse takes all notes. June 24–Morse takes a quick trip to northern Korea, via Mukden and Antung (Tan-Tung), to look for *Zoysia* grass. July 1–Returns to Manchuria via Mukden. July 21. Dorsetts leave for Peking by train; Morses and Mr. Suyetake stay in Dairen. Aug. 21–Morse party travels to northern Korea, staying in Heijo (Pyongyang / P’yongyang); takes a 4-day side trip to Seoul. Sept. 28–Morse returns to Dairen, Manchuria. Oct. 19–Morse party leaves Dairen, arriving in Peking the next day. Nov. 9–Morse party returns to Dairen. Nov. 30–Morse arrives in Harbin, north Manchuria, then passing through Mukden, returns to Dairen. Dec. 18–Morses leave Dairen for Japan, passing through Kobe on Dec. 21 and arrive in Tokyo on Dec. 23.

1931 Jan. 12–Travel to Kyoto, Himeiji, and Tatsuno Shoyu. Jan. 16–Visit Okazaki and Hatcho miso. Jan. 17–Return to Tokyo. Feb. 17–Morse party leaves Tokyo for the USA, arriving in San Francisco on March 4. March 15–Dorsett party leaves Peking for Tientsin, Shanghai, and Hankow. March 27. Dorsetts sail from Shanghai to San Francisco. Note: This is the log (unpublished) seen (Oct.

2001) that mentions soy. Address: Agricultural Explorers, from USDA, Washington, DC.

709. **Product Name:** Koji Miso, and Miso-Zuke.

Manufacturer's Name: Araki (Sotaro).

Manufacturer's Address: 45 Piopio, Hilo, Island of Hawaii. Phone: 579.

Date of Introduction: 1928.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1928-29. p. 587. Araki Sotaro, General Merchandise, Wholesale and Retail, Manufacturers of Koji Miso and Miso-Zuke. 45 Piopio, Hilo, Island of Hawaii. Tel. 579. P.O. Box 461.

710. Hara, Tetsukazu; Takada, Ryohei. 1928. Miso ni kansuru kenkyū [Studies on miso]. *Eiyo Kenkyūjo Hokoku (Report of the Imperial Government Institute for Nutrition)* 2:262-339. [Jap]

Address: 1. Gishi; 2. Gishu. Both: Eiyo Kenkyusho.

711. Japanese American News Inc. / Nichibei Shinbunsha. 1928. Nichibei jūshoroku [The Japanese American directory. No 24]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]*

Address: San Francisco, California.

712. Maliareffsky, G.I. 1928. Preparation of Chinese soy bean sauce in North Manchuria. *Vestnik Manchzhurii (Manchuria Monitor)* No. 1. p. 11-12. English edition. [Eng]

• **Summary:** Combined with the Russian text, this 10-page document contains 15 black-and-white photos. Discusses the process, technology, and equipment used to make fermented soy sauce in Manchuria in the late 19th and early 20th centuries. Photos show: Materials used. The Li-tung Company at Fushiatien. Boiler house with vats where beans are dried for fermenting. Earthen pots containing corn 'miso' during fermentation. Coopers shop where vats are made. Rye of making into koji. Grinding stones for crushing rye koji. The wood press. Address: Harbin, Manchuria.

713. Nippon Joyukai. 1928. Jōzō ronbun-shū [Collected dissertations on fermentation]. Tokyo: Nippon Joyukai Shuppan-bu. 943 p. [Jap]*

714. *Time*. 1929. Lion-tiger-wolf. 13(14):11-12. April 8.

• **Summary:** "Manna, marmalades, and malt, sarsaparilla, sand and salt;... Madder, miso, rattan mats, bricks and brooms and baseball bats..."

Republican members of the Ways & Means Committee of the U.S. House of Representatives are considering what items should be included in the forthcoming Hawley-Smoot Tariff Bill. Over the past 45 days, public hearings have

brought to this chamber 1,200 witnesses, who have given 11,000 pages of printed evidence concerning changes they would like to see in the 1922 Tariff Act. But President Hoover wanted tariff revisions limited to agricultural products and a few other special but as yet unnamed commodities.

Note: This is the earliest known reference to "miso" in *Time* magazine.

715. Dorsett, P.H.; Morse, W.J. 1929. Miso in Japan (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: USDA Bureau of Plant Industry, Foreign Plant Introduction and Forage Crop Investigations. 7,410 p. Unpublished log.

• **Summary:** Pages 1009-10 (14 May 1929, Tokyo). "Copied from Mr. Morse's diary. In the afternoon we went to Matsuzakaya store to look over bean products and as a result we secured seventeen different soybean products. We found that they had 20 different forms of miso, a product which we think may have possible value at home."

Page 1053 (2 May 1929, Tokyo, Japan). A photo shows a natural sized picture of a small wooden box of miso. The Japanese name is given but is illegible. Page 1054. Photo of a small wooden box of "Kansai miso." It is made in the Kansai district [the Kyoto-Osaka area] and is used in making miso soups. Page 1068. Photo of a "small wooden box of 'Edomiso' which is made in the Tokyo District. Miso which is quite salty is used in making soups. In the city, miso soup is used for breakfast, which in the country miso soup is used for lunch and supper." Page 1070. Photo of a small wooden box of "Shiromiso" [shiro miso], meaning white miso. "This form contains rice and is used in making miso soup."

Page 1202 (26 May 1929, Sapporo, Japan). Mr. Morse visited the Hokkaido Agricultural Experiment Station at Kotoni. Mr. Takatsugo Abiko explained that "The soybeans grown in Hokkaido are used entirely for food purposes such as natto, bean curd, green vegetable bean, soy sauce, miso, bean paste and roasted beans."

Page 2004 (29 July 1929). Morse visited the Saitama Experiment Station at Urawa, Saitama prefecture. Met Mr. Tadashi Hashigawa, who is in charge of the soybean work of this prefecture, which is third in soybean acreage in the Japanese Empire. His main work is developing varieties to be used for making soy sauce, tofu, miso, and natto. This station grows about 50 varieties, nearly all yellow-seeded and medium in size.

Page 2445-46 (19 Sept. 1929). Visited the Tokachi Branch Experiment Station in Hokkaido. Met Mr. Seiji Kawase and Yoshio Fujine. 60% of the crops grown in Hokkaido are legumes; of these, field beans are first, followed by soybeans, then field peas. The Tokachi district

is very well adapted to soybean culture. There are five grades of soybeans plus a special grade for beans that will be used for soy sauce, miso, etc. Of the 1,837,325 bushels of soybeans produced in Hokkaido, 58% is exported [to outside of Hokkaido] and 42% is consumed in Hokkaido as follows: Miso 9%, soy sauce 9%, seeding 6%, tofu and other products 18%. In 1923 Hokkaido was Japan's leading soybean producing region with 17% of the nation's production, followed by Ibaragi 5%, Saitama 5%, Nagano 4%, Kumamoto 4%, Aomori 4%, Niigata 4%, etc.

Page 3230 (10 Dec. 1929, Kyoto). "We then went to a Natto manufacturing place near an old temple known as Daitokuji. Here we tried out a kind of natto [Daitokuji natto = soy nuggets] which we think might take with the American people, also miso, both are different from any we have previously seen. A detailed account of the manufacture of these products is to be found in our special report concerning the soybean and its products." Address: Agricultural Explorers, from USDA, Washington, DC.

716. Takata, Ryôhei. 1929. Miso jôzô no eiyogaku-teki kôsatsu. VI. Daizu no shisuchin ganyû teido [Nutritional observations on miso fermentation. VI. Cystine content of soybean]. *Kogyo Kagaku Zasshi (J. of the Society of Chemical Industry, Japan)* 32(4):495-97. May. [2 ref. Jap] • **Summary:** Nutritional experiments with rats. Address: Naimusho Eiyo Kenkyusho, Kako Shokuhin Kenkyushitsu, Japan.

717. Takata, Ryôhei. 1929. Miso no kaihatsu-sei seibun [On the volatile substances in miso]. *Kogyo Kagaku Zasshi (J. of the Society of Chemical Industry, Japan)* 32(7):628-29. July. [Jap] Address: Naimusho Eiyo Kenkyusho, Kako Shokuhin Kenkyushitsu, Japan (Kôgaku-shi).

718. Morse, W.J. 1929. Letter from Dr. [sic] Morse. Tokyo, Japan, July 20, 1929. *Proceedings of the American Soybean Assoc.* 2:50-52. Tenth annual field meeting. Held 22-23 Aug. at Guelph, Ontario, Canada.

• **Summary:** This letter from W.J. Morse was read before the 1929 convention of the American Soybean Association at Guelph, Ontario, Canada. This is the first annual ASA meeting he has missed. He begins with a brief description of the "Oriental Agricultural Exploration Expedition" headed by Mr. P.H. Dorsett and himself. They plan to study soybeans in Japan first. "The largest soybean section is the Island of Hokkaido which has an acreage of 215,212 [planted to soybeans] and produces 3,184,245 bushels of beans" [yield = 14.8 bushels/acre].

"On our arrival and after establishing headquarters in Tokyo, we first began to look up varieties which we might send back to the United States for the 1929 planting. We succeeded in packing up about 100 lots which are now

growing in the variety plots at Arlington Farm [Virginia]. In hunting out this seed, we were very much surprised to find the soybeans listed with the garden beans and as garden beans. For the most part these are grown as green vegetable beans. These sorts are black, brown, greenish yellow, and yellow seeded varieties of early, medium, and late types. Some of the yellow seeded varieties are listed as most suitable for bean curd, soy sauce, miso, natto, and confectionery purposes, such as sweet bean paste, candied beans, roasted beans (like our peanuts), and sugared beans." Note: Azuki beans, rather than soybeans, are usually used to make "sweet bean paste" in Japan.

"It is amazing, the extent to which the soybean is used for food in Japan. Whether or not it can be used in the United States in all of the ways used here is extremely doubtful, that is for human food." There is no doubt that American soybeans will be used mostly to produce oil and oil meal. "It may interest you to know that the beans produced in Japan are used entirely for human food, green manure, and planting purposes. The grain varieties have seed of higher quality than those produced in Manchuria and are not used for oil and oil meal production as [are] the beans of Manchuria. The great soybean oil and meal production of the Orient is confined almost entirely to Manchuria.

"Another thing which surprised us greatly was the extent to which soybeans are used for green manure purposes in the rice paddies." The plants are turned under in the mud after water has been run into the paddies.

"Another extensive use of the soybean is for bean curd, or tofu, which is manufactured only... in small shops scattered about the cities and country villages. This curd is used in many ways, being the meat of the poorer classes. It is used, however, quite generally in making bean-curd soup [miso soup with tofu] which is sometimes served at breakfast and nearly always at supper. The bean curd is peddled about from house to house by men with two tubs suspended from a bamboo pole over their shoulders. The sound of the little horn of the bean curd man as he announces his coming has become quite a familiar sound to our ears as we go along the streets or hear him pass under our office windows.

"Soy sauce is manufactured on a very large scale and is universally used by the Japanese, rich and poor. We have had the pleasure of visiting the large experimental laboratory of an experiment station given wholly to soy sauce and saké experiments. In Hokkaido we visited a soy sauce factory, the buildings of which covered several acres. In one of the curing vat buildings where the mash is allowed to cure for about 18 months, we counted ninety large vats.

"Soybeans are used to a very considerable extent for confectionery purposes. The large black, brown, and green seeded varieties are used in making sweet bean paste which is put up in small thin slabs and then done up in very

attractive packages. Roasted beans, similar to our roasted peanuts, may be found at nearly all confectionery stores. Roasted beans are also sugar coated and others are sprinkled with small pieces of sea-weed during the roasting, which gives an appearance of mottled beans (rather a familiar sight to our mid-west farmers). Then, there are the candied beans, that is, beans which have been boiled in syrup.

“Miso and natto are two forms of bean foods in which the beans are first cooked and then treated with certain bacteria [sic, microorganisms]. Miso is used largely in soups which are consumed at breakfast. Both of these foods are quite largely used.

“Other products used for food are roasted soybean flour, soybean vermicelli, pickled green beans in the pod, yuba—the film produced by boiling soybean milk, and dried frozen bean curd.” Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the term “dried frozen bean curd” to refer to dried-frozen tofu.

Note 2. This is the earliest English-language document seen (Dec. 2005) that contains the term “roasted soybean flour.”

“Another surprising thing is the very extensive use of the soybean as a green vegetable bean. As early as May, small bundles of plants with full grown pods were seen on the market. At the present time the market is virtually flooded with bundles of plants with full grown pods, the seeds of which are also full grown. The pods are boiled in salt water and the beans eaten from the pods.

“During the past two weeks we have visited large sections near Tokyo where soybeans are grown for green vegetable purposes. The beans are grown in rows 2 feet apart and in 95 per cent of the cases there are other crops planted between the bean rows, such as early cabbage, onions, lilies (for the edible bulbs), late varieties of soybeans, late plantings of soybeans, and other early truck crops.” Address: USDA, Washington, DC.

719. Dorsett, P.H.; Morse, W.J. 1929. Miso in Chosen (Korea) (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: USDA Bureau of Plant Industry, Foreign Plant Introduction and Forage Crop Investigations. 7,410 p. Unpublished log.

• **Summary:** * = Best photos. Page 2965 (14 Nov. 1929). Again visited the Shariin Agricultural Experiment Station near Shariin and met Dr. Takahashi, the director, who demonstrated the common Korean practice of planting soybeans in 4' hills on ridges among the other crops. “In the afternoon we visited a nearby village and tried photographing scenes and operations in the making of soybean mash balls for the home manufacture of soybean miso and soy-sauce. Photos (p. 2966-67) show women planting soybeans on the side of ridges using a small, short-

handled hoe. Photos (p. 2968-69) show close-up views of “Tenjan [doen jang = Korean soybean jang], soy sauce, and Kanjan [kan jang = Korean soy sauce]; back row, left to right, two balls of freshly made bean mash, on the right, two made three weeks or more ago, these are pretty well cracked and covered with mould.”

Note 1. Each ball is wrapped in straw which is joined and twisted at the top.

Note 2. This is the earliest document seen (March 2009) that uses a Korean name for Korean-style soybean jang (miso), or that uses the word “Tenjan” to refer to Korean-style soybean jang.

Same photo but with a crock of miso in the back. Photo of Korean planting soybeans using a large plow and oxen. Photos (p. 2972-75). * Pouring boiled soybeans into a wooden mortar at Shariin. Crushing the soybeans with a “wooden pestle for use in making miso balls for the growing of curing bacteria.” A nearby view of the same. A Korean woman in traditional dress working the mashed beans into balls in a large bowl placed on the ground. Balls in the background, more than 3 weeks old, are full of molds and bacteria. A nearby view of the new and old miso balls wrapped in rice straw.

Note: The various types of traditional Korean miso and soy sauce are made from a dried soybean koji called *meju*, which is prepared in much the same way as Japan's *miso-dama*. The word *jang* is closely related to the Chinese word *chiang* [pinyin: *jiang*]. Traditional Korean miso and soy sauce contain no wheat, rice, barley, or other grain. For details, see *The Book of Miso*, 2nd ed, by Shurtleff & Aoyagi (1983, p. 245-47). Address: Agricultural Explorers, from USDA, Washington, DC.

720. Pierson, J.L. trans. 1929-1963. Man'yoshu. Leiden (Leyden): E.J. Brill Ltd. 20 Vols. See vol. 16, p. 44. [Eng] • **Summary:** This is the only translation of the entire Man'yoshu.

721. **Product Name:** Maruten Miso.

Manufacturer's Name: Amano Miso Seizo-sho (Amano Brothers).

Manufacturer's Address: 2141 Powell St., Vancouver, BC, Canada. Phone: High. 5526 L.

Date of Introduction: 1929.

New Product-Documentation: Hokubei Nankan—The North American Times Year Book. 1936, p. 254. Amano Miso Seizô-sho. Mr. Teiichi? (or Otokazu? or Kuniichi? or Chikakazu? or Tsugikazu?). 2141 Powell St., Vancouver, BC. Phone: High. 5526 L.

The New Canadian. 1941. Aug. 22. p. 8. “For 12 years Mr. [Teiichi] Amano has been in the business of making Japanese miso.”

Vancouver City Directories. 1952-66. The first listing is 1952: Amano, T. Co. (T. Amano). Soya sauce and rice paste

manufacturers. 1139 E. Hastings St. In 1955 the occupation had changed to manufacturers, importers, and exporters.” In 1966 it was: Amano, T., Co. Ltd. (T. Amano, president). Importers. 1139 E. Hastings.

Interview with George Tsuchiya, general manager of Amano. 1981. Nov. 24; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. “There were several semi-commercial makers of miso and shoyu in Canada, in the Vancouver area, prior to World War I, and at least one commercial miso manufacturer was in the area prior to 1927. In that year [sic, in 1929] Mr. T. Amano started Amano Brothers. p. 255. Listed as T. Amano Co. Ltd., 1139 E. Hastings St. In 1982 the T. Amano Co. was making a red miso and a sweet white miso.”

Talk with Michael Weiner. 1987. Dec. 16. Amano is presently the largest manufacturer of miso in Canada. They may soon break ground for a large, new miso and soy sauce plant.

Note: This is the earliest known commercial miso product made in Canada.

722. **Product Name:** Miso.

Manufacturer’s Name: Chonan (Rosaku) Miso Manufacturer.

Manufacturer’s Address: 707 Kilauea St., Hilo, Island of Hawaii.

Date of Introduction: 1929.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1928-29. p. 594.

Hawaiian Japanese Annual & Directory. 1936-37, p. Island of Hawaii p. 2. Ryôshaku Chônán (from Fukushima prefecture), koji manufacturer, 707 Kilauea, Hilo, Island of Hawaii.

723. Kinoshita, Asakichi; Inoue, E.; Aomori, Y. 1929. Miso oyobi miso-yo kome kôji no futsû seibun narabini sono tôkaryoku [The nutritional composition of miso and of rice koji used in miso, and the saccharifying power of the latter]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 24(7):77-79. [Jap]

Address: Jozo Shikensho 1. Gishi 2-3. Kenshu-in.

724. Ferrée, Christian Johan; Tussaud, J.T. 1929. *The soya bean and the new soya flour*. London: William Heinemann (Medical Books) Ltd. xi + 79 p. Illust. No index. 22 cm. Revised translation from the Dutch by C.J. Ferree and J.T. Tussaud of *Die Sojaboon en Duurzaam Sojameel*. [29 ref] • **Summary:** Contents: Foreword, by Sir Wm. Arbuthnot Lane, President of The New Health Society. Preface, by C.J. Ferrée (London). 1. Introduction. Literature. Name of the plant. Origin. Botanical particulars. Assimilative power of the soya plant. Inoculation. Soil requirements. Production and cost. 2. General ingredients of the various Manchurian beans. Composition. The value of soya protein. Vitamin in

the soya bean. Digestibility of the soya bean and its products. 3. Use in China and Japan: Bean sauce, soy, or shoyu, Chinese chiang (paste), tou-fu or beancurd, beans consumed as a table vegetable, bean refuse and bean cake are used as a fertiliser and for fattening hogs, bean oil is used as an illuminant (where it has not been superseded by kerosene), as a substitute for lard in cooking, and as a lubricant for greasing axles and parts of native machinery, miso and natto. First imports into Europe. Exports during the last five years from China and Japan. Imports during the last five years into Europe and America. The increasing rate of its cultivation. Manchuria–Production. Estimate of the world’s production of the soya bean. London the principal market. Future importance.

4. America. Australia. South Africa. Other British possessions and protectorates. Java (Dutch East Indies). Europe. 5. Unsuccessful experiments with soya flour. Ordinary soya flour. Extracted soya flour. Dr. L. Berczeller’s discovery. The new soya flour. Comparison with other cereal flour and other foods. Comparison in price with other cereal flour and other foods. Comparison in price of soya protein compared with other cereal foods. Comparative analysis of cereals. 6. Soya milk. Vegetable casein. Lecithin. 7. Increase in food value. Savings. Industrial application in foodstuffs. The importance of Dr. L. Berczeller’s soya flour for the food industry. Soya flour and the food laws. Uses of soya flour in: Bread, pastry, cake, biscuits, confectionery, sausages, infant foods and food for invalids, cocoa, chocolate, soup cubes, pudding flour. Uses in the kitchen. Soya flour recipes (for flour made using the Berczeller process), soya flour for diabetics, recipes for diabetics.

The Preface states: “In the following pages the writer has endeavoured to give an account of the numerous uses to which the soya bean has so far been put, and to visualise its future service to humanity through the means of a totally new and practical process by which this legume... may in future be used as an important article of food for general consumption throughout every quarter of the globe.

“In compiling the details relative to the soya bean flour, with which this brief summary principally deals, he trusts that he has succeeded in giving sufficient data to enable the reader to fully realise its value as a staple food from the economic point of view, as well as from the more domestic standpoint, so that the important fact may be fully realised that a new foodstuff of a very valuable nature... has now been brought within the reach of all nations to serve them in a most practical manner as an economic article of food.”

The book includes statistics on the imports and exports from 1923 to 1927 of “soya beans, soya oil, and soya cake in various countries including China, Japan, England, France, Germany, Holland, Norway, Denmark, Sweden, and USA.

The “new soya flour” is that developed by Dr. Berczeller. This book repeatedly praises that flour. “A few years ago Dr. Laszlo Berczeller, a Hungarian physiologist in Vienna, succeeded scientifically in finding a method which enables us to prepare from the soya bean a digestible and pleasantly flavoured flour without detracting from its nutritive value, and this method entirely succeeds in preserving all the good qualities contained in the bean itself. Physiological experts and analysts withhold no praise, as the following extracts will show: -” There follow words of praise from: (1) Dr. Alfred Schwicker, M.P., Royal Hungarian State Institute, Central Depot for Experimental Chemistry. (2) Dr. Stefan Weisser, King’s Counsellor, Royal Veterinary Physiological Experimental Station, Budapest. (3) Prof. A. Durig., The Physiological Institute, University of Vienna.

Marakujew (1928) estimates the production of soya beans in “Manchuria at 6 million tons at the utmost, the production of the whole of China at 16 million tons, and he is led to this figure by the conclusions of the Economic Bureau of the South Manchuria Railway, which estimates that the Manchurian crop in 1927 amounted to 37.1 million koku (5.88 million English tons), of which 2.6 million tons originated from South Manchuria, 3.3 million tons from North Manchuria” (p. 32). A table (p. 33) gives estimated world production of soya beans from 1923 to 1929 (6.6 million tons, forecast). The leading producers in 1929 (in million tons) are: China 5.250. Japan 0.580. USA 0.250. Java and Dutch East Indies 0.120. Other Asiatic countries 0.400. A soya milk factory was recently established in Denmark (p. 54). Although this book contains a bibliography of 29 references, most are very incomplete.

Photos show: (1) A soybean plant with roots, pods, and leaves. (4) Nodules growing on soybean roots. (5) One pod and seed each from inoculated and uninoculated soybean plants. (7) An immense field of soya beans in Manchuria. (8) Soya beans awaiting shipment, in house-shaped stacks under tarps, at Dairen. (13) Seeds of the most important varieties of soya beans now grown in the United States. (10) Two horses and a farmer cultivating a field of soybeans. (11) Harvesting soya beans. (12) Well selected, clean soybean seeds.

A map (frontispiece) shows where soybeans are cultivated worldwide. An illustration (p. 2) shows Shen-Nung, “The Heavenly Farmer,” reproduced from a print in a Vienna museum. One bar graph compares the nutritional composition of soya flour with that of cereals and animal products, and other foodstuffs (p. 13), another compares the calories (p. 46), and a third compares the cost of 1,000 calories (p. 48). Address: London.

725. Japanese American News Inc. / Nichibei Shinbunsha. 1929. Nichibei jûshoroku [The Japanese American directory. No 25]. San Francisco, California: The Japanese

American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]*
Address: San Francisco, California.

726. Sprecher von Bernegg, Andreas. 1929. Tropische und subtropische Weltwirtschaftspflanzen; ihre Geschichte, Kultur und volkswirtschaftliche Bedeutung. II. Teil: Oelpflanzen [Tropical and subtropical plants in international commerce; their history, cultivation, and economic significance. Vol. II. Oilseeds]. Stuttgart: Verlag von Ferdinand Enke. See vol. 2, p. 128-70. [48 ref. Ger]

• **Summary:** The soybean (p. 128-70). Contents: Introduction. Name, place of origin and history. Description of the plant: Systematic, morphology, varieties, selection. General conditions for growth: Climate, soil. Cultivation of the plant: Planting, care. Harvest and storage. Composition and products. Utilization: As a fodder plant, as a coffee substitute, industrial non-food uses, as a food (as a green vegetable, soy sprouts, soy chocolate, soymilk, casein, tofu and soybean quark {*tofu oder Sojabohnenquark*}, natto {*Buddhistenkäse*}, hamananatto, yuba, miso, shoyu or soy sauce {*Sojasauce*}). Production and trade.

Concerning green vegetable soybeans, the author states: “Three-quarter ripe soybean seeds yield a good, green vegetable (*Dreiviertelreife Sojabohnen geben ein gutes, gruenes Gemuese*).” Address: PhD, Titularprofessor an der Eidgenoessischen Technischen Hochschule, Zurich, Switzerland.

727. World Engineering Congress. 1929. Industrial Japan: A collection of papers by specialists on various branches of industry in Japan. Tokyo: Kokusa-Shuppan Insatsusha, International Publishing and Printing Co. 7 + 584 p. First World Engineering Congress. Illust. 23 cm. [Eng]

• **Summary:** Page 572: “... which is taken for breakfast in almost all houses of the country, and is very nutritious. Now, in this country, about 57,000,000 kwanme of miso are produced in the miso-making factories a year, and its value is estimated at about 32,000,000 yen. Miso is white or reddish brown...”

Page 578: “In strict signification, however, miso is distinguished into two classes, in one of which kome (rice) - koji or mugu (barley or rye) - koji is used with steamed soya bean and salt as raw material, and in the other soya-bean, koji and salt only are used. The former is ordinary miso, called *kome-miso* or *mugi-miso* respectively according to the use of *kome-koji* or *mugi-koji*, and Edo-miso and Sendai-miso belong...”

728. *Economist (London)*. 1930. Japan.–Gold standard–Prices–Foreign trade–Money. 110(4,506):23-24. Jan. 4.

• **Summary:** “From our correspondent. Tokyo, December 10.” Japan is preparing to return to the gold standard. Wholesale prices continued to move downward last month.

But Japanese prices are still about 20% higher than British or American prices. "The higher Japanese price level is accounted for largely by such 'sheltered' goods as red beans [azuki], miso, dried bonito, Japanese paper, mattings and tobacco (Government monopoly), prices of which, in most cases, are kept high for special reasons" (p. 24, col. 1).

729. Morse, W.J. 1930. Re: Soybean products collected. Trip to Manchuria and China. Letter to Dr. E.A. Hollowell, Office of Forage Crops, USDA, Washington, DC, Jan. 12. 2 p. Typed, with signature on USDA letterhead.

• **Summary:** Location: National Archives, College Park, Maryland. Record group 54–Bureau of Plant Industry, Soils and Agricultural Engineering. Subgroup–Div. of Forage Crops and Diseases. Series–General Correspondence, 1905-29. Box 93–Morse-Napier. Folder–Morse, W.J.-#4 F.C.I. Address: Tokio, Japan.

730. Dorsett, P.H.; Morse, W.J. 1930. Miso in Japan (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: USDA Bureau of Plant Industry, Foreign Plant Introduction and Forage Crop Investigations. 7,410 p. Unpublished log.

• **Summary:** * = Best photos. Page 3487 (8 Jan. 1930). Photos of the side and top of a small wooden tub (6 inches diameter, 4 inches high) of *Kairyō Hishio*, made by the Takagawa Co., Noda, Japan. "This form of miso is mixed with rice and eaten." The tub is bound with strips of bamboo and tied with three strands of rice straw rope. Note: *Hishio* is a seasoning with a consistency somewhat like that of applesauce—much softer than that of miso. Page 3488. Photos shows the same product in small jars 2½ inches in diameter and 3½ inches high.

Page 3596 (17 Jan. 1930, Tokyo). "Went to the Chikuma Miso Factory, one of the largest concerns of this kind we have seen. They use 200 bushels of dry soybeans and an equal amount of rice per day." Pages 3598-3601. Photos show: Catties or casks of miso in front of Chikuma Miso Factory. Same view showing paper covering cask. Loading casks of miso onto truck in front of factory. "Ricks of just recently returned empty catties in front of Chikuma Miso Factory ready for cleaning and refilling." Two Japanese men standing by empty and filled catties of miso. Inside Chikuma Miso Factory, two men standing by a tall vat of miso with four casks on the floor in front of them. One man is holding a long pole.*

Pages 3633-36 (21 Jan. 1930, Tokyo). Photos show: Miso ingredients on a bamboo sheathe/culm. Five different kinds of miso on a bamboo sheathe. Miso as sold wrapped in a bamboo sheathe plus the Japanese label measuring 4.6 by 7 inches. Pages 3733, 35, 38-39 (31 Jan. 1930, Tokyo). Photos show: (1) A cylinder of commercial miso (3 inches

diameter, 8 inches long) with labels, side and top views. (2) Miso (which contains turtle blood) in a small eight-sided wooden box (3¼ inches across), with label. (3) Two glass jars containing miso, with labels; side and top views. (4) Two small square boxes (4 by 4 inches) containing miso, one closed the other with top off to show miso. Page 3818. Photo of miso wafers with package, purchased in a confectionary shop in Yokohama, Feb. 7. "These wafers are very good." Page 3820. Photo of two packages of Okazaki Miso [Hatcho Miso], "said to be a famous brand." One is wrapped (apparently in bamboo sheath, showing label), one unwrapped. Package is 3½ inches wide and 8 inches long. Page 3895. Photo of glass jar of Rikyu miso with label, purchased in Tokyo Feb. 13 for 50 sen a jar. Page 3897. Photo of small jar of Kinzanji Miso (3 views with label). Sells in Tokyo for 30 sen each. Page 3902. Photo of small wooden box of "Tori [chicken] Miso." Sells in Tokyo for 35 sen each.

Page 3974-75 (Feb. 21). Visit Sendai Miso Jozo Jo, Sendaitenai, Oimachi, Tokyo. "Learned that much of their miso for local consumption is only aged for a week or ten days to two weeks, but that Miso for export trade to Canada, the United States and other countries is aged much longer, a year or more. This concern uses annually about 50,000 bushels of soybeans and an equal amount of rice for making Miso—plus 25,000 pounds of salt. Their yearly output is about 12,000,000 pounds. The wooden casks used to pack the Miso contain 200 pounds net weight and sell wholesale at Yen 10.00 to 13.00 per cask. For shipment abroad they use the standard 4½ gallon soy sauce wooden cask. It has a capacity of about 40 pounds and sells delivered at San Francisco at Yen 2.50 to 3.00 per cask."

Pages 3978-79. Photos taken at Sendai Miso Jozo in Tokyo show: (1) Steamed rice spread on out rice straw mats in a wave pattern covering the entire floor of a large room.* After cooling, rice bacteria (Koji [sic, koji starter]) is added, and after three days the malted rice is mixed with boiled or steamed soybeans in the making of soybean miso. (2) Miso mashing tubs (*usu*) used for mashing boiled soybeans when making miso.* Each tub is made from a hollowed tree trunk and first used by Lord Governor Date in the "Year of Kaiei" about 300 years before the start of the Meiji Period (in 1868). Note: Daté Masamune (DAH-tay Mah-sah-MU-nay; lived 1567-1636) of Sendai was the first Japanese to make miso in a factory, starting in the early 1600s.

Page 4022, 4024 (Feb. 23). Photos: A slice of large white Japanese radish (*daikon*) which has been preserved in soybean miso. Thin sugared cookies [rice crackers] named *Satou Miso Senbei*, in which soybean miso has been mixed.

Pages 4082-86. Photos of handsome boxes of miso with labels each purchased in the food department of a large department store in Tokyo. (1) Box (4½ by 6 inches) of Kinzanji Miso. "Kinzanji is the name of a temple in Kyoto and this miso was first concocted by a priest in this temple."

(2) Box (4½ by 6 inches) of Saikyo Miso. “A form of white miso sweetened, and containing a large amount of rice.” (3) Box of *Wasabi miso*, Japanese horseradish mixed with miso. (4) Box of *Tori miso*, which has chicken meat in it. (5) Box of *Goma miso*, which has sesame seeds mixed in.

Page 4140. Photo of rice bacteria (koji [sic, koji starter]) from T. Aseda Miso Factory, Tokyo, Feb. 28. Name: *Kuroban Moyashi*. Used in the production of miso malt [rice koji]. The contents of this package will inoculate 5 koku (25 bushels) of rice. Price: 0.35.

Pages 4313-22 (12 March 1930). Went to Shimbashi Station and took the electric tram for Oimachi, Tokyo, to visit the Sendai Miso Jozoyo Miso factory. Photos: (1) Interior of miso mixing room. Bean crusher and mixer were invented by this company. (2) Shipping room, where casks of miso are weighed and loaded into trucks for delivery.* (3) Large soybean steamer with live steam. (4) 300 year old *usu* for crushing soybeans. (5) View of a room full of wooden miso tanks/casks [vats] curing from above the top of the vats.* The top of each vat is weighted with rocks. Each room contains more than 80 vats. Each cask is about 7 feet high and 8-10 feet in diameter. The miso is aged here for a year or more. The company has several such rooms. (6) Soybean steamer in operation. (7) A large pile of rice koji ready to mix with an equal amount of cooked soybeans. To the right is a portion of a small wooden mixing tub with bamboo hoops. (8) Two wooden casks [kegs] of miso, packed and ready to ship to San Francisco, California.* “They have considerable trade there for this product.” (9) A cooper at the Sendai Miso Factory seated on the ground and making bamboo hoops for hooping miso casks.*

Page 4344-45 (March 10). Photos: (1) Small box and label of white miso (*Shiro miso*) made from polished rice and soybeans. Purchased from Mikonaya Miso Co., Tokyo. The three characters are written horizontally from right to left. White miso is not used as extensively as red miso. It is “used on special occasions in soups and eaten as cheese with other foods. White miso is much more expensive than red and has more rice in it.” (2) Small circular box of rice koji from Mikawayaya Miso Co. Can be used to make white miso or sake-rice wine.

Page 4390-91 (20 March 1930, Tokyo). Photos: (1) Boxes of the various ingredients used in making Sendai Miso. From left to right: Dry soybeans, soaked soybeans, polished rice, steamed rice, steamed rice with koji and salt, rice mould (koji), salt mixed with steamed soybeans and moulded rice, finely ground soybeans, coarse miso one week old, coarse miso one year old. “These were received from the Sendai Miso Factory, Tokyo, Japan, March 20, 1930.” (2) Vegetables preserved in red soybean miso. The vegetables are Japanese white radish (*daikon*), cucumber, burdock root, small vegetable melon [*uri*] and egg plant [eggplant].

Page 4444-45 (23 March 1930). Photos at the Sendai Miso Factory, Tokyo: (1) Steamed soybeans cooling on a floor in a wave pattern. “After the beans are cooled, they are mixed thoroughly with molded rice [koji] and salt (shown in the background in a mixing machine). The mixture is placed in large curing vats and allowed to cure for about three months.” (2) A second view of the same room from a different angle. Address: Agricultural Explorers, from USDA, Washington, DC.

731. Dorsett, P.H.; Morse, W.J. 1930. Miso in Japan (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: USDA Bureau of Plant Industry, Foreign Plant Introduction and Forage Crop Investigations. 7,410 p. Unpublished log.

• **Summary:** Page 6820 (21 Dec. 1930, Kobe, Japan. Mr. Morse’s notes). “Mr. Saito at Dairen had advised us that there were many places in Kobe where meat was preserved in soybean miso.” Had no difficulty in finding three such places, where “we found the men busy in packing meat in white miso. In the Kobe and Kyoto districts white miso is manufactured quite extensively. Small meat shops are the only establishments putting up the miso-preserved meat. For this product beef is used and white miso. Small slices of beef about the size of the palm of the hand and about ¼ inch thick are placed on a layer of miso (about ¼ inch thick), then a layer of miso and another layer of meat. About 1½ pounds of beef are packed with miso in each tub which sells for two yen. The meat is best after being preserved in miso about 7-10 days and does not keep well after two weeks except in rather cold weather. Miso preserved meat is always boiled. White miso is always used for preserving fish and meat (beef) while red miso is used for preserving vegetables, the red miso being considered too salty for meat. Several meat shops were visited and we always found the same products and same methods of preserving the beef. Apparently this product is very popular in the Kobe district. At one of the shops we were advised that there are some miso-meat preserving places in the Tokyo district.” Photo: Small tubs of miso preserved meat displayed in front of a meat shop in Kobe.

Pages 6822-23 (22 Dec. 1930, Kyoto, Mr. Morse’s notes). At the Imperial Agricultural College they met Isawo Namikawa, Professor of Horticulture, who said that Kyoto is noted for several special soy products such as white miso, soy sauce, and natto. Kyoto soy sauce is lighter in color, not so heavy, and not quite as salty as soy sauce made in other parts of Japan. “In looking around Kyoto in our little spare time we saw no places where meat is preserved in miso.”

Pages 6931-32 (7 Jan. 1931). Morse went to the Imperial Department of Agriculture in Tokyo and met the director, Mr. A. Manabe, who provided information,

statistics, and recent publications on soybean acreage, production, utilization, and industries in Japan, Chosen [Korea], and Taiwan. These are the most complete yet received. Mr. Manabe stated that soybean acreage and production is gradually decreasing in Japan proper. This is due mainly to the increased acreage of more intensive farming, especially truck crops and rice. However the acreage of soybeans for green manuring purposes is increasing rapidly, especially in the southern half of the main Island and Kyushu Island.

Japan proper produces more than 2,500,000 koku of soybeans but uses over 7,500,000 koku; the difference is imported from Chosen and Manchuria. The soybeans imported from Manchuria are "are of much lower quality than beans from Japan proper and Chosen and are used primarily for the manufacture of soy sauce, miso, bean oil and bean cake. The beans from Japan proper and Chosen are utilized primarily for food, such as bean curd (Tofu), confections, flour and green vegetable beans. The following table gives the ratio in percent of soybean utilization in Japan:

Miso 22.7%. Soy sauce 22.7%. Bean oil and bean cake 21.6%. Bean curd [tofu] 15.4%. Green vegetable beans 0.8%. All other food uses 6.0%. Feeding purposes 6.2%. Green manure 2.5%. For planting [seed] 1.6%. Miscellaneous uses (other than food) 0.5%. Note: These figures total 100%. Thus, 22.7% of the soybeans used in Japan are used to make miso, 22.7% are used to make soy sauce, 21.6% are crushed to make soybean oil and cake, etc.

Page 6937 (10 Jan. 1931, Tokyo, Notes by Mr. Morse). Spent most of the day in the Shinjuku district looking up soybean products. "More String Natto in rice straw packages was observed in this section than any we have visited. At the stores we found considerable quantities of fish preserved in white miso and also fish preserved in sake mash. The latter is said to keep much longer than the miso preserved fish and if it keeps long enough might afford a good article of export to the United States, for undoubtedly it would prove far less harmful than some of the products [alcohol] now used in violation of the 18th amendment... Nearly all food stores carried a variety of vegetables preserved in red miso."

Page 6943 (12 Jan. 1931, Kobe). Visited a large miso meat preserving place that packs 5,000 to 6,000 tubs of miso preserved meat yearly. The proprietor said that about 3,000,000 tubs are sold each year in the Kobe district. The small tubs, costing 70 sen each, hold about 2 pounds of beef. The Kobe district is noted for its fine quality of beef. Photos (p. 6946-47) show these small flat tubs.

Page 6945-46 (Jan. 13, Kyoto). Visited a large miso factory, where both red and white miso are made. White miso is manufactured quite extensively in the Kyoto and Kobe districts; it keeps only about 1 month in the summer, but about 3 months in the winter. A table shows the most

famous forms of miso made in Japan: Sendai miso—red. Kanto miso—red. Okazaki miso—black. Country miso—red. Kinzanji miso—red. White miso—white.

Pages 7003-04 (Jan. 19, Tokyo, Morse's notes). "At evening supper we had for dinner beef preserved in white miso. After broiling, the flavor of the meat reminded one of that of the sugar cured hams of the Southern States. The meat had been cured just eight days and was well flavored through."

Page 7116 (Jan. 29). In a letter to Dorsett in Peking, Morse states that the broiled, miso preserved beef was "delicious" and tasted like ham. "I also had some white miso preserved fish. Although it was good, I did not care nearly so much for it as I did the beef." Address: Agricultural Explorers, from USDA, Washington, DC.

732. Morse, W.J. 1930. Soybean utilization. *USDA Farmers' Bulletin* No. 1617. 27 p. Jan. Revised 1932.

• **Summary:** Contents: Introduction. Soybeans for human food: Dried beans ("The Easycook and Hahto varieties, however, cook fully as soft as other beans." Also used as a substitute for coffee or for salted peanuts), green or vegetable beans ("The Hahto and Easycook varieties have been found especially valuable for use as green beans"), soybean flour, soybean oil, soy sauce, soybean sprouts, soybean vegetable milk ("used so extensively in China." Also mentions the residue [okara]), soybean curd. Soybeans for livestock: For swine, dairy cattle, beef cattle, sheep, poultry. Soybeans for oil: Methods of processing beans for oil, utilization of soybean oil. Soybean meal: Soybean meal for human food, soybean meal for stock feed, for swine, for dairy cattle, for beef cattle, for poultry. Soybean meal as a fertilizer. Miscellaneous uses of soybean meal. Soybeans for hay: Soybean hay for dairy cattle, for beef cattle, for horses and mules, for sheep, for swine, for poultry. Soybeans for pasturage: Swine, sheep, or poultry on soybean pasturage. Soybeans for silage. Soybeans for soilage [green crops for feeding confined animals; a term first used in 1928]. Soybeans for soil improvement. Soybean straw: Feeding value, and fertilizing value of soybean straw.

"Soybean milk in the form of a powder is a commercial product in some European countries, and in parts of the United States it has been used in special feeding cases" (p. 5). "In many cities in the United States having a large oriental population fresh bean curd may be found in the Chinese and Japanese markets" (p. 6).

Photos show: (1) Six men steaming soybeans while making miso in Japan. (2) Muffins made from wheat flour and soybean flour. (3) Making soy sauce in a Chinese courtyard. (4) Grinding soybeans with a stone mill to make soybean milk in China. (5) "Blocks of freshly made bean curd, 'tofu,' as sold in the markets of the Orient." (6) Loading soybean oil in tanks at a soybean oil mill, Harbin, Manchuria. (7) Soybean cakes awaiting shipment at a

Manchurian port. (8) Hogs in a field of soybeans. (9) “Pasturing soybeans and corn with sheep is a common practice in the Corn Belt states.” (10) Corn and soybean plants growing together for use as silage; a boy is standing by the plants. (11) “A fine growth of soybeans to be used for soiling.” Address: Senior Agronomist, Office of Forage Crops and Diseases, Bureau of Plant Industry, Washington, DC.

733. Dorsett, P.H.; Morse, W.J. 1930. Re: Miso. Letter to Mr. Knowles A. Ryerson, Foreign Plant Introduction, Bureau of Plant Industry, USDA, Feb. 15. 2 p. Typed, without signature (carbon copy).

• **Summary:** A detailed discussion of the importance of miso in Japan. Location: National Archives, College Park, Maryland. Record group 54–Bureau of Plant Industry, Soils and Agricultural Engineering. Subgroup–Div. of Forage Crops and Diseases. Series–General Correspondence, 1905-29. Box 93–Morse–Napier. Folder–Morse, W.J.–#4 F.C.I. Address: The Imperial Hotel, Tokyo, Japan.

734. Morse, W.J. 1930. Utilizacion de la soya [Utilization of soya]. *Cuba (Santiago de las Vegas). Estacion Experimental Agronomica, Circular No. 69.* 40 p. May. Translation by Emma L. Sena of USDA Farmers’ Bulletin 1617. [Spa]

• **Summary:** In the introduction, Ing. Francisco B. Cruz, Director of the Agronomic Experimental Station, E.C., praises an imported soy oil named “Aceite comestible de Soya.” A full-page ad for this product (just before p. 36), apparently with the brand name Excelsior, is also shown. Address: USDA, Washington, DC.

735. Kellogg, John Harvey. 1930. Soybeans as human food. Paper presented to the American Soybeans Grower’s Association, Sept. 11. 20 p.

• **Summary:** Dr. Kellogg shows that he has an excellent knowledge of the world literature on soybeans and soyfoods, much of which he summarizes in this speech. “Many years ago (1899), the United States Department of Agriculture, called upon me to undertake the preparation of a vegetable meat. The Assistant Secretary, Dr. Charles Dabney, wrote me, suggesting that the navy bean might be used for the purpose. I found, however, as I expected, that this legume was not suited to the purpose. At that time the soybean was not grown to any extent in this country, I was wholly unacquainted with it, and so naturally sought to find in nuts, especially the peanut, a solution of the problem, and succeeded in producing a vegetable meat, Protose, of which several thousand tons have since been made and consumed. But the introduction of the soybean renders quite unnecessary any other substitute for flesh meats.” The author discusses his belief that primitive man subsisted wholly upon plant products (i.e. ate a vegan diet “according to Prof. Elliot of Oxford University, Prof. Ami of Montreal,

and other distinguished paleontologists”), and the nutritional value of soybeans and their basic-ash quality. “All meats yield a highly acid ash. The excess of acid in these foods produces a lowering of the alkalinity of the blood and tissue fluids when they are freely used, a condition which is known as acidosis.” He also discusses soya sauce (which is now being manufactured in the USA), miso (which like soy sauce has a flavor resembling that of the osmazomes found in meat and meat sauces), roasted soy nuts (resembling roasted peanuts), pressure cooking whole soybeans, adding soy meal (flour) to breads, soymilk being distributed in bottles in parts of China and Japan, soy cheese [tofu], and the many health benefits of soy milk described in the medical literature, the many health problems caused by consuming flesh foods.

“Von Noorden, the world famous German physician, has demonstrated that the soy bean is of very great service in changing the intestinal flora.” Note: This is the earliest document seen (June 2003) concerning soy and changing the intestinal flora. It is also the earliest document seen (June 2003) that uses the phrase “changing the intestinal flora” in connection with soy.

“In spite of the frantic efforts of vested interests to promote the uneconomic live-stock industry, it will no doubt gradually disappear as a true science of agriculture is developed and the country becomes more densely populated. The conversion of vegetable into animal protein by feeding to steers and pigs, is one of the most wasteful of all human activities. Armsby has shown that 100 pounds of digestible vegetable protein are required to produce 3 pounds of meat protein...”

Discusses Stefansson’s absurd so-called meat-eating experiment, which was really a publicity stunt. Stefansson took no more than 20% of his calories in the form of lean or muscle meat. The rest of his diet was fat. “Excessive meat consumption is one of the begetting sins of the people of this country. Our per capita meat consumption is 5 ounces per day, just 5 times that of Italy (1.0 oz.) and ten times that of North China (0.5 oz.), while the average native of South China eats no meat at all, and is one of the hardest and most industrious of workers.”

“Thanks to the efforts of our efficient Plant Introduction Bureau, the soybean is beginning to get a start toward recognition and appreciation in this country; but it is evident that a plant possessed of such superlative values and such astonishing versatility and adaptability should receive far more serious attention than has heretofore been given it by the agriculturalists of this country... There can be no doubt that it is destined to play a large part in the feeding of America’s millions...”

Note: This is the earliest English-language document seen that uses the term “soy nuts” to refer to soynuts. Address: Battle Creek, Michigan.

736. Morse, W.J. 1930. La utilizacion de la soja en diversas industrias [The utilization of soya in various industries]. *Hacienda (La) (Buffalo, New York)* 25:298-301. July; 25:347-49. Aug; 25:394-96. Sept. [1 ref. Spa]

• **Summary:** This is a translation of USDA Farmers' Bulletin 1617, but with excellent new illustrations. Contents: Introduction. Soybeans in the human diet: Whole dry soybeans, green vegetable soybeans, soy flour, soy oil, soy sauce, soy milk, tofu (*cuajada de soja*). Soybeans in the feeding of domestic animals. Soy oil: Extraction, use. Soybean cake: as a human food, as a livestock feed, as a fertilizer. The value of soybean forage. Soybean in silage. Soya as green forage. Soybeans for the improvement of soils. Soybean straw.

This article contains many interesting photos: 1. A man with a hand turned stone mill in China grinding soybeans to make soymilk. 2. Soybean cakes stacked and partly covered with tarpaulins at a port in Manchuria. 3. Earthenware vats used for making soy sauce in a courtyard in China. 4. Steamed soybeans being cooled to make miso in Japan. 5. Soybeans intercropped with corn. 6. Manchurians outside a soy oil factory in Dairen. The equipment was installed by the French Oil Mill Machinery Co. 7. Carrying round soybean cakes in a cart at the same factory. 8. A soybean mill at Yokohama, Japan. 9. An Anderson Expeller for the extraction of soy oil. 10. A tractor pulling rotary disks for cultivating soybeans in the USA. 11. Harvesting soybeans with a tractor in the USA. 12. A tractor pulling a harvester-thresher combine in the USA. Address: USDA, Washington, DC.

737. Morse, W.J. 1930. Soybeans in the Orient. *Proceedings of the American Soybean Assoc.* 3:96-100. Eleventh annual field meeting. Held 10-12 Sept. 1930 in Illinois.

• **Summary:** This letter was written by William Morse on 20 July 1930 from Dairen, Manchuria, to Dr. W.L. Burlison, President of the American Soybean Growers Assoc. at the University of Illinois. It describes the travels of Dorsett and Morse as agricultural explorers for the USDA, studying soybeans and soyfoods, in Manchuria, Japan (Hokkaido and Tokyo), and Korea (Seoul).

"It is recalled that last season the use of the soybean as a green vegetable was described. Throughout the season, it was found that the green vegetable was a very popular food with the Japanese from one end of the Japanese Empire to the other. The vegetable soybean is classed as a garden bean and as such is extensively grown by the Japanese truck farmers."

The authors were in Hokkaido from mid-August until early October, and they visited all the principal soybean sections. "The Obihiro station in the eastern part of the island [of Hokkaido] is conducting the most extensive work in breeding and variety testing. We succeeded in collecting a very large number of varieties and selections of this

northern region as well as information on culture, harvesting, threshing, insect pests, and diseases. To supplement this material, we obtained a large number of still and motion pictures of very interesting scenes of the Hokkaido soybean industry."

They arrived in Korea on 20 Oct. 1929 and established headquarters at Keijo (Seoul). "We found Korea to be a most interesting country and different from anything we had seen in Japan. One of the most amazing things was the extent to which soybeans are grown. Almost equally amazing was the large number of native Korean soybean varieties we found in the various sections and at the experiment stations. At the Suigen Experiment Station, they have more than one thousand native Korean varieties and selections under test. The authorities were very generous and gave us samples of each. In addition to this collection, we obtained a few hundred samples from Korean farmers, grain merchants on village market days and from village and city grain dealers. The Korean Department of Agriculture added about 300 samples to our collection by obtaining seed of the principal varieties from the village agricultural societies in each of the prefectures of Korea.

"Altho the Koreans do not use the soybean as extensively for food as do the Japanese, considerable quantities are used and in quite different ways. The beans are used principally boiled with other grains such as millet or kaoliang. They are also used in making miso and soy sauce, but these products are made quite differently from those of Japan or China. Soybean sprouts are found very abundantly in all of the markets and at all of the small food stores. The beans produced in Korea are for the most part excellent quality and are largely shipped to Japan for the manufacture of miso, soy sauce, bean curd, and natto. Soybeans when soaked with chopped millet or kaoliang straw are used universally for feeding oxen and cows, the common work animals of Korea.

"We left Korea about the first week of December [1929] for our Tokyo headquarters and collected seed samples and products as we went along. From the latter part of December until the latter part of March, we put in full time collecting soybean products and learning of their use and manufacture. We succeeded in collecting a large number of interesting products, as the Japanese use the soybean very extensively in their daily diet. In the making of cakes, candies, and numerous other confections, the roasted soybean is used in a similar manner to the peanut in America. Of course, soy sauce, miso, bean curd, and natto are the principal soybean products and the ones most extensively used. As an example of the large use of miso, which is used as a breakfast soup with vegetables and also in preserving fish, vegetables, and meat, we visited three large miso factories in the Tokyo district and found that each produced about one million pounds of miso yearly. In

addition to these three large factories, there were numerous small factories scattered throughout the same district.

“As the planting time was approaching in Manchuria, we left Tokyo the latter part of March and arrived in Dairen, Manchuria, the first of April... This country is the real land of the soybean and Dairen, the real city of the soybean. In 1929, 29.2 percent of the total cultivated area of Manchuria was devoted to the growing of soybeans, producing more than 178,000,000 bushels of seed, thus leading all other crops in acreage and production. The Port of Dairen handles about eighty (80) percent of the exports of beans, bean cake, and bean oil.

“The planting season for soybeans in Manchuria begins about the first of May... We had rather expected to find a large number of products made from beans, bean cake, and bean oil but our findings thus far have been very meager. The oil is used in the manufacture of soaps, paints, lard substitutes, and salad oils, but only a very few factories are engaged in producing these products. The beans are used chiefly for oil and oil cake, but during the last three or four years, the demand of European mills for beans has had a serious effect, not only on the Dairen soybean oil mills, but also on the oil mills throughout North and South Manchuria. In Dairen, at the present time, only about forty-five soybean mills are active during the crushing season, whereas four years ago there were about ninety. The oil cakes are for the most part shipped to the Japanese Islands for feed and fertilizer (chiefly fertilizer), to China and the East Indies for fertilizer, and to America and Europe for cattle and poultry feed.”

“With this letter we are sending some lantern slides illustrating various scenes of the soybean industry in oriental countries... With best wishes for a most interesting and successful 1930 meeting.”

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the term “vegetable soybeans” (not preceded by the word “green”) to refer to green vegetable soybeans.

Note 2. This letter was reprinted in *Soybean Digest* (April 1945, p. 11-12). Address: USDA, Washington, DC.

738. Dorsett, P.H.; Morse, W.J. 1930. Soybean chiang in Manchuria and China (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: USDA Bureau of Plant Industry, Foreign Plant Introduction and Forage Crop Investigations. 7,410 p. Unpublished log.
• **Summary:** * = Best photos. Page 4620 (2 May 1930, Hsiungyaocheng, Manchuria). The South Manchuria Railway agricultural experiment station here is testing about 60 soybean varieties under the direction of Mr. Kaneyasu Hisatake [Japanese name], agricultural engineer. “About 90% of the soybeans planted in this area consists of a

greenish yellow variety called *Te-cha-chin* which is used for oil and is also utilized by the farmers for bean curd, miso, and other food purposes.” Page 4641-42 (May 8, Kungchuling, Manchuria). Mr. Kanda [Japanese name] is director of the Kungchuling experiment station.

Kungchuling is the center of a very extensive soybean growing section and the experiment station is doing much work with the improvement of native [indigenous/domestic] soybean varieties. Over 500 varieties are under test yearly and more than 2,000 varieties have been experimented with. “The great range in size, color, and shape of the seed was very interesting.” Visited “some Chinese stores where Chinese soybean miso and soy sauce were sold. The Chinese miso is more liquid (like a thin paste) than the Japanese and not ground, but both taste very much alike.”

Page 6252-55 (23 Oct. 1930, Peiping, China). Went to the “pickle factory of Chang Shun Kung, where we got information about soybean jam [jiang], pickles, etc.” Photos taken at the factory of Mr. Chuang Shun Kung: (1) “View across soybean jam and pickle jars covered with matting.” Factory buildings in the background. (2) “Looking along a portion of a line of large earthen jars filled with soybean jam [jiang].* These jars hold about 800 catties of jam.” (3) Same factory. Mr. W.J. Morse standing by the end jar in one of the rows of jars.* (4) “The end and half the length of a dry brick of wheat and soybeans, curing stock for Chinese jam made of soybeans.” This product is used in making soy sauce and three forms of soybean jam or paste. Chinese name *Ton chih* [sic, *Tou chih*] meaning “salted beans” [soy nuggets]

Pages 6339, 6344-45 (3 Nov. 1930, Peiping, China. P.H. Dorsett’s notes). “After tiffin we went to the soy sauce, soy jam and pickle establishment of a Mr. Wang in the outer city to the southwest. This establishment is some 300 years old and many of the large earthen glazed jars are of the age of the establishment.” Photos of Mr. Wang’s Lan Hsin Chai Soy Sauce Factory: (1) “View from the northeast corner of the compound just in front of the soy sauce processing room, looking over the large earthen jars of jam [jiang], pickles, etc.” Some jars are covered with reed grass matting or conical lids.* (2) Another view from the southwest corner of the compound.

Note: This is the earliest English-language document seen (July 2003) that uses the term “soybean jam” or “soy jam.” Address: Agricultural Explorers, from USDA, Washington, DC.

739. Dorsett, P.H.; Morse, W.J. 1930. Pickled soybean curd, red and white [Fermented tofu] (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: USDA Bureau of Plant Industry, Foreign

Plant Introduction and Forage Crop Investigations. 7,410 p. Unpublished log.

• **Summary:** Page 6264 (24 Oct. 1930). While in Peiping, China, P.H. Dorsett writes: "... went to Hsi Tan Pailou Street in the northwestern part of the city before tiffin where we found a number of kinds of bean curd... We got a number of still and motion pictures, also quite a collection of soybean products which we hope to get photographed during the afternoon."

Page 6270. A photo shows several small crocks (about 15 cm {5.7 inches} in diameter) in a small carrying case. Dorsett names them "Pickle: soybean curd, white and pink... Peiping, China... Red chiang tofu and white chiang tofu... Chinese name 'Tu ju' meaning 'curd milk.'"

Page 6271. A photo shows two crocks of about the same size, one with a tied paper lid, the other open at the top. "White pickled beancurd. Peiping, China... Chinese name, chiang tofu (white). Small blocks of bean curd placed in jar of rice wine and salt. Jar sealed and placed in sun, where curd cures for a year."

Page 6272. A photo shows two crocks of about the same size, one with a tied paper lid, the other open at the top. "Pink bean curd pickled... Peiping, China... Chinese name, chiang tofu (red). Small blocks of bean curd placed in jar of rice wine and salt with red rice [angkak] (produced by fungus growth). Jar sealed and placed in sun, where curd cures for a year."

Note: This is the earliest English-language document seen (Feb. 2007) that uses the terms "pickled beancurd" or "White pickled beancurd" or "chiang tofu" or "Red chiang tofu" or "White chiang tofu" or "Tu ju" to refer to fermented tofu. Address: Agricultural Explorers, from USDA, Washington, DC.

740. **Product Name:** Miso, Koji.

Manufacturer's Name: Igarashi Miso, Koji Seizo-sho.

Manufacturer's Address: P.O. Box 254, Loomis, California.

Date of Introduction: 1930.

New Product–Documentation: The Japanese American Directory. 1930. p. 199.

741. **Product Name:** Miso.

Manufacturer's Name: Noguchi Miso Seizo.

Manufacturer's Address: 119 Lake St., Salinas, California. Phone: 634.

Date of Introduction: 1930.

New Product–Documentation: The Japanese American Directory. 1930. p. 140. Also in 1934 directory, p. 141. In Japanese: Noguchi Miso Koji Sei (zō) sho. In English: 119 Lake St. Phone has changed: 834.

742. **Product Name:** Miso, Koji.

Manufacturer's Name: Sacramento Miso, Koji Seizo-sho.

Manufacturer's Address: 215 M St., Sacramento, California. Phone: MAin 4018-M.

Date of Introduction: 1930.

New Product–Documentation: The Japanese American Directory. 1930. p. 165.

743. Fujimoto Shokai. Fujimoto Co. 1930. Fujimoto Co.: Importer, manufacturer, exporter (Ad). In: The Japanese American News. 1930. The Japanese American Directory (*Nichibei Jūshoroku*). No. 26. p. A-11. [Jap; Eng]

• **Summary:** Ad (full page). The top ¼ of this ad is in English. Fujimoto Shokai's factory (238 Jackson St.) makes Kanemasa brand shoyu, miso, koji, and Japanese-style pickles (*tsukemono*). The San Francisco Branch (Shiten; 1640 Post St.) also imports and exports Japanese- and Western-style foods and goods. Main office cable address: "Fujimoto" San Francisco. Address: Factory: 238 Jackson St.; Office: 1640 Post St. Both: San Francisco, California. Phone: Factory: DOuglas 1216. Imports: WEst 0733 & 0734.

744. Japanese American News Inc. / Nichi-Bei Shinbunsha. 1930. Nichibei jūshoroku [The Japanese American directory. No 26]. San Francisco, California: Nichi-Bei Shinbunsha. 765+ p. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Most entries in this directory give the company name in Japanese characters, followed by the address and phone number (if any) in English. There are many smaller, vertical ads on the lower half of quite a few directory pages, usually for a company listed on that page. Most are either mostly or entirely in Japanese.

Contents: Ads (full- or half-page, in Japanese and English, p. A-1 to A-34). Table of contents of Japanese businesses in San Francisco, organized by type of business (p. 3). Directory of northern California (in Japanese and English, p. 3-394). Table of contents of Japanese businesses in Los Angeles, organized by type of business (S-19). Directory of Los Angeles, Southern California, and all other U.S. states (p. S-1 to S-340).

On the front cover (which is mostly in English and is at the "back" of the book) is an illustration of the dome of city hall. In the center, vertically in Japanese characters is written *Nichibei Shinbun-sha*. The many directory listings for soyfoods manufacturers and ads for soy-related companies are each given separately. Address: Ellis Street, San Francisco, California.

745. Shi, Shenghan. 1930. Ch'i-min yao-shu [Ch'i-min yao-shu (6th century Chinese agricultural encyclopedia)].

Reprinted by Commercial Press, Shanghai, China. [Chi]* Address: China.

746. *Los Angeles Times*. 1931. Why import soy? We can grow this bean to perfection. Jan. 11. p. J6.

• **Summary:** This article seems to be based on: Morse, W.J. 1927. "Soy beans: Culture and varieties." *USDA Farmers' Bulletin* No. 1520. 34 p. April. It begins: "Californians are accustomed to thinking of the soy bean as a cover crop. It is interesting to note that in its native land, Manchuria, this use of the soy bean is of small importance." There the soy bean is used mainly as a food product; only the by-products, such as bean cake and straw, are used as fertilizer.

Food products include a paste [jiang], fermented for about 2½ months, soy [sauce], bean curd [tofu], dry bean curd cakes, bean curd wafers, flour, and "milk." The expressed oil is used locally mainly for illumination [in lamps]. The better grades are used for cooking and the poorer grades for lubricating, for making printer's ink and varnish, and "as a waterproofing material in the manufacture of cloth, paper umbrellas, and lanterns.

The bean cake is used to fatten pigs and cattle. In Japan, the cake is used as a fertilizer for mulberry trees and rice fields. "In Manchuria the cake is crushed and mixed with oil and arsenic and placed on the roots of trees to poison insect pests." This insecticide is used to kill the pests that injure the wild trees where silkworms live.

The soy bean was grown in the United States as early as 1804, but only as a curiosity. In Europe it was mentioned as early as 1790. The soy bean first became known worldwide during the war between Russia and Japan [1904-05]. During the war, the many troops quartered in Manchuria created a large demand for soybeans as food. Local farmers increased their acreage. But after the war they found they had a surplus that was far too great for the demand in the local market or the Orient. The price dropped and a trial shipment was sent to London. The timing was perfect, since English vegetable oil mills were running part time because of a small crop of cottonseed and the failure of linseed in the USA and the Argentine. For the rest of that season, the English mills ran full time on soy beans.

747. Morse, W.J. 1931. Visit to Kyuemon Hayakawa Miso Co. in Okazaki, Japan (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. *Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon*. Washington, DC: USDA Bureau of Plant Industry, Foreign Plant Introduction and Forage Crop Investigations. 7,410 p. See p. 6997-7000. Unpublished log.

• **Summary:** W.J. Morse took notes and photos of his visit to Okazaki on 16 Jan. 1931. He was told by an innkeeper in Okazaki that there are "two factories in Okazaki making the famous Okazaki black miso... We found the Kyuemon Hayakawa Miso Co. factory about 3 miles from the inn. The master of the factory took us through the plant and explained each step of manufacture. Okazaki miso is made entirely from soybeans while other forms of miso are made

from rice and soybeans. It takes twenty months to cure black miso. This company sells about 50,000 kan yearly.

"Okazaki miso keeps indefinitely and is used in making soups and preserving vegetables. At breakfast at the inn this morning we had black miso soup and found it had a much better flavor than red miso soup. The black miso is also sometimes used in making forms of soy sauce [tamari] by adding water."

Photos (p. 6999-7000) show: A large wooden cask or tub filled with Okazaki black miso and held together by many wide braided bamboo hoops. The cask is several feet taller than the miso maker (wearing an apron with a crest symbol or *mon* on the front) standing next to it. The top of each cask is piled high with about 1,200 pounds of stones to weight the miso (3 photos).

Page 7031 (17 Jan. 1931, Tokyo). In a letter to Dorsett in Peiping, China, Morse comments on the two factories making black miso in Okazaki.

Page 7053 (27 Jan. 1931). Morse notes in a cover letter accompanying two parcels sent from the American Consulate in Tokyo to Mr. K.A. Ryerson, Foreign Plants, B.P.I. [Bureau of Plant Industry], Washington, DC: "Of the products the most interesting is the famous Okazaki Black Miso under [product] numbers 6670 and 6671 which were obtained on a recent trip to Okazaki to learn the process of manufacture. This form of miso is the only one made wholly from soybeans as other forms are made with soybeans and rice. Black miso has been made at the same factory for about three hundred years and no improvements have been made in the methods of manufacture." Address: Agricultural Explorers, from USDA, Washington, DC.

748. William Morse examining four wooden boxes of Okazaki miso [Hatcho miso] at Hayakawa Kyuemon Shoten in Okazaki, Japan, 16 Jan. 1931 (Photograph). 1931.

• **Summary:** This 6½ by 8½ inch black-and-white photo has been dated from the log of the Dorsett-Morse Expedition (p. 6997). There are three rectangular wooden boxes and one round wooden box. Three of the four are closed and on the front of each is an illustration showing a man with a raised sword on a bridge in Japan; a young boy is at his feet. On one pillar of the bridge is written in large Japanese characters "Yahagi Hashi," since the Yahagi River flows underneath it.

Note 1. According to *The Book of Miso* (Shurtleff & Aoyagi, 1976, p. 219): "A Kabuki drama tells of how Hideyoshi Toyotomi (1536-1598), the child of poor farmers in central Japan's Aichi prefecture, rose to become one of Japan's most powerful feudal lords. When only ten years old, the child is said to have fallen asleep one night on a bridge near his home, wrapped only in a straw mat. A famous robber passing over the bridge scornfully kicked the urchin, who awoke and intrepidly grabbed the man's spear commanding him to stop such cruelty. The robber,

impressed with the boy's courage, decided to raise him as his own son. In the play, the straw mat bears the trademark of one of the nearby Hatcho miso shops where it was used to prepare koji. Historians cite the incident to prove that Hatcho miso was being made as early as 1546." On one pillar of the bridge is written in large Japanese characters "Yahagi Hashi."

Note 2. No trademark can be seen on the straw mat on the front of the Hatcho miso boxes in this photo. Perhaps the story was created after 1931.

749. Tihon, L. 1931. A propos d'une variété nouvelle de soja O-too-ton [Concerning a new variety of soybean, O-too-ton]. *Bulletin Agricole du Congo Belge* 22(1):120-23. March. [Fre]

• **Summary:** "The management of the plantations has sent us, in the chemical laboratory [at Leopoldville, Belgian Congo], a rather important sample of seeds of the soybean variety O-too-ton [Otootan], recently introduced from Atlanta, Georgia, USA, to the botanical garden at Eala. At the time of a former shipment of two other varieties, we have pointed out in the report of our studies (10 October 1928) the interest in this legume and given some generalities concerning its cultivation and possibilities for various uses." Tables compare O-too-ton with the former two varieties (Jaune [yellow] and Violette) in terms of size, weight, chemical composition, and mineral content. A detailed analysis of the oil of the yellow soybean is given.

The author then discusses the physiological value of the soybean and its by-products. It contains about twice as much protein as locally-consumed beans and much more oil. It can therefore help in improving the diet of the indigenous people, which is deficient in protein (*albuminoides*). It is also a rich source of vitamin E and other key nutrients. As noted in the author's previous report, the people of East Asia use the soybean to make a milk, a curded milk (probably tofu), and various fermented foods such as miso and soy sauce. Various studies have shown the milk to be very nutritious and digestible.

"The information given above has been, in large part, extracted from the *Bulletin de la Société d'Hygiène alimentaire et d'Alimentation rationnelle de l'homme* (Vol. 18, no. 1, 1930)."

Note: This is the earliest document seen stating that vitamin E is found in soybeans. Address: Director, Laboratoire de Chimie, Leopoldville [Congo Belge].

750. *Official Record of the U.S. Dept. of Agriculture (The)*. 1931. Plant explorer brings back new soybean varieties from Orient. 10(15):113. April 11.

• **Summary:** The content of this article is identical to that of USDA's press release of March 28. However, a photo shows William J. Morse "with some of the soybean products he

obtained in the Far East." Morse was looking at four boxes of Hatcho miso, one of which was open.

751. Horvath, A.A. 1931. The soy bean as human food. *Industrial and Engineering Chemistry, News Edition* 9(9):136. May 10.

• **Summary:** Contents: Historical background. Properties and uses. Growing interest in soy bean preparations in different countries. Soya foundation proposed.

This article begins: "The soy bean is a plant of early cultivation in China. Its use dates back to the beginning of China's agricultural age under the Emperor Shen Nung. It is mentioned in the *Ben Tsao Gang Mu*, the ancient 'Materia Medica' written in the year 2838 B.C. This bean is remarkable for its richness in oil (average 20 per cent), protein (average 40 per cent), and ash (average 5.5 per cent), and the almost complete absence of starch.

"Since time immemorial the soy bean has been the most universal article in the Chinese dietary. It is also extensively used for food in Korea, Japan, Indo-China, the Philippine Islands, the Dutch Indies, Siam, and India. The Chinese make practically no use of dairy products, and the bulk of the people consume a very meagre amount of meat. Yet, in spite of this, they have lived for centuries on what appears to be a remarkably well-balanced diet by the use of the soy bean."

Also discusses: Soy bean milk, tofu, miso, chiang, Worcestershire sauce ("liquid soy sauce... when spiced, is sold under the label 'Worcestershire sauce.'"), W.J. Morse of the USDA, soyfoods in Europe, Prof. Berczeller, and work at the Physiological Institute of the University of Vienna under Prof. Durig and Dr. Wastl.

"In Russia, the soy bean is fondly called 'our young revolutionary Chinese ally.' 'Plant soy beans and you plant meat, milk, egg omelets,' is the newspaper cry. Efforts have been made all year to introduce soy bean dishes to restaurants and homes. A Soy Institute was recently organized in Moscow, as well as a special exhibition of soy foods at which 130 varieties of soy dishes, including cutlets, pastry, salads, candy, and beef, were shown. A dinner, prepared entirely of soy beans, was served to representatives of trade unions, factories, Red Army, and the Soviet press. The food was unanimously declared excellent..."

"Soya foundation proposed: There are reasons to expect that the United States will become the leader in introducing the soy bean in the daily diet of the white race. An important step should be the establishment of a soya foundation in order to promote the creation of a national soya food research institute." Address: Health Section, Bureau of Mines, Pittsburg, Pennsylvania.

752. Takata, Ryohei. 1931. Miso jôzô no eiyôgaku-teki kôsatsu. VII. Shihan miso-chû no kô tahassei shinkei-en B

bitamin [Nutritional studies on miso fermentation. VII. Vitamin B, the antipolyneuritis factor, in commercial miso]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 9(8):584-87. Aug. [10 ref. Jap]
Address: Kôgaku-shi, Japan.

753. Harada, Taichi. 1931. Preparation of *Aspergillus oryzae* enzymes. *Industrial and Engineering Chemistry* 23(1):1424-27. Dec. [29 ref]

• **Summary:** *Aspergillus oryzae* enzymes are widely used in the food and textile industries in the Far East. They are used to make soy (Shoyu) sauce, miso, and saké. The source of the enzymes [koji] contains two important enzymes—diastase and protease. This paper describes “certain properties of *Aspergillus oryzae* enzymes which were obtained by Takamine’s method” (described in this journal, 1914). Address: Dep. of Biochemistry, New York Post-Graduate Medical School, Columbia Univ., New York, N.Y.

754. Morse, W.J. 1931. Utilization of soybeans and soybean products in Oriental countries. *J. of the American Society of Agronomy* 23(12):1067. Dec. Presented as part of Symposium on Soybeans. Leader: W.J. Morse.

• **Summary:** Manchuria, the largest soybean-producing country in the world, had a production of more than 5,000,000 tons of which more than 400,000 tons were used for food, 253,000 tons for feed, and 225,000 tons for seed. The remainder, more than 4,000,000 tons, was used in the production of oil and oil meal and for export. Japan in 1929 used over 39,000,000 bushels of soybeans of which only 13,000,000 bushels were grown in Japan proper, the difference being imported from Manchuria and Korea. The following shows the various ways in which this large amount of beans was utilized by the Japanese people: Miso, 22.7%; soy sauce, 22.7%; soybean oil and oil cake, 21.5%; bean curd, 15.4%; confections, 6.1%; forage, 6.2%; green vegetable beans, 0.8%; green manure, 2.5%; seed, 1.6%; miscellaneous, 0.5%.

Note: This is the earliest document seen (Oct. 2001) that gives industry or market statistics on green vegetable soybeans by geographical region. Address: USDA, Washington, DC.

755. *Manchouko (Manchuria) Yearbook*. 1931-1934. Serial/periodical. Tokyo: East-Asiatic Economic Investigation Bureau (Toa-Keizai Chosakyoku). Annual. [Eng]

756. Kagawa, Aya. 1931. Shuju honpô shokuhin no bitamin B ganyûryô narabini kore ni oyobosu chôri no eikyô. II. [Vitamin B content in Japanese foods and the influence of it on cooking. II]. *Tokyo Igakkai Zasshi (Tokyo J. of Medical Sciences)* 45(10):1561-82. [Jap]*

757. **Product Name:** Miso.

Manufacturer’s Name: Yumura (S.) Miso Manufacturer.
Manufacturer’s Address: Mawahi Lane, Hilo, Island of Hawaii.

Date of Introduction: 1931.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1930-31. p. 709.

758. Japanese American News Inc. / Nichi-Bei Shinbunsha. 1931. Nichibei jûshoroku [The Japanese American directory. No 27]. San Francisco, California: Nichi-Bei Shinbunsha. 600+ p. Index of cities. 23 cm. [Eng; Jap]*
Address: Ellis Street, San Francisco, California.

759. Ochse, J.J. 1931. Vegetables of the Dutch East Indies. Buitenzorg (Bogor), Java: Archipel Drukkerij. xxxvi + 1005 p. See p. 366, 389-93, 398, 407-08, 732, 943-71. An entirely revised and greatly enlarged second edition of his *Tropische Groenten* (1925). Translated by Mr. C.A. Backer. Illust. 25 cm. Index. [10 ref. Eng]

• **Summary:** This translation (by Mr. C.A. Baker, the reputed ex-Botanist for the flora of Java) of Ochse’s classic “may be taken as an entirely revised and much enlarged second edition of ‘*Tropische Groenten*’ (Tropical Vegetables), which booklet was published in July 1925.” The author, a Dutchman who confined his research to Java and Madoera, described the tempeh-making process in detail, saying that the mold used was *Aspergillus oryzae* and that it was obtained from a former batch of tempeh.

Page 366 discusses ontjom (tépépé boongkil in Javanese), tetépépé, and dagè, all made from peanuts. Page 372 notes that the pigeon pea (*Cajanus cajan*) can be used to make tépépé bosok.

Pages 389-93 discuss the soya bean, which has various names in local languages. Malay: Katjang djepoon or Kedele. Javanese: Dekeman or Dekenan, Dele, Demekan, Gadele, Kedele, Kedoongsool, or Dangsool. Sundanese: Kadele, Katjang booloo, Katjang djepoon, Katjang kadele. Madura: Kadhele, Kadhellee, or Kedeleh. A description of the plant is given.

Illustrations show: (1) A young soybean plant with leaves and pods (half size). (2) A bamboo scaffolding or curing frame, in tripod form with 3 horizontal supports, used for drying bunches of soybeans.

Soybeans come in two main forms: Light yellowish-brown seeds, and black seeds. The latter are used to make *ketjap* (Indonesian soy sauce). “Of the ripe seeds *pélas* (Jav.) is made, by mixing them with grated young coco-nut [coconut], salt, and other ingredients. The mixture is wrapped in a banana leaf and steamed.

“The seeds can also be roasted and afterwards pounded. The *boobook* [*bubuk*, roasted soy flour], *boobook* or *boobookan* (Jav.) is eaten in the shape of powder, usually with the addition of lombok and other ingredients.

“The seeds are mixed with a porridge of rice-meal and water and afterwards fried in coco-nut oil. This dish is called *rempeyek* (Jav.). It consists of brown slices in which the black *kedele*-seeds are scattered. *Rempeyek* is eaten either as a delicacy or with the rice table. “Témpé [tempeh, p. 391] is a much used product. In East- and Central-Java it takes the same place as the *ontjom* in West-Java. It is prepared in much the same way as *ontjom*, the reaction is brought about by the same fungus, *Rhizopus Oryzae*, Went et Prinsen Geerligs, which is transmitted by *ragi*. The seeds are cooked and, after they have cooled, put in a basket. By stirring, rubbing and even by treading, coupled with repeated washing with fresh water, one tries to remove the testa from the seeds. When this has been done, the seeds are put on hurdles (*sasak*) covered with banana- or waroo-leaves. Now the so-called *beeang*, i.e. rests of the fungus used for a former batch, is sprinkled over them and the mass is turned over on other *sasaks*. The *témpé*-cakes treated in this way are kept within doors and after two or three days the fungus has spread sufficiently for giving a light grey colour to the cakes, which then are soft and dry and ready for use. They are sold on the markets either cut into small pieces or divided at pleasure, according to the amount of money the buyer wishes to spend. *Témpé* is used, fried, in the *sayor* or prepared with all sorts of ingredients.

“Other products for the native market are *tahoo* [tofu] and *takoäh* [pressed tofu; Chinese: doufugan]. Both are eaten either boiled or cut into small slices, fried and added to *gado-gado* or, lombok rawit being added, as a side dish.

“For the preparation of *tahoo* or *takoäh* the seeds are soaked, ground fine, boiled and pressed through a cloth. The juice which is pressed out is mixed with salt, vinegar, coco-nut milk or with unburned gypsum (so-called *batoo tao*), imported from China. By this treatment a white gelatinous mass is formed, which, after cooling, can be cut into pieces.”

“Wet *tahoo* does not keep well for a long time. For this reason it is soon made into *takoäh*. For this purpose the *tahoo* is cut into pieces, folded in pieces of cloth, pressed in order to remove part of the water and next boiled in a decoction of *koonir* [turmeric]. The product obtained in this way has an intense yellow color and is a much relished delicacy, especially with lombok rawit [fiery dwarf chilies].”

Taotjo [Indonesian-style miso] is a porridge made of soybeans and rice meal. The soybeans are soaked, dehulled (the testa removed), cooked, and left to cool. Then they are mixed with the meal of rice (regular or glutinous), which has been previously roasted. “The porridge obtained in this way is poured on winnows (*tampah* [winnowing trays]) covered with waroo-leaves, sprinkled with *ragi* or *beeang*, probably of *Aspergillus Wentii*, Wehmer, and covered with leaves. The filled *tampahs* are piled on each other and left alone till the cakes are very mouldy. Then they are dried in

the sun, soaked in brine and mixed with sirup of *arèn* [sugar palm] and with *tapè* [*tapai*; a sweet fermented cake] of rice and glutinous rice. Next the porridge is placed out of doors. After the seeds have become soft by this treatment, which takes three or four weeks, the *taotjo* is ready for use.

“*Taotjo* must be boiled, otherwise the smell is too strong. It is eaten with cooked or raw vegetables. It is used for dressing some dishes of meat or fish, whilst it is also a material of which diverse side dishes are made.”

Note 1. This is the earliest English-language document seen (March 2009) that uses the word “*taotjo*” to refer to Indonesian-style miso.

“According to De Bie (1901), *tao djee* [*tao dji*; *doushi*, *douchi*] is *taotjo* alternating with layers of cooked whole *kadelè*-seeds. This stuff is put into a pot or basin with some salt and boiled arèn-sugar. The mass is left to itself during a few days till the *taotjo* has become pervaded by the salt and the sugar and has assumed a uniformly brown colour. Note 2. *Tao djee* [*doushi*] is soy nuggets, which are not the same as *Taotjo* [Indonesian-style miso]. De Bie (1901) seems to have made a mistake.

“Of the black *kadelè*-seeds *soya* [soy sauce] is made, exclusively by the Chinese and the natives. First the seeds are cooked in a strong solution of salt. After diverse manipulations the cooked seeds are mixed with arèn-sugar and so-called soya-condiments and the mixture is concentrated till the salt begins to crystallize. By diluting this product with more or less water one obtains the diverse qualities of *kètjap* or *soya* found in commerce.”

The “Pemimpin Pengoesaha tanah” of 15 Jan. 1915 lists various ingredients that can be used with black soybeans in making *ketjap*. “Young seedlings, obtained, like *taogè* [*taugé*, soy / bean sprouts], by fermenting, are called *ketjambah kedele*; they are cooked and eaten as *petjel* (Jav.) with the rice (*ganteng*, Jav.)”

“Finally young leaves of *Kadele* can be eaten, raw or steamed, as *lalab*.

Page 398 describes *dagè* and *témpé bengook* made from these seeds of the velvet bean (*Mucuna pruriens*). Roasted tempeh are also discussed.

Pages 407-08 states that the seeds of the *Katjang oji* (rice bean) can be used for the preparation of tempeh.

Pages 414-15 state that, when they have no soybeans, the Chinese use mung beans (*Katjang eedjo*) to make tofu and takoah, but they are most widely used to make mung bean sprouts (*taogè*). Page 634 mentions *témpé bosok* (overripe tempeh) made with the foul-smelling bruised leaves of the plant *Paederia foetida*. Page 732 also mentions overripe tempeh.

Note 2. This is the earliest English-language document seen (Dec. 1998) which contains detailed information about tempeh, or which refers to tempeh as “*témpé*.”

Note 3. This is the earliest English-language document seen (Feb. 2004) that uses the word “*tahoo*” or the word

“takoäh” to refer to tofu. Address: Buitenzorg (Bogor), Java, Indonesia.

760. Ochse, J.J. 1931. Indische Groenten [Vegetables of the Dutch East Indies]. Buitenzorg (Bogor), Java: Department Landbouw. 1004 p. See p. 388-92. [10 ref. Dut]

• **Summary:** For details, see the English-language translation, also published in 1931.

Under soybean utilization, the following food products are discussed in detail on pages 390-92: Tempeh (*tèmpè*), tofu (*tahoe*) and firm tofu (*takoä*), Indonesian-style miso (*taotjo*), soy nuggets (*tao dji*), and Indonesian-style soy sauce (*kètjap*). “Témpé is a much used product. In East- and Central-Java it takes the same place as the ontjom in West-Java. It is prepared in much the same way as *ontjom*, the reaction is brought about by the same fungus, *Rhizopus Oryzae*, Went et Prinsen Geerligis, which is transmitted by *ragi*.”

On pages 943-970 is an alphabetical “List of Vernacular Names of Objects, Properties or Actions.” For example: Kedele oongaran (p. 390, Jav.) is a soybean plantation on a sawah, immediately following the paddy [rice] harvest. Kedele apeetan (p. 390, Jav.) is the second harvest of the year or the second plantation in the same year of Kedele (soybeans; Glycine Soja). Address: Buitenzorg (Bogor), Java.

761. Togano, Meijiro. 1931. Saishin shôyu miso jôzô-hô [Brand-new methods of brewing shoyu and miso]. Tokyo: Jôzô Hyôron-sha. 1052 + 13 p. Illust. 22 cm. [Jap]*

• **Summary:** This is apparently a revision of the 1926 edition, with 13 additional pages, separately numbered.

762. Japanese American News Inc. / Nichibei Shinbunsha. 1932. Nichibei jûshoroku [The Japanese American directory. No 28]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements. Published Jan. 1 by Nichibei Shinbunsha. Address: San Francisco, California.

763. **Product Name:** Koji, Miso.

Manufacturer’s Name: Sakura-fu Koji, Miso Seizo-sho (Sacramento Koji & Miso Manufacturing Co.).

Manufacturer’s Address: 215 M St., Sacramento, California. Phone: Main 5692-W.

Date of Introduction: 1932. January.

New Product–Documentation: The Japanese American Directory. 1932. p. 163. Also in 1934, p. 169. Phone has

changed: 5116W. Also in 1936, p. 199. No phone number listed. Also in 1937, p. 110, but with slight change in name (Sakura-fu Miso, Koji Seizô-sho).

764. Takata, Ryohei. 1932. Miso jôzô no eiyôgaku-teki kôsetsu. VIII. Miso jôzô-chû bitamin B-1 no henka [Nutritional studies on miso fermentation. VIII. Changes in vitamin B-1]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 10(1):35-42. Jan. [5 ref. Jap]
Address: Kôgaku-shi, Japan.

765. Blokhuis, D.F.; von Liebenstein, E.R. 1932. Over de beteekenis van de sojaboon als handelsproduct [On the commercial significance of the soybean as a commodity]. *Landbouw (Buitenzorg, Java)* 7(9):571-96. March. English-language summary, p. 743-74. Also in: Dutch East Indies Dept. of Agriculture..., ed. 1932. Kedelee. Buitenzorg, Java: Departement van Landbouw, Nijverheid en Handel. Afdeling Landbouw. p. 5-30, 177-78. [1 ref. Dut; eng]

• **Summary:** “Annually Java requires considerable quantities of the soybean, about one half of which is imported... On Java the soybean is used principally for the preparation of soy sauce (*soja of ketjap*), tahoe, tempe, and taotjo (various dietary preparations). Our investigations have proven that the Java-grown soybean can be used for making ketjap, tahoe and tempe just as effectively as the imported soybean. In western Java the manufacturers of soy prefer the imported article, those in central and eastern Java prefer the home-grown bean. This preference, which must be attributed chiefly to habit and conservatism, is also partially to be ascribed to the fact that in western Java but little of this article is grown, whilst in central and eastern Java the production is much more considerable, which causes the former region to be more dependent upon the imported article than the latter districts. For the preparation of tahoe a certain preference is indeed shown for the imported bean, in view of the greater keeping properties of the article prepared therefrom; nevertheless, the soybean grown on Java is also widely used for that purpose. The same holds good for the preparation of tempe, where the imported article is preferred chiefly on account of its larger size. Generally speaking, the imported kinds of soybean are preferred for the preparation of tahoe and tempe because they satisfy to a greater extent the demands of the manufacturers, and also because they are readily obtainable. Taotjo, however, is practically exclusively prepared from the imported bean.

“The general conclusion is that the imported soybean can be replaced, if not entirely, at a rate to a very great extent by the soybean grown on Java, thus indicating that the furtherance of its cultivation in this country can only be of advantage...

“The principal import harbours are Semarang [Central Java], Sourabaya [Surabaya], Tandjong Priok, Tjilatjap, and

Cheribon.” Address: 1. fd. Hoofd van Afdeeling Handel te Buitenzorg; 2. Vakkundig Ambtenaar bij de Afdeeling Handel, Java.

766. Donath, W.F. 1932. De voedingswaarde der sojaboon en enkele daaruit bereide specifiek Indische voedingsmiddelen [The food value of soybeans and some specifically East Indian foods prepared from them]. *Landbouw (Buitenzorg, Java)* 7(9):705-40. March. English-language summary, p. 759-61. Also in: Dutch East Indies Dept. of Agriculture..., ed. 1932. Kedelee. Buitenzorg, Java: Departement van Landbouw, Nijverheid en Handel.

Afdeeling Landbouw. p. 139-74, 193-95. [48 ref. Dut; eng] • **Summary:** Discusses the composition of the soybean. “In contrast with Manchuria, where it is a common article of diet, the soybean is rarely used as such in these parts; but by means of various operations, among which is the action of certain fungi, several products are prepared from it.

“These products, such as *tempe kedele*, *taotjo*, *tahoe*, *taokoan* and *ketjap* are important items in the native diet. Except for the last mentioned, the preparation of these products is such that the albumins are preserved practically intact, so that, especially in *tempe*, as we were able to point out, the biological albumin value is very high...

“*Soymeal*, which is prepared by removing the husks and then pounding what is left, has the drawback that it tastes somewhat bitter and, in consequence of the high percentage of fat, soon becomes rancid... Berczeller, however, seems to have succeeded in obtaining an improved soy meal...

“Finally, in discussing the importance for the native diet of these beans and the products prepared from them, the author arrives at the conclusion that it is especially the albumins that are important, the people being practically vegetarian and these foods being, in addition, rich in carbohydrates.

“Thus the author expresses his approval of the fact that of late years the *Department of Agriculture, Industry and Commerce* has advocated the growing of the soybean and the consumption of the products prepared therefrom.”

Note 1. This is the earliest English-language document seen (the summary) (Sept. 2005) that contains the word “soymeal,” which apparently refers to whole (full-fat) soybean flour.

Note 2. This is the earliest document seen (April 2001) that contains the word *taokoan*. Address: Hoofd van het Analyseelaboratorium te Buitenzorg, Java.

767. Dugard, Jean. 1932. La valeur alimentaire et industrielle du soja [The food and industrial value of soya]. *Genie Civil (Le)* 100(17):419-20. April 23. [3 ref. Fre]

• **Summary:** Contents: Introduction. *USDA Farmers’ Bulletin* No. 1617, by W.J. Morse. Botanical characteristics of the soybean. Composition and food value of the soybean. Products derived from soya eaten by humans: Tofu, soy oil,

soyhu [soy sauce] (called “soy” in English), soy flour, soy sprouts, miso, natto. The use of soya as forage. Industrial uses of soy oil and cake. The soybean in western Europe: Hansamuehle in Hamburg, Germany; Englehardt & Cie. in Frankfurt, Germany (making powdered soymilk, soy caseine, soy lecithin, etc.); Soybean cake used for animal feed in England, Denmark, Holland, Sweden, and—above all—in Germany, where more than 2 million tons/year are consumed.

768. Krauss, F.G. 1932. Soybeans, their culture and uses in Hawaii. *Hawaii Agricultural College, Extension Service, Agricultural Notes* No. 24. 4 p. June 21.

• **Summary:** Contents: Introduction. Cultural methods. Fertilization. Inoculation. Time to plant. Distances to plant and rate of seeding. Varieties. Harvesting. Soy beans for soil improvement.

“The soy bean is destined to become an important supplementary crop in Hawaii’s increasingly diversified agriculture.” “As human food, the soy bean may be cooked either green or dried like snap or shell beans, and as such offer possibilities for canning commercially. The mature seeds are also ground into culinary meals and bolted for flour. The Orientals utilize vast quantities of soy beans for the manufacture of a number of nutritious and highly-priced foodstuffs, including the well-known tofu, miso, and soy sauce. The Japanese of Hawaii import about \$70,000 worth of the beans annually from Japan for the above purposes, the manufacture of which could be greatly extended if the soy bean were grown locally. A considerable amount of soy bean cake meal is also imported for poultry and dairy stock feeding. It is estimated that Hawaii could consume to advantage at least a half million dollars worth of soy bean products annually if the crop were grown extensively enough.”

769. Korigawa, K. 1932. Shihan miso-chû no gurutamin-san [Glutamic acid content of commercial miso]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 10(7):543. July. [1 ref. Jap] Address: Osaka Kogyo Daigaku, Jozo-gaku Kyoshitsu, Takada Kenkyushitsu, Japan.

770. Suzuki, Tsuneya. 1932. Miso jôzô-chû ni okeru gan chisso-butsumikananzoku gurutamin-san no zôgen ni tsuite [The increase and decrease of nitrogenous substances, especially glutamic acid, during miso fermentation]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 10(7):536-42. July. [8 ref. Jap] Address: Kôgaku-shi, Japan.

771. Horvath, A.A. 1932. El frijol “Soya” como alimento nacional [The soybean as a national food]. *Revista de Agricultura, Comercio y Trabajo (Cuba)* 14(3):43-56. Sept. [Spa]

• **Summary:** This is a translation of Horvath 1927, “The Soybean as Human Food.” Address: Peking Union Medical College, China.

772. Peirier, J.C.; Nguyen, Kim Kinh. 1932. Analyse chimique d’un tuong-dau, sauce de soja [Chemical analysis of tuong-dau, Vietnamese soy sauce]. *Annales de Medicine et de Pharmacie Coloniales* 30:509-16. July/Sept. [Fre]

773. Ishimaru, Yoshio; Kodama, Renichi. 1932. Miso no seibun, tokuni sono yushi ni tsuite (yohô) [On the components of miso, especially its lipids (prediction or forecast)]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 10(10):803-05. Oct. [Jap]

774. Toa-Keizai Chosakyoku (East-Asiatic Economic Investigation Bureau). 1932. Manchuria year book 1932-33. Tokyo, Japan: Toa-Keizai Chosakyoku. 530 p. [Eng]

• **Summary:** The Preface begins: “Those who have been following the development of events in Manchuria since the fateful September of 1931 will not fail to understand in what circumstances we have compiled this volume... The last issue, which was the first published, appeared in November, 1931, while Manchuria was in a chaotic condition, but the manuscripts for it were completed before the Sino-Japanese dispute over Manchuria occurred in September.” There was the establishment of Manchuokuo in March, the signing of the Japan-Manchuokuo protocol in September, and the despatch [dispatch] of the League [of Nations] Commission of Enquiry and the publication of its report.”

Chapters 2 and 3 give a Japanese version of the history of Manchuria, in four periods, from 311 B.C. to the present, and of its administration.

In Chapter 7, “Agriculture,” the section on “Agricultural products” contains tables: (2) Agricultural production of 9 major crops in 1930 (incl. soya beans) in three provinces, total, Kwantung Leased Territory and South Manchuria Railway (S.M.R.) Zone, and grand total. (3) Cultivated area classified by crops, 1930. (4) Production of ordinary crops, 1924-1930. (5) Cultivated area of ordinary crops, 1924-1930. (6) Production index of ordinary crops, 1924-1930. (7) Index number of cultivated area of ordinary crops, 1924-1930. (8) Percentage of production and cultivated area of ordinary crops, 1924-1930. (9) Production and cultivated areas of ordinary crops classified by districts, 1930. (10) Value of exports of agricultural products (Haikwan taels), raw products and manufactured goods. (11) Exports of agricultural products (metric tons and Haikwan taels), 1921-1930. (12) Exports of principal agricultural products classified by destination (metric tons and Haikwan taels), 1930. (13) Amount of soya beans and cereals consumed in the three eastern provinces, 1930 (as food, fodder, or seed; in South and in North Manchuria). (14) Percentage of

agricultural products shipped to the markets (in South and North Manchuria). Map of distribution of crops [and railways] in Manchuria (p. 111). Sub-section titled “Soya beans” (p. 110-12). A photo (facing p. 112) shows Soya bean at Tailai, piled in sacks near a railway. The soybean is the principal resource of Manchuria in terms of both production and acreage. In recent years, the annual production has reached more than 5 million tons, which is 60% of world soybean production.

Chapter 12, “Industry,” includes table (6) Manufacturing production in the Kwantung Lased Territory and the S.M.R. Zone, 1926-1930 (both volume and value). Products include [soya] bean oil, [soya] beancakes, miso, and soy [sauce]. In Section 2, “Oil and fat industry” is a subsection (p. 188-97) titled “Oil milling” with these contents: Introduction. Diagram of utilization of soya beans. History. oil extraction methods, table (7) “Beancake producing capacity of oil mills per 24 hours, 1925-1931” (in major cities), table (8) “Beancake production in Manchuria (1,000 pieces), 1926-1930, in major cities and regions, table (9) “Exports of beans and bean oil from Dairen, Antung, Yingkow and Vladivostok, 1920-1931,” table (10) “Exports of soya beans, beancake and bean oil (1927-1931),” table (11) Exports of beancake classified by ports, 1929-32,” table (12) “Export of beancake classified by destination, 1929-1931” (Japan gets 62%), table (13) “Export of bean oil, 1931, by destination, “Solidified bean oil industry” [hydrogenated], table (14) “Production of solidified bean oil (by the Dairen Oil Fat Manufacturing Co., established 1916).” Miso and soy [sauce] manufacture (p. 230).

In Chapter 15, “Foreign trade, table (9) shows the “Quantity and value of exports at Manchurian ports (Value in H.K. taels). The main exports are soya beans, other beans, maize, kaoliang, and millet. The ports are Antung, Dairen [the main port for soya beans], Newchwang, Harbin Aigun, Hunchun, and Lungchingtsun. The main destination countries are British Empire, USA, Germany, France, Russia, Other countries, Total, Chinese ports, Grand total. Note that Japan is not mentioned; it is probably concealed within “Other countries.” The source of the statistics in table 9 is: Research Office of S.M.R. Co. *Trade Returns of North China*, 1930 and previous issues.

A large fold-out map at the end of the book shows all of Manchuria, incl. province boundaries, railways, steamer routes, and cables.

775. Nagasaka, K.; Sahara, S. 1932. Miso seizô ni okeru papayochin no riyô ni tsuite [Use of papain in the manufacture of miso]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 27(4):21-23. [Jap] Address: 1. Todai Nôgaku-bu, Joshu Nôgaku-shi; 2. Ootomo, Miso Kenkyusho Gishi, Nôgaku-shi.

776. Nagasaka, K.; Sahara, S. 1932. Miso kôji no kôso-ryoku to seihin to no kankei ni tsuite [The relation between the enzymic power of miso koji and the finished miso]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 27(2):23-26. [Jap]

Address: 1. Todai Nôgaku-bu Nogeï Kagaku Kyoshitsu, Nôgaku-shi; 2. Ootomo, Miso Kenkyusho Gishi, Nôgaku-shi.

777. Obata, Y.; Matsuno, N.; Tamura, U. 1932. [Biological value of tofu and miso]. *Kokuritsu Eiyô Kenkyusho Kenkyû Hokoku (Research Report of the National Institute of Nutrition)* 20:20-27. [Jap]*

• **Summary:** The biological value of non-salty miso and low-salt miso is 73.2 and 70.7 respectively, compared with casein which has a biological value of 80.1.

778. Sakurai, Yoshito. 1932. Miso no seibun. I. Shibô no ippan seijô ni tsuite [The constituents of miso. I. On the general properties of the oils]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 8:1312-13. (Chem. Abst. 27:1059). [Jap]

779. Tanaka, Shinjiro. 1932. Miso seizô-hô [Method of making miso (Abstract)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 27(6):56. [1 ref. Jap]

• **Summary:** A 4-line summary of his 1932 patent on the manufacture of miso.

780. Tanaka, Shinjiro; Ashikawa, T.; Nakamatsu, M. 1932. Miso seizô-hô [Method of making miso]. *Japanese Patent* 800. In Toku Ko, 800. [Jap]

Address: 1. Tokyo-shi, Koishikawa-ku, Otsuka, Sakashita-cho 167, Japan; 2. Kobe; 3. Tokyo.

781. Tanaka, S. 1932. [Miso manufacture]. *De Ko* 2222. [Jap]*

782. Abadal, D. Jose; Soroa, Jose Maria. 1932. Cultivo y aplicaciones de la soja [Cultivation and applications of the soybean]. Madrid: Patronato Central para la Proteccion de Animales y Plantas. 44 p. Illust. [Spa]

• **Summary:** Contents: Introduction (preliminary notes). Part I: Cultivation and applications of soya. Chart of utilization of the soybean seed. Agronomic notes and details on soybean cultivation. Part II: Soya as a food. Nutritional value, soya as a vegetable (green vegetable soybeans; *Soja, como verdura*), soy sauce (*salsa de soja*), soymilk (*leche*), condensed soymilk (*leche concentrada/condensada*), powdered soymilk (*leche en polvo*), fermented soymilk (*leche fermentada*), soy cheese (*queso de soja*) [tofu], soy casein (*caseina de soja*), soy flour (*harina de soja*), soy bread (*pan de soja*), Soyolk (soy flour made by Dr. Berczeller), whole-grain soy bread (*pan integral*), soy flour

tablets (*comprimidos*), pastries, biscuits, puddings, etc. (*pasteles, bizcichos, puddings*), soy oil (*aceite de soja*), fermented soy products (*productos de la soja fermentada: natto, miso, shoyu*), confectionery products (*productos de confiteria*), chocolate (*chocolate*), coffee (*café*), soy ferments/enzymes (*fermentos de soja*), products made by Caséo-Sojaïne (*Caseo-Sojaina de Paris*). Soy as a livestock food. Appendix.

“As early as 1918 a Spanish public official, Don Julio de Palencia, the Spanish Consul in Shanghai, sent the State Department (*Ministeria de Estado*) a magnificent report specifying the great attention that representatives of the principal countries of the world were giving to this crop [the soya bean], and the relevance that it would have in the agricultural economy of the future. What a pity that Spain has been the only civilized country to ignore the study of the soya bean and its exploitation on a large scale” [p. 5].

“Finally we must make public our thanks to the spokesmen of this foundation/board (*Patronato*) for the special work they have done in writing this booklet: Don José Maria de Soroa, secretary of the Special School for Agricultural Engineers (*Escuela Especial de Ingenieros Agrónomos*), and Dr. Don José Abadal, chief of the Bureau for the Inspection of Pharmaceutical Services of the Ministry of War (*Negociado de la Inspección de Servicios Farmaceuticos del Ministerio de la Guerra*)” [p. 6].

“In 1917 the Spanish Consul in Shanghai, Don Julio Palencia, sent to the State Department a study on cultivation of soya, proposing that tests be done to acclimatize this valuable crop to our country.

“In Motril and later at the southern agricultural station of Malaga, the agricultural engineer D. Arsenio Rueda has been cultivating soya for the past 10 years [i.e. since 1923] in plots of 5 ares [1 are = 100 square meters], obtaining 60 liters (each liter weighing 780 gm) in each one.

“The white as well as the black varieties give good results, though the white ones do best. The seeds have been distributed to farmers who have noticed that, even though at first the goats that were given them as food rejected them, after a few days of getting used to this grain preferred them to such an extent that one must avoid growing this plant near the herd’s path lest the herd be attracted and devour it all.

“Although soya is a legume which draws many nutrients out of the soil (*esquilmante*), it has according to Mr. Rueda, sufficient interest since it allows usage of terrains where field beans cannot be used due to the invasion of the pest called *Orobanche speciosa*, commonly called ‘Jopo.’ This parasite does not attack soya...

“Besides the quoted trials, it have been more than 25 years since soy has been grown in Spain with success due to the interest and zeal that in their patriotic work, the agricultural engineer Mr. Eduardo Noriega undertook with his partner, Mr. Ortiz, on the farm of ‘Jerez.’

“He was successful during many years using the yellow and black varieties, later on also cultivating it in the Spanish central region.

“We think it useful also to state in writing the following data about soy grown by Dr. D. Jose Abadal in Lerida during the years of 1925-1926.

“The experiment was done only out of curiosity, with the intention of seeing if it could be grown in said province. Japanese seeds of the hirsute soy variety, yellow seed, used as food for diabetes, were used. The planting was done in a garden with seeds that had been soaked for ten hours, with no more care or fertilizers than those used for all the existing plants of that garden. The terrain of course was one of easy irrigation and located in Lerida where it is very hot all during the summer.

“This brief essay demonstrates that soy can be grown in irrigated terrain in very hot places and with little care.

“Fifteen years ago, the agricultural Engineer D. Jesus Andreu, in the province of Pontevedra [in the northwest corner of Spain, just north of Portugal, bordering the Atlantic ocean], did some tests with good results on growing soy as a forage plant.

“We also have news, though not concrete, of other successful tests done in the provinces of Madrid and Toledo.” Address: 1. T.C. Farmaceutico Militar; 2. Ingeniero Agronomo e Ingeniero Sanitario, Spain.

783. Orosa, Maria Y. 1932. Soybeans as a component of a balanced diet and how to prepare them. *Manila (Philippines) Bureau of Science, Popular Bulletin* No. 13. 53 p. [16 ref]

• **Summary:** Contents: Introduction. The cooking of soy beans (89 Filipino recipes, p. 7-35), incl. roasted soy beans, soy-bean soups etc.—most recipes use whole soybeans, but quite a few use tofu (*tokua*), soy sauce (*toyo*), soy-bean flour, or soy-bean milk, and a few use *tahuri* (brine fermented tofu) or soy-bean sprouts. Some common foods made from soy beans and methods of preparing them (p. 35-53): Soy-bean milk, condensed soy-bean milk, soy-bean milk powder, soy-bean casein, soy-bean curd (tofu; *tokua* or *toqua*). *Tahuri* or *tahuli* (fermented tofu). Frozen tofu. Bean curd brains or *tofu nao*. Dry bean curd or *topu khan* (tofu-kan, dipped in burnt millet sauce and rubbed with fine salt). Fragrant dry bean curd. Thousand folds (thin layers of fresh tofu pressed in cheesecloth. “On standing, the thousand folds mold and develop a meatlike flavor. This is fried in sesame oil and served in place of meat”). Fried bean curd. Soy sauce (called by the Chinese “ch’au yau,” or drawing oil; or “pak yau” or white oil” by the Japanese “shoyu”; and the Filipinos, “toyo”). Natto. Hamanatto (p. 49). Yuba. Miso. Soy-bean flour. Soy-bean oil (used in the manufacture of lard and butter substitutes; also in paints, printing inks, etc.). Soy-bean meal. Soy-bean coffee. Soy-bean sprouts.

Note 1. This is the earliest English-language document seen (Oct. 2008) that uses the term “soy-bean casein” (or “soy bean casein” or “soybean casein”), probably to refer to soybean protein.

“When and by whom the soy bean was first introduced into the Philippines, no one can ascertain. The Filipino people have long known some important soy-bean preparations, such as soy sauce, or ‘toyo,’ bean curd, or ‘tokua,’ fermented bean curd or ‘tahuri,’ not knowing that they were prepared from this bean. The seed is known in some parts of the Philippines, where it is grown, as ‘utao.’”

“The main object of this pamphlet is to encourage the Filipino people to use more soy beans, and preparations made from them as food” (p. 3-4).

“Soy beans are grown in some parts of the Philippines. According to Doctor Roxas, Director of the Bureau of Plant Industry, 2,481 tons were grown in Batangas in 1921 and 4,218 tons, in 1930. However, the importation of soy beans in 1924 was 4,657 tons. Doctor Roxas says that soybeans can be grown in all parts of the Philippines” (p. 6).

“Immature soy beans may be cooked in the same way as lima beans (*patani*)” (p. 7).

“The soy-bean curd was first produced by Whai Nain Tze, before the Christian Era and was introduced into Japan from China by the Buddhists. It was introduced into the Philippines by the Chinese and has become a very popular food in Manila and in places where there are Chinese who manufacture it for sale. ‘Tokua’ on account of its high fat, protein, and mineral content, is called by the Chinese as ‘meat without bone,’ or ‘the poor man’s meat.’” The Chinese use burnt gypsum (about 1.5% by weight) as a coagulant. In some cases, the curds are wrapped in individual pieces of fine cheesecloth about the size of a small handkerchief, then pressed lightly for a few minutes. They are “unwrapped, spread on shallow bamboo trays (*bilao*) and partially dried at room temperature. Then they are dipped in a weak solution of turmeric to coat the outside in light yellow coloring. Some manufacturers soak the small cakes of curd in brine solution for a short time, then dip them in a solution of burnt sugar or molasses and bake them slightly before putting them on the market.” 100 gm of dry soybeans typically yield 350 gm of tofu (*tokua*) (p. 41).

The section titled “‘Tahuri’ or ‘Tahuli’” begins with 2 paragraphs and ends with a table very similar to those from Gibbs and Agcaoili (1912): “‘Tahuri’ is manufactured in China and exported to the Philippines in large stone jars or in small tin cans. There are some ‘tokua’ manufacturers in Manila that manufacture ‘tahuri’ for local consumption. Those that are imported from China are preserved in strong brine solution and the cakes are broken during the shipment so the liquid becomes like a thick emulsion containing pieces of the cured curd.” It then contains a new paragraph: “In Manila, the Chinese method of manufacture is to pack the large pieces of soy-bean curd, about 5 inches long, 4

inches wide, and 2.5 inches thick, with much crude salt, in empty gasoline cans. The curd is allowed to cure for a period of several months. During the curing period the bean curd changes from white to a brownish yellow color and develops a peculiar salty flavor to which the Chinese and many Filipinos are educated” (p. 42). Note 2. No information about a fermentation microorganism or process is given.

“The bean curd brains known to many Filipinos as ‘tojo’ is the unpressed soy-bean curd. The method of making ‘tojo’ is almost the same as the method used in making ‘tokua’, only that a smaller amount of the coagulating agent is used, and the very soft but solid mass formed is left undisturbed in the wooden container until used. The Chinese used to peddle this preparation in a wooden pail-shaped container, through different parts of Manila, but on account of the Philippine Health Service regulations, this product is now sold in the markets only. / “The ‘tojo’ is served with a few tablespoonfuls of medium thick brown-sugar syrup, which gives it flavor, the ‘tojo’ being almost tasteless. Sometimes it is eaten with sweet oil, sauce, and vinegar, or with finely cut meat and spices.” (p. 43).

“Dry bean curd: The fresh bean curd when dipped in burnt millet-sugar sauce and rubbed with fine salt will keep longer than the ‘tokua’ and is called ‘topu khan.’ This preparation is usually eaten in soups.”

Fragrant dry bean curd or *hsiang khan* (“fragrant dry”) has the consistency of smoked sausage. “It is made by subjecting the fresh bean curd to great pressure, which eliminates much of the water content. The pieces of semidry curd are soaked in a weak brine solution in which is dissolved burnt millet-sugar and to which is added powdered spices. The curd is then dried to hardness. This preparation keeps indefinitely and is used in soup making and in vegetable dishes” (p. 43).

Note 3. Cruz and West (1932, p. 78) state that as part of a campaign by the Bureau of Science to encourage the Filipino people to use more soy beans, Miss Orosa “has made excellent cakes, cookies, puddings, sauces, soups, custards, ice cream, and other tasty preparations from Philippine soy beans.”

Note 4. The author pioneered the branch of the branch of the Home Extension Service in which home demonstrators helped women in solving their home problems. She started the organization as a food preservation unit under the Bureau of Science in 1923, starting with six home demonstrators that she herself trained. That group became the forerunner of the Home Extension Service in the Philippines. For details on her work see: In: *A Half Century of Philippine Agriculture*. Manila, Philippines: Liwayway Publishing. p. 236-37.

Note 5. This is the earliest English-language document seen (Nov. 2003) that contains the word “meatlike.”

Note 6. This is the earliest English-language document seen (Oct. 2008) that uses the word “Hamanatto” to refer to soy nuggets. Orosa’s description of Hamanatto is based on that of Sawa (1902). Address: Chief, Div. of Food Preservation, Bureau of Science, Manila.

784. Hansen, Louis A. 1933. The soy bean as human food. *Life and Health* 48(2):21-23, 27. Feb. Also in J. of the Jamaica Agric. Soc., March 1933, p. 147-50.

• **Summary:** This is a good introduction to the soybean, based largely on information provided by Dr. A.A. Horvath (until recently of the health section, U.S. Bureau of Mines) and William J. Morse (senior agronomist at the USDA Bureau of Plant Industry). Discusses: History of the soy bean in Asia (especially China), nutritional benefits, soy bean flour, soy bean milk, and soy sauce.

Photos show: (1) Two men standing in a field of tall soybeans. (2) A person grinding soybeans with a stone mill to make soy bean milk in China. (3) A “Chinese courtyard with pots of fermented soybeans and brine from which the well-known soy sauce is made.” (4) Steamed soy beans about to be made into miso in Japan.

Note: In 1968 Hansen wrote a book titled *From So Small a Dream*, about Madison College (Madison, Tennessee), which pioneered soyfoods in the United States.

785. Suzuki, Tsuneya. 1933. Miso jôzô-chû ni okeru gan chisso-butso nakanzuku gurutamin-san no zôgen ni tsuite (zoku) [The increase and decrease of nitrogenous substances, especially glutamic acid, during miso fermentation (appendix)]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 11(2):135-38. Feb. [4 ref. Jap] Address: Kôgaku-shi, Japan.

786. Sayer, M. Wynne. 1933. Soybean (*Glycine hispida* Maxim.). *Agriculture and Live-stock in India* 3(5):470-74. Sept. [10 ref]

• **Summary:** Contents: Introduction and history. Economic importance of the soybean. Cultivation. Green fodder for cattle. Green manure. Standard varieties of soybean of the Pusa Farm.

“Green Fodder for cattle: The soybean has been tested here [on the Pusa Farm] for a number of years against other important leguminous crops such as meth (*Phaseolus aconitifolius*), cowpeas, and guar. The results of 12 years trials from 1917-18 to 1928-29 are given below.” Soybeans yielded 1,166 lb/acre of grain and 7,453 lb/acre of “green stuff.”

Note: This article contains the following sentences and phrases which are of linguistic interest: “Soybean is a monsoon crop” (p. 470). “... by growing soybean mixed with maize...” “Soybean has been tested here for yield” (p. 471). “In India, soybean is considered one of the best fodder crops” (p. 472). “Soybean occupies an important place in

the grazing cycle.” In standard American or British English, the word “soybean,” in each of these examples, would be preceded by the word “the.” Address: Offg. Imperial Agriculturist.

787. Iwamura, Iwao. 1933. Biochemical studies on miso, fermented soybean paste. I. *Bulletin of the Agricultural Chemical Society of Japan* 9(7-9):118-31. Bound in the back of Nippon Nogei Kagaku Kaishi (J. of the Agricultural Chemical Society of Japan). [Eng]

• **Summary:** The author conducted experiments with Sendaimiso, then with Shiromiso, Yedomiso, Inakamiso, and Hatchomiso. Miso protein, when added to a rice diet, has a high supplementary value. It has a somewhat higher supplementary value than “kōridōfu (frozen soy-bean curd)” but somewhat lower than fish protein.

Note: This is the earliest English-language document seen (March 2009) that uses the term “soybean paste” to refer to miso, or that mentions Sendaimiso, Yedomiso, Inakamiso, or Hatchomiso (spelled that way). Address: Agricultural Chemical Lab., Tokyo Imperial Univ., Komaba, Tokyo, Japan.

788. Miller, Carey D. 1933. Japanese foods commonly used in Hawaii. *Hawaii Agric. Exp. Station, Bulletin* No. 68. 43 p. Nov. See p. 1-10, 28-43. [18 ref]

• **Summary:** Contents (p. 1-10): Introduction. Soybean products. Edamame (green soybeans). Tofu (soybean curd). Kirazu (tofu residue) [okara]. Tonyu (soybean “milk”). Aburage (fried soybean curd). Miso (fermented rice and soybeans). Natto (fermented soybeans). Shoyu (soybean sauce). Koji (fermented rice). Pages 24-15: Kinoko (mushrooms). Fu (gluten cakes). Goma (sesame seeds).

Pages 28-43 (Ingredients and nutritional composition of prepared foods or recipes): Miso soup with tofu. Miso soup with wakame. Miso soup with daikon. Miso soup with milk. Tofu soup with lemon. Tofu shoyu soup. String bean shirae [shira-ae] (with tofu and miso). Carrot shirai. Konnyaku shirai. Eggplant with miso. Green onions with miso. Fish cakes with miso. Sesame seed sauce for vegetables (with shoyu). Nishime (with shoyu). Nigome (with aburage and shoyu). Kirazu with vegetables (with okara, aburage, shoyu). Noodles (somen or udon, with shoyu). Vinegar sauce for sushi. Inari-sushi (with aburage and shoyu). Maki-sushi. Appendix: Composition of some Japanese foods used in Japan.

Concerning edamame: “The Japanese use several varieties of fresh green soybeans. In Honolulu whole plants are purchased from the vegetable market. The pods are removed from the plants, placed in boiling salted water, and boiled for about 25 minutes. They are then drained and cooled, and the beans are kept in the pods until eaten. Often children eat them out of bags as they would candy. The fresh green soybeans appear to be an excellent food. They

are good sources of calcium, phosphorus, and iron, yield a basic ash, and, as compared with other fresh vegetables and fruit, have a remarkably high protein content. Vitamin tests in progress at the nutrition laboratory of the Hawaii Agricultural Experiment Station show that the cooked beans are very good sources of vitamins A, B, and G. The more general use of green soybeans should be encouraged in the home, and their consumption may be increased by selling them in school cafeterias.”

Concerning Kirazu (tofu residue): “Kirazu, or the residue of the soybeans left when tofu is made, has a crude fiber content of 3 to 4 percent, contains 4 to 5 percent of the protein of the beans, more than 1 percent of the fat, and 5 to 6 percent of the carbohydrate. Only a small part of kirazu is used for human food in Hawaii, by far the greater part being used as hog feed. Kirazu, however, is a utilizable, inexpensive food and might be more generally used than it is... Kirazu is used in combination with vegetables, or with fish, or dried shrimp, and seasonings.”

Concerning natto: Describes the process for making natto on a commercial scale in Honolulu. After cooking (without soaking) for about 8 hours in a large iron kettle, the “beans are thoroughly drained and placed on paper plates covered with wax paper. The plates are stacked one above another in large wooden boxes, covered with rice straw mats, and kept at a temperature of approximately 30°C. for 35 to 36 hours, when the product is ready for use... The fermented product is covered with a gray, slimy substance that forms strings or threads when the beans are pulled apart, indicating good quality... Although no molds or yeasts are added to the cooked soybeans, O.N. Allen, of the botany department of the University of Hawaii, who examined several samples of fresh natto from Honolulu, found 2 molds, 4 bacteria, and an aspergillus present. The enzymes of some of these organisms probably caused the conversion of a small part of the protein to simpler substances.”

Photos show the following (each food accompanied by its Japanese name written in both Chinese characters and *katakana*): Edamame, in the pods on the plant, and shelled in a dish. Tofu kasu [okara] on a plate. Tofu on a dish. Soymilk in a glass. Three triangles of aburage on a dish. Miso on a dish. Natto in a white rectangular commercial paper tray about 3½ by 6 by 1 inch deep. Koji on a plate.

Note 1. This is the earliest English-language document seen (July 2001) that uses the term “fresh green soybeans” to refer to green vegetable soybeans.

Note 2. This is the earliest English-language document seen (Oct. 2001) that uses the Japanese word *kirazu* to refer to okara.

Note 3. This is the earliest document seen (July 2003) that mentions commercial natto production in Hawaii.

Note 4. This is the earliest English-language document seen (Feb. 2004) that uses the word “strings” or “threads” in

connection with natto. Address: Specialist in Nutrition, Honolulu.

789. Sakurai, Yoshito. 1933. Miso no seibun ni tsuite. III. Yûri shibô-san oyobi saponins [On the constituents of miso. III. Free fatty acids and saponins]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 9(12):1326-30. Dec. [4 ref. Jap]

• **Summary:** Free oleic, linoleic, linolenic, stearic, and palmitic acids are present. Nine kg afforded 4 gm of the calcium salt, melting point 264-266°C, of a saponin, melting point 232°C, identical with soybean saponin. Address: Nôgaku-shi, Tokyo Daigaku Nôgaku-bu, Nôgei Kagaku Suzuki Kenkyû-shitsu.

790. Iwamura, Iwao. 1933. Miso no eiyô-ka ni kansuru kenkyû. I. Kome no tanpakushitsu ni taisuru miso no tanpakushitsu no hosoku-teki kachi [Nutrition value of miso. I. Supplementary value of miso protein for rice protein deficiency]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 84. p. 377-90. [17 ref. Jap]

791. Sakurai, Yoshito. 1933. Miso no kagaku-teki kenkyû. I. Sendai miso jukusei-chû no henka ni tsuite [Chemical analysis of miso. I. On the changes in Sendai miso during fermentation]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 81. p. 187-89. [Jap]

792. Sakurai, Yoshito. 1933. Miso no seibun ni tsuite. II. Sendai miso (ichi nen jukusei) no yûki enki ni tsuite [On the constituents of miso. II. Organic bases in Sendai miso which has been aged for one year]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 9:347-51. [Jap]

• **Summary:** Discusses the purine fraction, picric acid, picrate, flavian, diamine, and arginine. Address: Nôgaku-shi, Japan.

793. Sakurai, Yoshito. 1933. Miso no seibun (yohô). Sendai miso jukusei-chû no henka ni tsuite [The constituents of miso (Preliminary note). On the changes during ripening of Sendai miso]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 9:5-6. [Jap]

• **Summary:** A table shows the nutritional composition for 13 nutrients of Sendai miso at the start of fermentation, and after 1, 3, 6, 9, and 12 months. Address: Nôgaku-shi, Japan.

794. Sakurai, Y. 1933. Miso no kagaku-teki kenkyû. III. Miso no yûki-san ni tsuite [Chemical analysis of miso. III. On the organic acids in miso]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 81. p. 191-96. [Jap]

795. Sakurai, Y. 1933. Miso no kagaku-teki kenkyû. II. Shibô no ippan seijo ni tsuite [Chemical analysis of miso. II.

On the general condition of oils and fats]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 81. p. 189-91. [Jap]

796. Wakayama, Harutarô. 1933. Chihô-teki ichi miso no bunseki hôkoku [Report on an analysis of miso from various parts of Japan]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 88. p. 629-31. [Jap]
Address: Zaidan Hojin Ryoshoku Kenkyu-kai.

797. Japanese American News Inc. / Nichibei Shinbunsha. 1933. Nichibei jûshoroku [The Japanese American directory. No 29]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]*
Address: San Francisco, California.

798. Morse, W.J. 1933. Soybeans now a major crop in United States; Few grown before 1898. *Yearbook of Agriculture (USDA)* p. 198-205. For the year 1933.

• **Summary:** Contents: Variety adaptation. Variety utilization (incl. bean curd, bean milk, soy sauce, miso (bean paste), bean sprouts, green vegetable beans, bean flour, roasted beans, bean confections, beverages, oil and meal, special fermented bean products). Soybean oil and meal industry. Soybean meal. Soybean oil. Soybeans for human food. Soybeans as an export crop.

“Variety adaptation: The Virginia, Laredo, Manchu, and Biloxi have a greater range than most other varieties. The Virginia, Mansoy, and Harbinsoy varieties excel on the less productive types of soil, while on better soils the Mansoy and Harbinsoy give inferior results.

“Since the Department of Agriculture began to introduce soybean varieties more than 7,000 samples of beans have been collected from Japan, Chosen [Korea], Manchuria, China, Taiwan (Formosa), Java, Sumatra, and India. There are more than 2,000 distinct types in this large collection, ranging from 75 to more than 200 days in reaching maturity. At present about 40 varieties are generally grown in the United States.”

“In Japan, where the soybean is used extensively as a green vegetable, more than 60 varieties, ranging in maturity from 75 to 160 days and differing in flavor, are grown solely for this purpose. The soybean is used in the United States primarily as forage, being preserved either as hay or silage, or cut and fed green as soilage, and is also pastured extensively with hogs and sheep.” Address: Bureau of Plant Industry, Washington, DC.

799. Japanese American News Inc. / Nichibei Shinbunsha. 1934. Nichibei jûshoroku [The Japanese American directory. No 30]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Published Jan. 1, 1934. Address: San Francisco, California.

800. **Product Name:** Koji, Miso.

Manufacturer's Name: Kawano Shokai (Kawano Co).

Manufacturer's Address: 215 M St., Sacramento, California. Phone: Capital 5116W.

Date of Introduction: 1934. January.

New Product–Documentation: Ad (1/8 page) in The Japanese American Directory. 1934. p. 168. Makes Shira shika [White deer] brand koji and miso. Note: This company has the same address and phone number as Sakara-fu (Sacramento) Joji, Miso Seizô-sho. See p. 169 (directory).

801. Nakayama, Shuhei. 1934. Miso jôzô no eiyô kagaku-teki kosatsu. IX. Miso gan-chisso seibun no hakumai tanpakushitsu ni taisuru hosoku kôka [Nutritional studies on miso fermentation. IX. Supplementary effect of miso protein on the protein deficiency in rice]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 12(1):6-14. Jan. [8 ref. Jap] Address: Osaka Teikoku Daigaku Kogakubu, Jozogaku Kyoshitsu, Takada Kenkyushitsu, Japan.

802. Nishida, Kôtârô. 1934. Kagoshina-ken Oshima-chihô tokusan no sotetsu denpun oyobi sotetsu miso [On cycad miso or sotetsu miso, a specialty product of the Oshima area of Kagoshima prefecture, made from the starch of the sago palm]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 12(4):271-77. [6 ref. Jap]

• **Summary:** The tree called cycad or sago palm in English (*Cycas revoluta* Thunb.), is called sotetsu in Japanese. Address: Nôgaku-shi, Kagoshima Koto Norin Gakko Nogeikagaku Kyoshitsu, Japan.

803. Mogi, Masatoshi. 1934. Miso jôzô ni kansuru saikin no kenkyû ni tsuite. I. [Research on the bacteria involved in the manufacture of miso. I.]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 10(9):983-96. Sept. English-language summary in Bulletin of the Agricultural Chemical Society of Japan 12:52-53, bound at the back of Nippon Nogeikagaku Kaishi. [20 ref. Jap; eng] • **Summary:** The value of miso production in Japan in recent years is more than 20 million yen per year. Address: Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

804. Yamaguchi, H.S.K.; Garis, Frederic de; Sakai, Atsuharu. 1934-1950. We Japanese: Being descriptions of many of the customs, manners, ceremonies, festivals, arts and crafts of the Japanese, besides numerous other subjects. Yokohama, Japan: Yamagata Press. 592 p. 889 illust. Index. 21 cm.

• **Summary:** “Written with great style, this work brings traditional Japan to life in a way that no contemporary guide book can, explaining all the curious features of daily life in Japan.” This is a combination of 3 books. Book I (p. 1-183), written by Frederic de Garis for H.S.K. Yamaguchi, was first published in Dec. 1934. Book II (p. 183-375), written by Atsuharu Sakai for H.S.K. Yamaguchi, in June 1937. Book III (p. 377-592), with the same authorship as Book II, was first published in June 1949. All contain entertaining information on Japanese culture and foods.

They discuss: Red rice (*sekihan*, with azuki beans, p. 36). The Broken Needles Mass or Hari-Kuyo (p. 160, needles are stuck into tofu on Feb. 8 or Dec. 8), Sukiyaki (p. 264-66, incl. its origin and history), sembei (p. 267, senbei or rice crackers, incl. shoyu), Miso or bean-paste (p. 269-70), Shoyu or Japanese soy (p. 271-73, incl. Kikkoman, Higeta, Yamasa, Kagi-Yamasa, and Marukin logos and wooden kegs), Sekihan and hot water (p. 292, azuki beans as part of a taboo for Japanese girls), Setsubun or Bean-Throwing Ceremony (p. 554-55, mame-maki held on setsubun).

Note: This is the earliest English-language document seen (March 2009) that uses the term “bean-paste” (not preceded by the word “soy” or “soya”) to refer to miso. Address: Manager, Fujiya Hotel, Miyanoshita, Japan.

805. Hara, Tetsukazu; Wada, Fuki. 1934. Miso ni kansuru kenkyû. II. Jukusei katei ni okeru miso tanpakushitsu yôka no hendo [Studies on miso. II. Changes in the nutritional value of miso proteins during ripening]. *Eiyo Kenkyujo Hokoku (Report of the Imperial Government Institute for Nutrition)* 6(2):29-41. [9 ref. Jap] Address: Eiyo Kenkyusho: 1. Gishi; 2. Gishu.

806. Hara, Tetsukazu; Wada, Fuki; Wachi, Teru. 1934. Miso ni kansuru kenkyû. III. Shokuen oyobi ekisu-ben o jokyo shitaru miso o motte suru miso tanpakushitsu no eiyô shiken [Studies on miso. III. Nutritional investigation on miso protein using miso from which the salt (NaCl) and an extract were removed]. *Eiyo Kenkyujo Hokoku (Report of the Imperial Government Institute for Nutrition)* 6(2):42-49. [2 ref. Jap] Address: Yoei kenkyusho: 1. Gishi; 2. Gishu.

807. Hara, Tetsukazu; Wada, Fuki. 1934. Miso ni kansuru kenkyû. IV. Jukusei-chû ni okeru miso genryô bitamin no henka [Studies on miso. IV. Changes of vitamins during miso ripening]. *Eiyo Kenkyujo Hokoku (Report of the Imperial Government Institute for Nutrition)* 6(2):50-54. [1 ref. Jap] Address: Eiyo Kenkyusho: 1. Gishi; 2. Gishu.

808. Hara, Tetsukazu; Wada, Tomikazu. 1934. Kome nuka no riyô ni kansuru kenkyû. IV. Kome nukamiso-chû no

bitamin B-1 [Research on the utilization of rice bran. IV. Vitamin B-1 in miso made with rice bran]. *Eiyo Kenkyujo Hokoku (Report of the Imperial Government Institute for Nutrition)* 6(2):55. [Jap]

• **Summary:** This is about using rice bran (nuka) with soybeans as ingredients in miso. Address: Eiyo Kenkyusho: 1. Gishi; 2. Gishu.

809. Hara, Tetsukazu; Wada, Tomikazu. 1934. Kome nuka no riyô ni kansuru kenkyû. V. Kome nukamiso-chû no bitamin B-1 hoi [Research on the utilization of rice bran. V. Vitamin B-1 in rice miso. Addendum]. *Eiyo Kenkyujo Hokoku (Report of the Imperial Government Institute for Nutrition)* 6(2):64-69. [4 ref. Jap]
Address: Eiyo Kenkyusho: 1. Gishi; 2. Gishu.

810. Iwamura, Iwao. 1934. Miso no jukusei ni oyobosu ondo no eikyô [Influence of temperature on miso ripening]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 93. p. 945-51. [7 ref. Jap]

811. Kankito, ? 1934. [Hygienic investigation of mustard miso]. *Chosen Yakugaku (Korean Pharmacology)* 131:46-. [Jap]*

812. Matsumoto, K.; Aomori, Y. 1934. Miso-chû no saikin-ruï ni tsuite. I. Miso-chû no saikin-ruï no gakujutsu-teki shiken [On bacteria in miso. I. Scientific research]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 119. p. 71-108. [11 ref. Jap]
Address: Jozo Shikensho. 1. Gishi; 2. Moto Kenshu-in.

813. Matsumoto, K.; Mitsuhashi, K. 1934. Miso seizô ni saikin-ruï ôyô shiken. Miso-chû no saikin-ruï ni tsuite. II. [The application of bacteria to miso manufacture. On the bacteria in miso]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 119. p. 369-79. [Jap]
Address: Jozo Shiken. 1. Gishi; 2. Moto Kenshuin.

814. Mogi, Masatoshi. 1934. [Studies on the microorganisms in the manufacture of "miso." I.]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 10:983-996. [Jap; eng]*

• **Summary:** All the organisms isolated appear to play a part in the maturation of miso. Address: Kikkoman.

815. Okazawa, Taroku. 1934. Kôbo riyô miso sokujô-hô [Accelerated fermentation of miso using yeast (Abstract)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 29(4):74. [Jap]

• **Summary:** Original in Ryo-Yuu (1934). No. 9, p. 3.

816. Okazawa, Taroku. 1934. Kôbo riyô miso sokujô-hô [Accelerated fermentation of miso using yeast]. *Ryo-Yuu*

No. 9. p. 3. Abstract in *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)*. 1934. Vol. 29. No. 4, p. 74. [Jap]*

817. Park, Y.R. 1934. [Bacteriological studies on Korean doenjang and kochojang]. *Chiba Igakukai Zasshi (J. of the Chiba Medical Society)* 13:2671-2708. [Jap]*

818. Sakurai, Yoshito. 1934. Miso no seibun yushi to san ni tsuite [Constituents of miso: fats and acids]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 29(7):90-96. [Jap]

819. Sakurai, Yoshito. 1934. Miso no seibun ni tsuite. IV. San ni tsuite [On the constituents of miso. IV. Acids]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 10:486-95. [Jap]

• **Summary:** Acetic, lactic, and succinic acids are identified. Amounts of ethyl ether-soluble free acid were small. Acidity is probably due to acid phosphates. Address: Tokyo Teikoku Daigaku, Nôgaku-bu.

820. Adachi, Isamu; Sakurai, Shigeru. 1934. *Nihon shokumotsu-shi [History of Japanese foods]*. Tokyo: Yuzankaku. 480 p. [Jap]

• **Summary:** This is the best book seen on the history of Japanese foods. The following soyfoods are discussed: Firm tofu, soymilk and okara (p. 290-91; discusses the *Teikun Orai* by Iseno Teijo, tofu-kan, tofu-jiru = soymilk, setsurun-sai = okara), yuba (p. 336), shoyu and tofu (p. 370-71), unohana (okara, p. 377), tofu and natto (p. 382-83).

821. *Manchoukuo Year Book (The)*. 1934. [Soya beans]. 1934. p. 267-79, 399-409, 466. Published by Toa-Keizai Chosakyoku (East-Asiatic Economic Investigation Bureau), Tokyo. [Eng]

• **Summary:** Page 466 shows miso and soy sauce production in Manchuria. The 17 Japanese-run plants make 2,800 tonnes of miso and 4,550 tonnes of soy sauce. The 44 Manchurian-run plants make no miso and 1,381 tonnes of soy sauce. The number of factories in each major city and the capital assets of the companies are listed. Dairen is the main center of Japanese miso and soy sauce production, followed by Mukden, then Port Arthur. Hsinking is the main center of Manchurian soy sauce production.

822. Iwamura, Iwao. 1935. Biochemical studies on "miso", fermented soybean paste. II. Influence of temperature upon the ripening of "miso". *Bulletin of the Agricultural Chemical Society of Japan* 11(1):1-7. Jan. Bound in the back or front of *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)*. [8 ref. Eng]

• **Summary:** "In order to ascertain the influence of temperature upon the ripening of 'miso,' 5 series of samples

were kept for fermentation at 55°, 35°, 27-32°, 25° and 15-25°C respectively. The samples taken at different intervals were analyzed and at the same time the chemical changes during the steeping and boiling of the soybeans were determined.

“It has been confirmed that the fermentation at 55°C proceeds most rapidly, attaining the maximum after 8-12 days; at a lower temperature the fermentation proceeds more slowly, thus needing 15-25, 20-30 and 40-60 days of ripening at 35°, 25° and 15-25°C respectively. The amount of ammoniacal nitrogen and free acid was comparatively large at 35°C.

“It has also been observed that the ripening of ‘miso’ is much accelerated by the enzyme action of ‘koji.’ By the steeping of the soybeans the increase of reducing sugars and free acids is noticeable and by boiling them some proteins, reducing and non-reducing carbohydrates are dissolved in water.” Address: Agricultural Chemical Lab., Tokyo Imperial Univ., Komaba, Tokyo.

823. Sakurai, Yoshito; Iwamura, Iwao. 1935. Miso no seibun. V. Bitamin B ni tsuite [The constituents of miso. V. Vitamin B]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 11(4):272-83. April. [12 ref. Jap]

• **Summary:** The vitamin B-1 and B-2 contents are determined. During ripening B-2 remained unchanged. Address: Tokyo Teidai Nogakubu (Inst. of Dairy Science), Konai Ryoshoku Kenkyukai.

824. Sakurai, Yoshito. 1935. Miso no seibun. VI. Futatabi jukusei-chû no henka ni tsuite [The constituents of miso. VI. On the changes during the fermentation of twice-fermented miso]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 11(5):349-54. [3 ref. Jap]

• **Summary:** Discusses Edo miso. The acid taste of miso is due to organic acids soluble in ethyl ether. Address: Tokyo Teidai Nogakubu (Inst. of Dairy Science), Konai Ryoshoku Kenkyukai, Nôgaku-shi.

825. Honda, Shigejiro. 1935. Shiro-miso seizô-hô [Method of making white miso]. *Japanese Patent*. Sept. 30. Toku Ko (Published Examined Patent Applied), No. 4096, Sept. 30. [Jap]
Address: Kojima-cho 12 Banko, Muromachi-dori Ichi-jo agaru, Kamikyo-ku, Kyoto-shi, Japan.

826. Iwamura, Iwao. 1935. Biochemical studies on “miso”, fermented soybean paste. III. On the effect of cystine upon the nutritive value of miso. *Bulletin of the Agricultural Chemical Society of Japan* 11(9):128-34. Sept. Bound in the back or front of *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)*. [8 ref. Eng]

• **Summary:** The nutritive value of the miso-protein, when used as a supplement to a rice diet for albino rats, is increased by addition of cystine. For young rats the optimum amount of cystine is about 0.1% (> 0.5% is harmful), but for adult rats 0.5% is favorable. Address: Agricultural Chemical Lab., Tokyo Imperial Univ., Komaba, Tokyo.

827. **Product Name:** Koji Miso.

Manufacturer’s Name: Asahi-Kooji.

Manufacturer’s Address: 26 Nawahi Lane, Hilo, Island of Hawaii. Phone: 2442.

Date of Introduction: 1935.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1934-35. p. 516. Asahi-Kooji (Mr. Kaku Tatsuo). Kooji Miso and Noodles. Nawahi Lane rear Kwong See Wo Hilo. Tel. 2442. P.O. Box 84. He continues to be listed until 1938-39.

828. *Economisch Weekblad voor Nederlandsch-Indie*. 1935. Invoer van sojaboonen, soja en taotjo [Import of soybeans, soy sauce and taotjo (Indonesian-style miso)]. 4(28):1082. [Dut]

829. Hama, Masakazu. 1935. Ichijuku miso no seizô-hô [Method of making fig miso]. *Japanese Patent* 113,099. In Toku Ko, No. 2704. July 1. [Jap]
Address: Miyawaki-cho 426-1, Takamatsu-shi, Japan.

830. Iwamura, Iwao. 1935. Miso no eiyô-ka ni taisuru kenkyû. II. Kome no tanpakushitsu ni taisuru miso no tanpakushitsu no hosoku-teki kachi ni oyobosu shisuchin no eikyô [Research on the nutritional value of miso. II. Effect of cystine on the supplementary value of miso protein for rice protein]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 105. p. 151-58. [7 ref. Jap]

• **Summary:** The amount of cystine in 100 gm of fresh miso was: Shiromiso (sweet white miso) 64.2-67.2 mg, Yedomiso 45.4-85.6 mg, Sendai miso 50.9-86.6 mg, and Hatcho miso 93.4-103.2 mg.

831. **Product Name:** Miso.

Manufacturer’s Name: Jinzo Fukuda Miso. Later renamed Fukuda Miso Factory (Fukuda Koji, Miso Seizo-sho).

Manufacturer’s Address: 395 Buckle Lane (Later: North Vineyard), Honolulu, Oahu, Hawaii.

Date of Introduction: 1935.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1934-35. p. 169. “Fukuda Jonzo Miso, 395 Buckle Lane. Note: Is this the origin of the Fukuda Miso Factory, which doesn’t seem to be listed in any Hawaii directory?”

Nihei. 1978. *Nippon Jozo Kyokai Zasshi*. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." Says: "Fukuda Koji, Miso Seizo-sho was located at N. Vineyaro [sic, N. Vineyard], Honolulu." No year of founding or founder are given. Wm. Higa. 1980. *History of Miso Companies in Hawaii*. Mr. Fukuda sold this company in about 1938 to Taro Higa, who made it (at the same location) into the Yamajyu Shoyu & Koji Miso Co.; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. Company started by Mr. Fukuda. No longer in business.

832. Oota, Kiyoshi. 1935. Shiro miso jukusei-chû no seibun no henka narabini sono sanpai genshō ni tsuite [On the changes of constituents during ripening of sweet white miso (shiro miso) and on the sour putrefaction]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 30(8):73-74. [Jap]

833. Oota, Kiyoshi. 1935. Shiro miso jukusei-chû no seibun no henka narabini sono sanpai genshō ni tsuite [On the changes of constituents during ripening of sweet white miso (shiro miso) and on the sour putrefaction]. *Kwa* No. 16. p. 13-. [Jap]*

• **Summary:** An abstract of this article appeared in *Nippon Jozo Kyokai Zasshi (Journal of the Brewing Society of Japan)* 30(8):73-74 (1935).

834. **Product Name:** Miso.

Manufacturer's Name: Yamada (Shigeo) Miso.

Manufacturer's Address: Paia, Maui, Hawaiian Islands.

Date of Introduction: 1935.

New Product–Documentation: Directory of Honolulu and the Territory of Hawaii. 1934-35. p. 632. Yamada Shigeo Miso. Paia [Maui]. 1947-48 Directory, p. 392. Honolulu Miso & Shoyu Factory (Shigeo Yamada). Wholesale Miso & Shoyu. 405d Buckle Lane. Tel. 66254. Which see.

835. **Product Name:** [Light House brand Soy Sauce, Chiang, Fermented Tofu].

Foreign Name: Jiang-yu, Dou-jiang, Furu.

Manufacturer's Name: Yeo Hiap Seng.

Manufacturer's Address: 410 Outram Road, Singapore 3, Singapore.

Date of Introduction: 1935.

How Stored: Shelf stable.

New Product–Documentation: Letter from Alan Yeo of Yeo Hiap Seng. 1982. April; YHS news release 1990. Oct.; Letter from Charles Yeo of Yeo Hiap Seng. 1984 and 1991. Yeo Hiap Seng started in China in 1900. In 1935, during the Japanese invasion of China, when life was difficult and unsettled in Fukien [Fujian] province, Yeo Keng Lian sent his eldest son, Yeo Tian In, to Singapore to investigate possibilities there. The son founded the Yeo Hiap Seng Sauce Factory at 410 Outram Road, Singapore 3. He was

joined shortly by the rest of the family. The company continued to make the same three fermented soy products that it had made since 1900 in China. In 1947 the growing business was moved into larger quarters at 950 Dunearn Road, its present location. The move out of China was a wise one, for in 1949 the three Yeo Hiap Seng plants in Fukien were taken over by the Chinese Communists. By the mid-1940s, Yeo's quality soy sauce was a common sight in Singapore.

Note: This is the earliest known commercial soy product made in Singapore, or in Southeast Asia.

836. Crespí, Luis. 1935. La soja y su cultivo [The soybean and its cultivation]. Spain. 32 p. Series: Catechisms for Farmers and Cattlemen/Stock-Farmers (*Catechismos del Agricultor y del Ganadero*). 17 cm. [Spa]

• **Summary:** Contents: I: Cultivation of the soybean (*la soja*; p. 3-18): 1. Description of the plant. 2. Origin of the soybean. 3. Varieties of soybeans (*Variedades de sojas*): Early maturing, semi-late, late. 4. Needs of the soybean: In water, in soil, in fertilizer. Fixation of nitrogen from the air in soybeans. 6. Place in the rotation. 7. Preparatory work. 8. Planting: Carrying out the sowing, the necessary seeds, depth of planting. 9. The seeds sprout. 10. Cultural care. 11. Maturity. 12. Diseases (*enfermedades*). 13. Harvest: As a forage plant, as a producer of seeds. 14. Yield.

II: Applications of the soybean (p. 19-28). 1.

Composition of the plant: Composition of soybean forage, composition of the seeds, composition of the straw (*la paja*). 2. The soybean in the feeding of animals: As a forage plant, as a plant that produces seeds, soybean cakes (*tortas de soja*), soybean straw. 3. The soybean as a human food. 4. Industrial products from the soybean (from the oil: paints and varnishes, soap). 5. The soybean as a fertilizer.

III: Geographic distribution: 1. Worldwide cultivation of the soybean. 2. The soybean in Spain.

The soybean as a human food (p. 27): The seed is rich in protein. Whole soybeans (*Semillas de soja*) can be used like French beans and peas, mature and dry, and toasted like peanuts. The first two leaves of very small soybean plants (*Plantitas de soja*) can be used in salads or cooked. Soy flour can be used in bread, pastries, biscuits, or diabetic diets. Condiments, widely used in China and Japan, include natto, miso, tou-chiang, and shoyu. One can make soymilk (*leche de soja*), and use it to make soy cheeses (*quesos de soja*). The seeds of certain varieties can be roasted to make substitutes for cocoa or coffee.

Soybean cultivation worldwide (p. 29-30): In France, starting in 1880, the house of Vilmorin, started selling the variety Etampes. Also in 1880, the soybean was cultivated in Portugal in the Botanical Garden at Coimbra (in west central Portugal).

"The soybean in Spain (p. 30): Thirty five years ago [i.e. in 1900] my father tried cultivating soybeans in Pontevedra.

[Note: Pontevedra is a province and city in the northeast corner of Spain, just north of Portugal, on the coast of the Atlantic Ocean. The city is near the mouth of the Ria de Pontevedra, at about 42.4° north latitude]. For two consecutive years, and using seeds of the variety Etampes from the House of Vilmorin seedsmen, he obtained identical results: excellent vegetation, but a small yield of seeds because the plants failed to fully mature.

“More than thirty years ago [i.e. before 1905], the count of San Bernardo tried growing the soybean, with excellent results, on his estate “El Alamillo,” at Ecija (near Seville).

“In 1910 the soybean was cultivated by Mr. Noriega in Jerez (near Cádiz {Cadiz}), and the results obtained seem to indicate that the harvest was of medium size due to the poor condition of the seeds; but the plant responded brilliantly, showing healthy growth and resistance to the drought.

“In 1917 the ambassador of Spain stationed in Shanghai forwarded to the Commercial Information Center of the Spanish Secretary of State three varieties of soybean seeds: small black, yellow, and green. These seeds were very probably used in cultural trials, even though we do not know the results that were obtained. In the same year Mr. Juan Abril reported in the periodical *Revista Ibérica [Iberian Review]* of his successful soybean trials conducted in Tortosa (in Tarragona province [in northeastern Spain]).

“Finally, during the years 1914 and 1915, Mr. Santiago F. Valderrama, the brigadier general from Artillería [Artillery], conducted soybean cultural trials in Montilla (in Córdoba / Cordova province).

“To his cultivation and enthusiastic encouragement of the cultivation of this plant in Spain, we owe the photograph on the cover of this little instruction book. It shows the top of a mature soybean plant grown by him in Montilla. Two more generations of soybean plants were cultivated in the same locality.”

Illustrations (line drawings) show: (1) Leaves of the soybean and the common bean (*judía = Phaseolus vulgaris*) (p. 4). (2) Flowers of the soybean and the common bean. (3) A soybean stem, with 3 leaves and 2 pods; an opened soybean pod showing 3 seeds (p. 5). (4) An uprooted soybean plant, showing nodules on the roots, and abundant pods (p. 12). (5) Comparison of two soybean plants, with and without nodules. The one with nodules is larger and has many more and larger pods (p. 13).

Note: This is the earliest document seen (Feb. 2001) concerning soybeans in Portugal, or the cultivation of soybeans in Portugal. This document contains the earliest date seen for soybeans in Portugal, or the cultivation of soybeans in Portugal (1880 at the botanical garden in Coimbra). The source of these soybeans is unknown. Address: Catedrático de Agricultura de Instituto-Escuela, Spain.

837. Japanese American News Inc. / Nichibei Shinbunsha. 1935. Nichibei jūshoroku [The Japanese American directory. No 31]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). Index of cities. 23 cm. [Eng; Jap]*
Address: San Francisco, California.

838. Morphy, Marcelle. comp. and ed. 1935. Recipes of all nations. New York, NY: William H. Wise & Company.
• **Summary:** Soy is mentioned frequently in the chapter on Japan. “One sauce reigns supreme in Japan—*Shoyu*, which replaces salt in many dishes and which is used in the cooking of almost everything: soup, fish, poultry, meat, and vegetables. It is the popular condiment with cold fish or meat and is added to salad dressing. It is made from the Soya bean seeds, wheat, and pure salt, and has a pleasant and distinctive flavor, unlike that of any of our European bottled sauces.”

Soy-related recipes include: Misoshiru (miso soup with tofu and miso, p. 755). Misozuke (fish with red or white bean curd and red or white miso, p. 758). Seki han (with azuki beans, p. 759). Suki yaki (beef and vegetables, with tofu and shoyu, p. 761). Yokan (Japanese cakes with azuki beans, p. 762). Misso (miso, homemade with soya beans, malt, and salt, p. 763). Tofu (dried bean curd, p. 763).

Miso is said to be made as follows: “The proportions are 1 bushel of Soya beans, 1 bushel of malt, and 3 bushels of salt. The beans are squeezed and mixed with the malt and salt and kept in a cask for 6 months to mature.”

Concerning tofu: “Cubes of tofu are frequently mentioned in Japanese recipes. Tofu is made by soaking the dry beans in water for a day, pounding them in a stone mortar, straining into square molds and mixing with brine. They are then boiled till they become hard and firm.”
Address: Countess.

839. Murasaki, Lady (Shikibu). 1935. The tale of Genji. A novel in six parts. Translated from the Japanese [Genji Monogatari] by Arthur Waley. 2 vols. Boston and New York: Houghton Mifflin Co. 1135 p.

• **Summary:** Lady Murasaki Shikibu’s brilliant 11th century novel colorfully describes the florescence of art and literature in Japan during the Heian period (794-1185). More specifically, these “amorous adventures of the peerless prince Genji” describe the life of Heian court nobility. Reischauer and Fairbank (1960, p. 516-17) call this “the greatest work of all Japanese literature.” Fairbank, Reischauer, and Craig (1973) state: “The greatest work [of Heian literature] was the massive *Tale of Genji* by Lady Murasaki [born ca. 978], which recounts with great psychological subtlety and aesthetic sensitivity the life and loves of the imaginary Prince Genji, and in the process gives us a detailed picture of the court life of the time. The *Tale of Genji* has exerted immeasurable literary influence

throughout Japanese history and in Arthur Waley's masterful translation has become one of the great world classics."

The Kodansha Encyclopedia of Japan says of the *Genji Monogatari* "By general repute the supreme masterpiece of Japanese prose literature. Written in the early 11th century, when prose literature scarcely existed in the West, it has been called the first great novel in the literature of the world. A very long work, upwards of 1,000 pages in translation, or some three-quarters of a million words, it has an essentially simple plot, describing the life and loves of an erstwhile prince known, from his family name, as 'the shining Genji,' and, after his death, the less successful loves of a youth who passes before the world as his son, but is in fact the grandson of his best friend.

"The earliest surviving texts are fragmentary, from late in the Heian period (794-1185), and it is only from the medieval period (13th -16th centuries) that complete texts can be put together. The absence of a holograph manuscript and the absence as well of detailed information about the author, a court lady known as Murasaki Shikibu, means that no final answers can be given to questions concerning the circumstances of composition. From evidence in the work known as *Murasaki Shikibu nikki* (Murasaki Shikibu Diary), it does not seem possible to deny that at least a part of the work is from the hand of Murasaki Shikibu, or that at least a part of it was written before she entered court service, in the first decade of the 11th century. From the Sarashina Nikki, the diary or memoirs of another court lady, it seems equally certain that a long prose work, approximately the length of the present *Genji*, had been completed and widely circulated by the end of the first quarter of the 11th century." Address: Kyoto, Japan.

840. **Product Name:** Asahi Miso.

Manufacturer's Name: Asahi Miso Seizo-sho.

Manufacturer's Address: 519 East 1st St., Los Angeles, California. Phone: VAndike 5702.

Date of Introduction: 1936. January.

New Product-Documentation: The Japanese American Directory. 1936. p. 356 (1/10-page ad, all in Japanese) and p. 374 (directory). Also in 1937, p. 320 (directory) and p. 320 (1/12 page ad). Also in 1938, p. 348. Also in 1939, p. 339.

The Japanese American Directory. 1940. p. 326-27. Asahi Miso Seizô-sho (in characters), Asahi Miso Mfg. Co. Listed in the category "Foodstuff Factory." Also in 1941, p. 328.

Note: Hokubei Miso Seizô-sho was at this address in 1930.

841. Japanese American News Inc. / Nichibei Shinbunsha. 1936. Nichibei jûshoroku [The Japanese American directory. No 32]. San Francisco, California: The Japanese

American News Inc. (Nichibei Shinbunsha). Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Soyinfo Center has only the pages mentioning soyfoods in the following cities in California: San Francisco, Oakland, San Jose, Sacramento, Fresno, Los Angeles. Plus Portland (Oregon), and Seattle (Washington). See individual directory entries and advertisements. Published Jan. 1 by Nichibei Shinbunsha. Address: San Francisco, California.

842. **Product Name:** Miso, Koji.

Manufacturer's Name: Tsuruda Goshi-gaisha (Tsuruda Limited Partnership) (Miso, Koji).

Manufacturer's Address: 345 E. Second St., Los Angeles, California. Phone: MUTual 1057.

Date of Introduction: 1936. January.

New Product-Documentation: The Japanese American Directory. 1936. p. 374 (directory). Note: This company may be a branch of the Tsuruda Kyodai Goshi-gaisha (Miso, Shoyu) now operating in San Jose at 472 Josefa St. The company names are quite similar, yet the Los Angeles company does not use the Maru-sho / Marusho brand (which seems surprising) and does not make shoyu.

843. Mogi, Masatoshi. 1936. Miso jôzô ni kansuru saikin no kenkyû. II. [Studies on the microorganisms in the manufacture of "miso." II.]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 12(5):367-77. May. English-language summary in Bulletin of the Agricultural Chemical Society of Japan 12(5):54-55, bound at the front of Nippon Nogeikagaku Kaishi. [1 ref. Jap; eng]

• **Summary:** The soluble breakdown products of starch and protein in miso may be produced equally well by bacteria or by koji molds. Three experiments were made using the aerobic bacteria isolated from miso: (1) Diastatic and starch liquefying power. (2) Liquefying power of gelatine (all the bacteria liquefy gelatine). (3) Liquefying power of "Tofu" (The degrees of liquification are not always parallel to the liquefying power of gelatine). Address: Nôgakushi, Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

844. **Product Name:** Miso, and Koji.

Manufacturer's Name: Kushi Shoyu Miso, Koji Seizo-sho.

Manufacturer's Address: 8150 East Marginal Way, Seattle, Washington. Phone: GL 1241.

Date of Introduction: 1936. June.

New Product-Documentation: Hokubei Nenkan-The North American Times Year Book. 1936, p. 60. Mr. Tanejiro Kushi, and Mr. Toyosuke Kushi.

845. Sano, Kunio. 1936. Miso jôzô no eiyôgaku-teki kôsetsu. X. Miso jukusei-chû no shisuchin no shôchô [Nutritional studies on miso fermentation. X. Increase and decrease of cystin during miso ripening]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 14(6):499-505. June. [14 ref. Jap] Address: Osaka Teikoku Daigaku, Kôgaku-bu, Jozogaku Kyoshitsu, Takada Kenkyu-shitsu (Hokoku #49), Japan.

846. Iwamura, Iwao. 1936. Biochemical studies on "miso," fermented soy-bean paste. IV. On the effect of cystine upon the nutritive value of "miso-protein" when fed to albino rats as a supplement to rice. *Bulletin of the Agricultural Chemical Society of Japan* 12(7):78-88. July. (Chem. Abst. 30:7153). Bound in the front of Nippon Nogei Kagaku Kaishi (J. of the Agricultural Chemical Society of Japan). [16 ref. Eng]

• **Summary:** "The amount of cystine in 100 gm of fresh miso was as follows: Shiromiso 64.2, Yedomiso 45.5, Sendaimiso 50.9, Hatchomiso 93.4 mg." The content of cystine in various kinds of fresh "miso" is 0.064-0.10% and in polished rice 0.037-0.055%. The "miso" diet is slightly deficient in cystine for growth of rats. Address: Agricultural Chemical Lab., Tokyo Imperial Univ., Tokyo.

847. Ramsbottom, J. 1936. The uses of fungi. *British Assoc. for the Advancement of Science, Annual Report*. Sept. 9-16. p. 189-218. See p. 206-08, 212. 106th year.

• **Summary:** This was an address to Section K (Botany) of the British Association for the Advancement of Science at Blackpool, Sept. 10, 1936. Discusses: Koumiss (effervescent drink), Egyptian Leben, Arrack, Japanese koji, shoyu, tamari, and miso, fermented tofu.

"There is a wide range of oriental foods produced by fermentation with *Aspergillus*. Chinese curd, To-fu, is made from soy-bean milk fermented with mould and ripened in brine. The curd is cut into squares which soon become covered with fungus. They are then placed in brine for further ripening. The curd is canned as white or red squares in a salty liquid."

In Japan, four large industries are built on the use of *Aspergillus oryzae*. Their approximate total yearly output is as follows: Saké (rice wine) 812,000 kiloliters, shoyu (soy sauce) 902,000 kiloliters, miso (soy cheese) 1,690,000 kilograms, and shocho (distilled alcoholic liquor) [sic, shochu or shôchû, cheap spirits] 39,700 kiloliters. The annual value of all the fermentation industries is approximately £40,000,000.

"Molds of the genus *Penicillium* play a large part in the ripening of the Camembert-Brie, and the Roquefort-Gorgonzola-Stilton series of cheeses. Milk is first coagulated with rennet or dried calf-stomach linings." Also: Mycorrhiza, Takadiastase, production of glycerin and yeasts in Germany during World War I. Address: O.B.E., President of the Botany Section.

848. Russell, Lindsay. 1936. Beneficent soybean. *New York Times*. Dec. 6. Section 4. p. 8.

• **Summary:** Russell believes that "John Havens, a miller in Beaufort County, was the first to bring the soybean to North Carolina, and the experiments of August Heckscher resulted in bringing the soybean to the attention of the Midwest." Note 1. Russell (who is probably wrong) does not say when Havens first brought soybeans to North Carolina or from whom he obtained his soybeans. Note 2. The city of Washington is the capital of Beaufort County, in eastern North Carolina on the Pamlico River. The Havens Oil Co. in Washington, North Carolina, first crushed soybeans in 1916 (C.B. Williams, Dec. 1916; E.G. Funk, 1949).

Although the soybean originated in China, "it remained for Japan to vastly extend the use of the soy bean and introduce it to the world... In 1905 Japan turned the South Manchurian Railway into a Department of Agriculture and started a drive to develop the soy bean..." Also mentions tofu (also called "milk curd") and "mesu" (probably miso) "a six-month ferment and substitute for lactic acid milk." Address: Wilmington, North Carolina.

849. Iwamura, Iwao. 1936. Daizu ?? o hakkô shita miso no seikagaku kenkyû [Biochemical study on miso made with soybean cake (Abstract)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 31(10):85. [Jap]

• **Summary:** Abstracted from the *Bulletin of the Agricultural Chemical Society of Japan* 12(7):78-88 (1936).

850. Iwata, Hisaaki; Kumaya, Jiro. 1936. Tochi miso oyobi nara miso ni tsuite. Kyûko shokuhin no eiyô-gaku-teki kenkyû. VI. [Miso from the seeds of the horse chestnut and Japanese oak. Nutritional studies on famine-relief foods. VI.]. *Ryoshoku Kenkyu (J. of the Institute of Dietary Science)* No. 121. p. 459-67. [5 ref. Jap]

• **Summary:** The horse chestnut (also called buckeye or Chinese chestnut; *Aesculus hippocastanum*) has large glossy brown seeds that can be used to make miso, called Tochi Miso. The acorns of the Japanese oak (*Quercus glandulifera*) can be used to make Nara Miso. Address: 1. Nôgaku Hakase.

851. Miyata, K. 1936. [Pilot test of miso-tamari with special microorganisms]. *Aichi-ken Kogyo Shikenjo* 8:67-. [Jap]*

852. Shioiri, Eiji. 1936. [The enzymatic studies of miso, amylase of miso]. *Kanagawa Ko-Shi* 6:3-. [Jap]*

853. **Product Name:** Yamajyu Shiro Koji Miso.
Manufacturer's Name: Yamajyu Shoyu & Koji Miso Co.
Manufacturer's Address: 395 Buckle Lane, Honolulu, Oahu, Hawaii. Phone: 68772.
Date of Introduction: 1936.

New Product–Documentation: Directory of the City and County of Honolulu. 1938-39. p. 614. Yamaju Shoyu & Koji Miso Co. (Taro Higa). Soy & Miso Manufacturers. Wholesale and retail. 395 Buckle Lane. Tel. 68772. Note: Taro Higa had the Yamajifu Shoyu & Koji Miso Co. the previous year. Wm. Higa. 1980. History of Miso Companies in Hawaii; Shurtleff & Aoyagi. 1983. The Book of Miso. 2nd ed. p. 234. The company was purchased by George Higa (Bill Higa's father) from Mr. Fukuda; Oda. 1983. Hawaii Herald. Oct. 7. Letter from Takao Nihei. This was company was founded in 1936 and had this name at the time it was founded. It was later renamed Hawaiian Miso Shoyu Co.

854. Cheng, Shao-ching. 1936. Shanghai Restaurant Chinese cookery book. London: Published by the proprietors of The Shanghai Restaurant. 4 + 102 p. 19 cm.
 • **Summary:** The recipe for “Dow see jeung (Salted black bean paste)” states (p. 5): “Dow See (salted black beans). Small piece garlic.

“(a) Soak the salted black beans in warm water for 10 minutes. (b) Pound the salted black beans and the garlic together into a fine paste.”

Note: This is the earliest English-language document seen (Oct. 2008) that uses the term “Dow See” to refer to Chinese-style soy nuggets.

855. Gray, George Douglas. 1936. All about the soya bean: In agriculture, industry and commerce. London: John Bale, Sons & Danielsson Ltd. ix + 144 p. Introduction by James L. North. Late curator, Royal Botanic Gardens, Regent's Park, London. Index. 28 cm. [19 ref]

• **Summary:** A comprehensive, early work on the soybean. Gray was a Scotch physician. Contents: 1. Introducing the soya bean. 2. The soya bean plant and its cultivation. 3. The soya bean as food: Dietetics, immature green beans, mature dried beans, soya bean coffee, soya bean chocolate, soya bean sprouts, soya bean milk, soya bean flour (incl. Berczeller flour, Soyvita bread made by Messrs. Wm. Beattie, Ltd., Glasgow), bean curd [tofu], soy (also called soya bean sauce, Chinese bean sauce, or shoyu), miso, fermented bean curd (p. 66-67). 4. Soya bean oil. 5. Soya bean trade. 6. The soya bean in agriculture.

Addenda: Soya bean products in the USA. Dieting and recipes. Statistics. India. Bibliography.

In the chapter on “Soya bean oil” we read (p. 75): “In England, the bean oil trade is carried on by the following firms:—The British Oil and Cake Mills Ltd., the ordinary shares of which are held by Lever Bros., Ltd., so that they are a branch of Unilever, Ltd.

“The Hull Oil Manufacturing Co., Ltd., Hull, now merged in the foregoing concern.

“The Premier Oil Extracting Mills, Ltd., Hull.

“Messrs. Wray Sanderson & Co., Hull.

“The Medina Refinery Ltd., Deptford, London.

“Messrs. J. Bibby & Sons Ltd., Liverpool.

“The Erith Oil Works Ltd., Erith” [Kent].

The first addendum, titled “Soybean products exhibited by the American Soybean Association” (at Washington, DC, p. 120-24) lists the following companies and each of the soy products that they manufacture: American Lecithin Corp. (Atlanta, Georgia), Archer-Daniels-Midland Co. (Milwaukee, Wisconsin), Armstrong Paint and Varnish Works (Chicago, Illinois), Battle Creek [Food] Factory (Battle Creek, Michigan), The Blanton Co. (St. Louis, Missouri), Cereo Co. (Tappan, New York), The Davies-Young Soap Co. (Dayton, Ohio), Detroit Graphite Co. (Detroit, Michigan), Eastern Health Food Stores Association (Washington, DC), Funk Brothers Seed Company (Bloomington, Illinois), Harshaw Essential Foods, Inc. (Cleveland, Ohio), Keystone Macaroni Mfg. Co. (Lebanon, Pennsylvania), Kloss, Jethro (Takoma Park, Maryland: Fresh [soybean] milk. Pumpkin pie [soybean milk and soybean flour]. Soybean cheese. Soybean bread [20% soybean flour]. Soybean buns. Soybean sprouts. Soybean cake), Laucks, I.F., Inc. (Bloomington, Illinois—home office, Seattle, Washington), Madison Food Company (Madison, Tennessee; Vigorost, Cheese [Tofu], Soybeans canned with Tomato, Soybeans canned plain, Dixie Fruit Crackers), Mead Johnson and Co. (Evansville, Indiana; Makes Sobee [Infant Formula]), Oriental Show-You Co. (Columbia City, Indiana), Paintcraft Co. (Galesburg, Illinois), Prince Macaroni Mfg. Co. (Boston, Massachusetts), Purina Mills (St. Louis, Missouri; makes Cresol disinfectant, Purina turkey and growing fattening chow, Purina lay chow, Purina egg chowder, Purina breeder egg chowder, Purina fitting chow, Purina rabbit chow, Purina chick Growena chow, Purina 34% cow chow, Purina chowder, Purina bulky cow chow, Purina 24% cow chow, Purina pig and hog chow, Protena all mash starting and growing food), Shellabarger Grain Products Company (Decatur, Illinois), Soyex Company, Inc. (Nutley, New Jersey), Staley Sales Corporation (Decatur, Illinois), The Stamford Rubber Supply Company (Stamford, Connecticut), Dr. Roy Monier, President, Board of Managers, State Hospitals (Jefferson City, Missouri), United Drug Company (Boston, Massachusetts), Vi-tone Company (Hamilton, Canada), Woolsey Paint and Color Co., C.A. (Jersey City, New Jersey), Bureau of Chemistry and Soils, Department of Agriculture (Washington, D.C.). Page 120 adds: “The exhibit also contained some 200 soybean products, mostly foods, brought from the Orient by Mr. W.J. Morse, Senior Agronomist, Department of Agriculture, Washington, DC, U.S.A.” Note: Morse and P.H. Dorsett were in East Asia from 1929 to 1931, when they collected many samples of soybeans and soyfoods.

In the second addendum, recipes, the author notes that soy flour is widely used in diabetic diets. Two leading firms

who make soy flour in England and who also incorporate it in various products are: Soya Foods, Ltd., Rickmansworth, Herts, and Dietetic Foods Ltd. 124 Victoria St., London, S.W. 1. "The former specialize in Soyolk which is flour prepared on the principles laid down by Professor Berczeller; it is a mealy powder, fatty to the touch. The latter firm are the sole distributors in Great Britain of the well-known 'Heudebert' Dietetic Food products, a French concern which makes different kinds of diabetic breads." The following recipes are then given; * = Calls for Soyolk soy flour: Soybeans, southern style. Soybean salad. Roasted soybeans [like dry-roasted peanuts]. Soybean croquettes. Soybean soufflé. Stuffing for baked fish*. White sponge pudding*. Shortbread*. Madeira cake*. Soya soup à la Reine (uses Heudebert soya flour). Soya chocolate (with soya flour). Soya vegetable soup (with soya flour). Soya bean sprout salad.

Note: This is the earliest English-language document seen (Feb. 2000) that uses the term "soya bean sprouts" to refer to these sprouts. Address: M.D. (Scotch physician) England. Late medical officer to H.B.M. Legation, Peking, China. Lieut.-Colonel, Retired.

856. Institut International d'Agriculture (International Institute of Agriculture). 1936. *Le soja dans le monde* [The soybean in the world]. Rome, Italy: Imprimerie de la Chambre des Deputes, Charles Colombo. viii + 282 p. Bibliography, p. 276-82. No index. 25 cm. [90 ref. Fre] • **Summary:** A superb early work, containing extensive original information, looking at developments with soybeans and soyfoods country by country, worldwide. Contents. Preface (p. 1). A. Culture of soy (*soja*; p. 4): 1. Botanical description, selection, classification of the varieties. 2. Culture properly said. 3. Enemies and illnesses.

4. Culture in the various countries: 4a. The Americas (p. 38): Antigua, Argentina, Bermuda, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, USA (gives details on all varieties grown, and describes production, history, varieties, and cultural practices in North Carolina, Illinois, Indiana, Iowa, Maryland, Massachusetts, Mississippi, Missouri, New York, Ohio, West Virginia, Wisconsin, Conclusion), Guadeloupe, Guatemala, British Guiana, Dutch Guiana, British Honduras [Belize], Jamaica, Barbados, Martinique, Mexico, Montserrat, Peru, Puerto Rico, El Salvador, Trinidad and Tobago, Uruguay.

4b. Europe (p. 101): Germany, the Danubian countries, Austria, Spain, France, Great Britain, Hungary, Italy, Netherlands, Poland, Romania, Switzerland, Czechoslovakia, Turkey, USSR.

4c. Asia (p. 128): Ceylon, China and Manchuria, Cyprus, Federated States of Malaysia, British India (incl. Punjab, Bihar and Orissa, Burma, Berar, Madras Presidency, Bombay Presidency, Bengal (incl. Nepal, Bhutan, Sikkim, and the district of Darjeeling), Assam, North-West Frontier

Province, United Provinces), Netherlands Indies, Indochina (incl. Tonkin, Annam, Laos, Cambodia, and Cochinchine), Japan, Palestine, Siam.

4d. Africa (p. 146): French West Africa, Algeria, Belgian Congo, Cyrenaica, Egypt, Eritrea, Madagascar, Morocco, Mauritius (Ile Maurice), Reunion (Réunion), Rhodesia, Anglo-Egyptian Sudan, Tripolitania, Tunisia, Union of South Africa.

4e. Oceania (p. 153): Australia, Fiji Islands, Hawaii, New Caledonia, New Zealand, Philippines.

B. Utilization of soya (p. 158): 1. The soybean in human nutrition and in industry: Whole soybeans, chart of the uses of whole soybeans, use of soya in the green state (green vegetable soybeans), soy sauce (*dau-tuong* of the Annamites, or *toyo*, named shoyu by the Japanese, or *chou-yau* or *chiang yoo* by the Chinese), condiments and sauces based on soya in the Netherlands Indies (*tempe*, *ontjom*, *tempemori* and *tempe kedele* [various types of tempeh and onchom, p. 168-70]), *tao tjo* [Indonesian-style miso], *tao dji* [soy nuggets], *ketjap*, *ketiap benteng* [Indonesian-style soy sauce], soymilk (*le lait de soja*), yuba (*crème de lait de soja*), tofu (*le fromage de soja*) and fermented tofu (*des fromages fermentés*, made by Li Yu-ying near Paris), soymilk casein (*caséine du lait de soja*, for industrial use, including vegetable albumin, or galalithe [galalith]) [isolated soy protein], and artificial wool), soy lecithin (*lécithine de soja*), soy flour (*la farine de soja*, incl. soy bread, soy pastries, and soy cocoa).

2. Soy oil (p. 194): Food uses, industrial uses (including soaps, products resembling petroleum, paints, varnishes, linoleum, and artificial rubber), extraction, directory of U.S. manufacturers of materials and equipment for soybean processing, directory of U.S. and Canadian manufacturers of food products based on soya (*produits alimentaires à base de soja*, p. 205-06), directory of U.S. manufacturers of industrial soy products (p. 206-07).

3. Soybean in the feeding of domestic animals (p. 207): Forage, hay, silage, pasture, soybean seeds, the minerals in soybeans, soya as a feed for dairy cows, cattle, buffaloes, sheep, hogs, horses and mules, poultry.

4. Use of soya as fertilizer (p. 257). C. The trade of soya and of its by-products (p. 363): Production of soybeans in the principal countries, economic importance of soybean culture in the USA, soybean trade/commerce including tables of the major importers and exporters, and amounts traded annually in 1931-1934, price of soybeans, cost of production.

List by region and country of people and organizations that responded to a questionnaire sent by IIA (p. 273-76). Bibliography of main publications consulted, listed by region and country of publication.

Reunion (*Ile de la Réunion*): "The soybean (Le Soja) is only cultivated as an experimental crop, on a few square meters at the agronomic station" (p. 148).

Fiji (*Iles Fidji*): Soybean cultivation is not yet practiced in this colony; however soybean seeds are currently being imported in order to conduct a trial.

New Caledonia: In 1928 soybean cultivation was introduced to New Caledonia.

Note 1. This is the earliest document seen (Dec. 2007) concerning soybeans in Bhutan, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Israel, Jamaica, Madagascar, Morocco, New Caledonia, Palestine, Peru, or Réunion, or the cultivation of soybeans in Bhutan, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Israel, Jamaica, Madagascar, Mexico, the Middle East, Morocco, New Caledonia, Palestine, Peru, or Réunion. It is also the earliest document seen (Dec. 2007) concerning soybeans in connection with (but not yet in) Cyprus; it is stated that soybeans are not grown on the island of Cyprus. Soybean culture is not practiced in the Italian colonies of Eritrea (Erythrée, now part of Ethiopia) or Cyrenaica (Cyrénaïque, now part of Libya).

Note 2. This document contains the earliest date seen (June 2007) for soybeans in Bhutan, New Caledonia, or Réunion, or the cultivation of soybeans in New Caledonia (1928), or Bhutan or Réunion (1936) (One of two documents).

Note 3. This is the earliest French-language document seen (Jun. 2000) that mentions tempeh, which it calls “tempe” (p. 168). It notes that, in general, the indigenous people of the Netherlands Indies use soybeans mainly to make *tempe*, a product which, throughout central and eastern Java, takes the place reserved for *ontjom* in western Java. Tempeh is found in two forms: either in large flat cakes which are cut at the time of sale into small square morsels, or wrapped in folded banana leaves. A detailed description of the preparation of each of these two types of tempeh is given as well as another type of tempe, called *tempemori*, which is made with soybeans and coconut presscake.

Soybean culture is not known to be practiced in the following countries or colonies: Antigua, Barbados, British Honduras (renamed Belize in about 1975), Trinidad and Tobago. Address: Rome, Italy.

857. Read, Bernard E. 1936. Chinese medicinal plants from the “Pen ts’ao kang mu” of 1596. 3rd edition of a botanical, chemical and pharmacological reference list. Peking, China: Peking Natural History Bulletin. Sales Agent: The French Bookstore. xvi + 391 p. See p. 114-18.

• **Summary:** Contents: Introduction in Chinese. Introduction to the third edition (Shanghai 1935). Provincial abbreviations. Abbreviations for parts of plants. Bibliographical abbreviations (journals and books). Secondary references helpful to a study of Chinese materia medica. Comparative table of Western, Japanese, and Chinese dates (1868-1935). Table of classes, general, and

species for which references are listed. Index of Romanized Chinese names modified from Wade’s system. Index of common English names, with foreign names given in italics. Latin index.

References related to soybeans are subdivided as follows (p. 114-18, 256): Soybeans, black variety (var. *nigra*; the fresh hulls used in medicine are known as *Ta Tou P’i*). Soybean sprouts, black variety (Ta Tou Huang Chüan). Bean relish, black variety (Ta Tou Ch’ih). Bean ferment, black variety (Tou Huang; Natto in Japanese). Yellow soybean (*Glycine soja* S. et Z., var. *flava*; Huang Ta Tou). Soybean oil (Tou Yu). Soybean sauce, yellow variety (Chiang Yu; thick or thin). Soybean paste (Chiang). Bean curd, yellow variety (Tou Fu). White soybean (*Glycine soja*, S. et Z., var. *alba*). Soy sauce made with wheat flour (p. 256).

References for azuki beans (red mung bean, *P. mungo*, L. var. *subtrilobata*, Fr. et Sav. [HN. Br.]) are given on page 122. References for wheat gluten (Mien Chin) are given on page 256.

This book is largely a list of references relating to plants listed in the Pen Ta’ao Kang Mu. It is not a translation or summary of the latter work.

Note: This is the earliest English-language document seen that uses the term “the fresh hulls” to refer to soy bran. Address: PhD, Head of the Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai, China.

858. Rouest, Leon; Guerpel, Henry de. 1936. Le soja français et ses applications agricoles et industrielles [The French soybean: Its agricultural and industrial applications]. Chateauroux, France: G. Langlois. xxiii + 99 p. 28 cm. [42 ref. Fre]

• **Summary:** Contents: Preface, by L Brétignière (Prof. at Grignon, Member of the Academy of Agriculture). Preface to the first edition, by Louis Forest (1921). Introduction to this new edition: Soviet Russia and the soybean (*le Soja*; includes the story of Rouest’s stay in the Northern Caucasus, Russia, from 1930 to 1933), Germany and Poland take up the soya question, the canons [guns] of Germany versus the Manchurian soybean, a secret contract to provide the weapons of war, organization of a Polish bank in Manchuria, Germany cultivates soybeans in Romania and Bulgaria in preparation for the war, France and the cultivation of soybeans.

1. What is soja? 2. History of the propagation of soja: Introduction of the soybean into France and Europe, the soybean is cultivated in central Europe, in Austria, in 1875, in France the soybean is the object of numerous trials from 1876 to 1881, its cultivation worldwide, the study and acclimatization of soya become generalized.

3. Botanical characters of the soybean: And the varieties of soybeans. 4. Chinese varieties: The soybean in China, the production of soya in China in 1916 and 1917, production

of soya in the Far East during the year 1928, exportation of soya from the Far East to Europe.

5. Japanese varieties: The soybean in Japan, varieties of soya from Indochina and from other Asian countries. 6. The soybean in America: American varieties, cultivation of soybeans in Ohio, selection of soya using pure lines in Connecticut.

7. The soybean in Europe: Italy, Russia, France, French climatic zones for the cultivation of *Soja hispida*, the Atlantic zone, the continental zone, the Mediterranean zone and climate, can the soybean cultivated in all the French climates including those in the north, northeast, and northwest, speedy production of soybeans in view of agricultural production and of the creation of early varieties for the regions in north and northeast France.

8. Instruction for growing soja in France. 9. Soja in Manchuria. 10. Soja seeds. 11. Selection of soja. 12. Varieties of soja. 13. Different ways of planting soya seeds. 14. Soy yield. 15. Nitrogen fixation in soya seeds. 16. Tilling and preparing the earth. 17. Soja fodder. 18. Soja, striking and improving. 19. Harvesting soja grain. 20. Soja oil. 21. Soja oil-cake for animal feeding. 22. Vegetable milk, soja milk and industrial casein.

23. Soja in human food: Soy flour and its applications, soy bread with wheat, nutritional composition of soja compared to dry legumes, soy viewed as a dry legume to replace meat, comparative production of nutritive elements among the various legumes used for human food, comparative value in calories of the usual foods and of soja, preparation of soy soups and meals in compressed tubes, what varieties of soy can serve the special needs of human nutrition, Sojenta, potatoes stuffed with soy, force meat balls (*boulettes*) of rice and soy, bread of rice and soy, pudding of soy and rice, soy sprouts and their food value, fresh soy sprouts in a salad, soy sprouts with vegetables, soy preserves and confections, soy chocolate, soy coffee, soybeans conserved in containers, soy with smoked fish, soup with soy vegetable meat, soymilk soup, omelet with smoked soy vegetable ham, green soy sprouts, soy cake, soy force-meat fritters.

24. The utilization of soja in the Far East: Vegetable cheese (tofu), soy-based condiments, Japanese natto (2 types), Japanese miso, Chinese miso, soy sauce (*soyou* or *schoziou*), making soy sauce in Kwantung, China, making soy sauce in Japan, koji or molded rice.

25. The culture of soja in North Africa (Rouest has varieties that would grow and yield well in the French colonies of Tunisia, Algeria, and Morocco). 26. Opinions of some authors on soja. Conclusions. Bibliography on soja.

A small photo on the "Dedication" page shows Léon Rouest (born in Paris on 11 Nov. 1872).

Concerning soy in Russia (USSR) (p. 52-53): In Russia, the soybean has been known for quite a long time, specially in the Ukraine and Bessarabia, but it was never grown over

a large area, and was given a back seat (low priority) in agriculture until after the revolution of 1917. It was not until 1926-27 that cultural trials were conducted on farms in the state of Northern Caucasus (*d'Etat du Caucase du Nord*). In the regions of Rostov-on-Don (*Rostow-sur-Don; Rostov-na-Donu*), Eisk (near Krasnodar), Stavropol, Prim-Koumsk, Yessentuki / Essentuki in the Kuban and Kuban River area of the North Caucasus region of southern Russia, the yields were 11 to 16 quintals.

In 1927 there were 600 ha planted to soybeans, increasing to 17,000 in 1928, in the *kolkhoz* (collective) farms or the *sovkhoz* (state owned) farms.

In 1929-1930 and until 1932-1933 there were very laudable / praiseworthy efforts to propagate soybeans in favorable regions, especially in the North Caucasus, but the soils of this region, although they are very rich and well suited to soybeans are also very rich in bad weeds and the results obtained up to the present do not seem favorable. As I said earlier, the soybean is a technical plant of the intensive type which is well suited to the soil and climate of Russia, but is much less suited to the indolent character of peoples who are accustomed to cultivating only small areas. In spite of the remarkable efforts at mechanization, the peasants who submit to collectivization and who do not yet understand it very well, the cultivation of soybeans does not assume the importance hoped for. Address: France.

859. Sano, Kunio. 1936. Miso jôzô no eiyôgaku-teki kôsatsu. X. Miso jukusei-chû no shisuchin no shôchô [Nutritional observations on miso fermentation. X. Increase and decrease of cystin during ripening of miso (Abstract)]. *Nippon Nogekagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 12:A216. [1 ref. Jap]
 • **Summary:** Abstracted from *Jozogaku Zasshi* 14(6): (1936).

860. Tezuka, Kaneko. 1936. Japanese food. Tokyo: Maruzen Co. Ltd. 84 p. See p. 28. 20 Cm. Half-title: Tourist Library: 14. [Eng]

• **Summary:** The chapter titled "Common everyday food" (p. 22+) notes that the three breakfast dishes are boiled rice, *misoshiru* (bean-paste soup [miso soup]), and *kô-no-mono* (pickles). With them are served "shell-fish *tsukudani* (foods boiled down in soy [sauce]), *shiokonbu* (the laminaria boiled in brine and soy), *nori* (laver), *nimame* (boiled beans [soy]), various kinds of bean-paste [miso] dishes, pickled plums [umeboshi], etc." A brief description of how to make miso and miso soup is given (p. 24). Under "Dinner dishes" we read: The most simple of foods is bean-curd." Fresh raw fish, "cut into shining thin slices (*sashimi*) is served with fresh grated radish or horse radish, and eaten dipped in vinegar or soy."

The section titled "How Bean-curd is Made" (p. 28) states: "Tôfu (bean-curd) is made by soaking soy beans in

water, mashing them, straining the mass through cloth and solidifying with the addition of magnesium chloride. It is a very nutritive food. The mush left over after straining *tôfu* is called *u-no-hana* (deutzia flowers) [okara] and is used in cooking vegetables." A photo shows a "Vendor cutting bean-curd."

A photo (p. 64) shows a hall full of Buddhist priests dining at Soji-ji temple, Tsurumi, Japan. In Japan, March 24 and Sept. 24 are national holidays—Spring and Autumn Worship of the Imperial Ancestors. To worship all the Imperial Ancestors, the people hang out the Japanese flag and "to honor the spirits of their own ancestors, make *Inarizushi* (vinegar-spiced rice wrapped in fried bean-curd) and *botan-mochi* (boiled rice slightly kneaded and covered with [azuki] bean jam). They offer these to the spirits of the dead by placing them before the Buddhist altar in the home and sending them to the family temple and the homes of relatives."

The chapter titled "Japanese Cakes" notes that the two basic types are *higashi* (dried cake) and *namagashi* (undried cake). "*Namagashi* is made of [azuki] bean-jam for the most part. Bean-jam is just like a cream made of red beans and sugar. *Namagashi* is divided into *yôkan* and others." *Yôkan* is made of bean-jam gelled with agar (Japanese isinglass). A photo (p. 83) shows a bean-jam factory and show case of products.

Note 1. Editorial note signed: Board of Tourist Industry, Japanese Government Railways.

Note 2. This is the earliest English-language document seen (Oct. 2001) that uses the word "mush," or the term *u-no-hana*, or the term "deutzia flowers" to refer to okara.

Note 3. This is the earliest English-language document seen (March 2009) that uses the term "bean-paste" to refer to miso.

Note 4. This is the earliest English-language document seen (March 2006) that uses the term "bean jam" (or "bean-jam") to refer to sweet azuki bean paste [*azuki-an*].

Address: Prof., Japan.

861. Japanese American News Inc. / Nichi-Bei Shinbunsha. 1937. Nichibei jûshoroku [The Japanese American directory. No 33]. San Francisco, California: Nichi-Bei Shinbunsha. 585 p. Jan. 1. Index of cities. 23 cm. [Eng; Jap] Address: Ellis Street, San Francisco, California.

862. **Product Name:** Maru-sho brand Shiro-miso, Koji.

Manufacturer's Name: Tsuruda Company (Tsuruda Goshi-gaisha).

Manufacturer's Address: 1535 Laguna St., San Francisco, California. Phone: WE 6800.

Date of Introduction: 1937. January.

New Product–Documentation: The Japanese American Directory. 1937. p. 8 (directory; Importers of groceries. "Tsuruda Co.") and add (½-page; top 1/3 of ad is in English:

"Tsuruda Company. Importers, manufacturer & exporters. 1535 Laguna St., San Francisco"). Also Tsuruta Goshi Gaisha in San Jose. Miso & Shoyu manufacturer. 472 Josefa St.; Ballard 5539. Note: This company appeared in San Jose in 1936. The ad is divided vertically into halves; one for San Francisco, the other for San Jose. The company spells its name "Tsuruta" in the romanized directory but "Tsuruda" in English part of its ad. Same in 1938. p. 6 (directory).

863. *Los Angeles Times*. 1937. Japan: Japanese make ritual of dining—Harmony of color stressed in dainty servings. April 21. p. B16.

864. *Contemporary Manchuria*. 1937. Bean oil industry in Manchuria. 1(1):15-42. April.

• **Summary:** Contents: Methods of oil extraction: Wedge system (round cake), screw system (round cake), hydraulic system (round cake or plate cake; the plate cake system, which is the most advanced method of pressure extraction, is used only by Nisshin Oil Mills at Dairen and Anglo-Chinese Trading Company {Kabalkin Oil Mills} at Harbin), benzine-benzol system, alcohol system (recently developed by Central Laboratory of the SMRC and now utilized by the Manchuria Soya Bean Industry Company at Dairen). Characteristics of the various extraction methods (merits and demerits): The hydraulic system is gradually displacing the screw system, the alcohol extraction system is the best and it produces priceless lecithin as a by-product, most of the soybean oil mills in Europe use the benzine system. Varieties of bean cake: Round cake (6 types), plate cake, flake cake [soybean meal], refined bean cake (Soyalex; extracted with pure alcohol. Its use as a raw material for shoyu, miso, candy, or noodles adds a high degree of nutritive value). Utilization of soya beans (a chart on page 27 shows many uses): Uses of soy beans, uses of bean cake (as fertilizer, for manufacturing shoyu, for making bean flour {*kinako*}, as raw material for Ajinomoto, in making liquid paint {Solite as invented by Mr. Yosei Suzuki and manufactured by the Solite Company at Dairen}, as a raw material for various protein products {including sizing for paper}), uses of bean oil (food oil, lard substitute, butter substitute or margarine, paint diluent, soap, glycerine and fatty acid, waterproof material {Tantalus}, petroleum substitute, gum substitute and other), lecithin. Factory construction expenses.

In the Far East, the solvent extraction system is used by only 3 firms: (1) The Honen [Hohnen] Oil Manufacturing Company with mills at Dairen (capacity 200 tons/day), Naruo (200 tons), and Shimizu (610 tons); (2) the Nikka Oil Manufacturing Company with its mills at Wakamatsu (200 tons); and (3) the Manchuria Soya Bean Industry Company with its mills at Dairen (100 tons). The total capacity of these 3 companies is 1,310 tons/day, of which Honen has

77%. Their combined annual production of Flake Cake [soybean meal] is about 270,000 tons, which is negligible in comparison with the total amount of round-cake production in Manchuria.

The latest method of extracting oil from soya beans is by the use of benzine or benzol as chemical solvents. The Honen Oil Mills at Dairen is the only one which uses this method at present.

Candies and noodles are already being manufactured from soybean flour. An experimental station of the Department of Agriculture and Commerce has experimented with the use of Flake Cake in the manufacture of shoyu and obtained encouraging results in terms of cost and quality.

865. South Manchuria Railway Co. 1937. Bean oil industry in Manchuria. South Manchuria Railway Co., English Section. 37 p. April. 29 cm. See also original 1936 edition with same author and title. [Eng]

• **Summary:** Contents: I. Methods of bean oil extraction: Wedge system (round cake; the most primitive and small scale but still extensively used in remote interior districts), screw system (round cake; the most widely used method in Manchuria), hydraulic system (round or plate; the latter allows application of much greater pressure. Used only by the Nisshin Oil Mills at Dairen [capacity 150 tons/day of soybeans] and the Anglo-Chinese Trading Co. [Kabalkin Oil Mills] at Harbin, capacity 220 tons/day), benzine-benzol system (only used by Honen [Hohnen] Oil Mills at Dairen), alcohol system (a new process discovered by the Central Laboratory of the South Manchuria Railway Co. and now used by the Manchuria Soya Bean Industry Company at Dairen).

II. Characteristics of various extraction methods: 1. Comparison of wedge, screw, and hydraulic systems. 2. Comparison of round cake (hydraulic), plate cake, benzine extraction, and alcohol extraction systems: Constituent elements of bean cakes, merits and demerits of each type. Alcohol is considered the best. It gives the best quality oil and meal, and is the only system that “produces priceless lecithin as a by-product. The only demerit of this system at present is the high cost of production as compared with other systems. This is due to the large amount of capital required in the installation of machinery and plant and the necessity of using expensive alcohol as solvent.” p. 5.

III. Varieties of bean cake. 1. Round cake: This is the original Chinese bean cake, which comes in several specialized forms: Fodder bean cake used as feed, “Pien Ping” (untrimmed cake), “Kuang Ping” (junk wharf cake), dried round cake (patented by the Dairen Soya Bean Industry Research Inst.), crushed cake, miscellaneous cakes. 2. Plate cake (rectangular). 3. Flake cake (from solvent extraction). In East Asia only 3 companies and 5 mills use solvent extraction. Daily capacity of these mills is as follows: Honen [Hohnen] Oil Manufacturing Co.–Dairen

200 tons, Naruo 200 tons, Shimizu 610 tons. Nikka Oil Manufacturing Co.–Wakamatsu 200 tons. Manchuria Soya Bean Industry Co.–Dairen 100 tons. The total annual production of flake cake is about 270,000 tons and is negligible in comparison with round cake production. 4. Refined bean cake (“Soyalex”). Resulting from alcohol extraction, it is considered to be the best quality for use in foods (shoyu, miso, candy, noodles) or feeds.

IV. Utilization of soya beans. 1. Uses of soya beans (a chart shows many uses): Foodstuff, animal feed, refined oil, lecithin. 2. Uses of bean cake: Directly as fertilizer (it contains nitrogen, phosphoric acid, and potassium, but is being replaced by ammonia sulphate), and as or animal feed. Processed for making foods such as shoyu, miso, bean flour (“kinako”). To make Ajinomoto, Solite liquid paint, and various protein products such as paper sizing, celluloid substitute, or medicine. 3. Uses of bean oil: “The bean oil was used originally by the Chinese people for cooking, lighting, and lubricating (carts) purposes and the demand was limited within China. In less than 30 years, however, it began to occupy an important place in the world market.” The chief reasons are its relatively low cost and many potential uses for foods (lard substitute, butter substitute) or industrial products such as soap or paint, glycerine or fatty acids, waterproof material, petroleum substitute, gum substitute, etc. 4. Lecithin: Used for making leather, margarine, or restoratives. The alcohol extraction process produces lecithin, vitamins, and saponins as by-products. The yolk of an egg contains 7-10% lecithin. “The soyalex lecithin, obtained through the alcohol extraction method, is the most excellent lecithin produced through applied chemistry. It contains 3 to 10 times more lecithin than egg yolk and is more economical for general use.

V. Factory construction expenses: Machinery, installation, and building for a plant that can process 100 tons of soya beans per 24 hours. Screw system round cake, 102,880 yen. Hydraulic system round cake, 111,856 yen. Alcohol or benzine extraction, 719,365 yen.

Tables of statistics: Exports of soya beans, bean cake, and bean oil from 1926-1935: A. From individual ports (Dairen [by far the largest], Yingkou, Antung, Vladivostok, total). B. To various countries (Japan, Europe, China, USA, others, total). Value of exports in 1935 (M. yen; p. 36): Soya beans 130,053,055, beancakes 51,370,086, bean oil 20,132,208. Soya bean crop area and production in Manchoukuo, 1924-1935 based on statistics compiled by the Manchoukuo Dept. of Industry.

On the last page is written, Dr. Roy H. Akagi, S.M.R. Co., as if he were author.

Note: This is the earliest English-language document seen (March 2002) that uses the word “beancakes” to refer to ground, defatted soybeans.

866. Matsuyama, Masanori. 1937. Hatcho miso no shiro hanten ni tsuite [The white spots on Hatcho miso]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 15(6):453. [Jap]

867. League of Nations Health Organization–Bandoeng Conference. 1937. Report of the Intergovernmental Conference of Far-Eastern Countries on Rural Hygiene. *International Conference of Far Eastern Countries on Rural Hygiene (Preparatory Papers)* Vol. 3, page 74-76. Held 3-13 Aug. 1937 at Bandoeng, Java. Published 8 Sept. 1937. Official No. C.H. 1235.

• **Summary:** In Chapter 4, titled “Nutrition,” section I discusses “Composition of food and methods of its preparation.” The soya bean and its uses in French Indo-China (today’s Vietnam) are discussed on pages 75-76. “Apart from rice and maize, one of the most important food crops in that Far East is the soya bean (*Glycine hispida*). This bean is rich in proteins and fatty matter, but has a very low carbohydrate content. Eaten in its natural state as a vegetable, or better still, in the form of a variety of appetising preparations in which the casein is partly disintegrated, the soya bean makes good the deficiency of fatty and nitrogenous matter in the native diet, which consists almost entirely of the rice carbohydrates.

“Its chief derivatives are nuoc-dâu, or soya milk; dâu-phu, a fresh soya cheese obtained by precipitating the casein of soya milk; dâu-tuong, or soya sauce, which is often used instead of nuoc-mam, especially in Tongking; and dâu-phu-chuc, or soya cream [yuba].

“Soya milk is a yellowish-white liquid with a slight smell of burnt bread and a peculiar flavor greatly appreciated by the Annamites. It is prepared by peeling the beans, pounding them in water, straining, and boiling up the resulting liquid.

“Soya cheese [tofu] appears in trade in the form of faintly yellowish-white rectangular cakes, weighing about 150 grammes each. Ten kg. of soya beans will produce 100 liters of milk, which in turn yield 300 cakes, or 45 kg., of cheese. This very cheap product, of which several thousand kilogrammes are sold every day in the Hanoi market alone, is eaten either raw with salad, or stewed with vegetables, or fried in oil.

“Soya sauce, or dâu-tuong, is a preparation obtained by fermenting a mixture of glutinous rice [*Oryzae sativa glutinosa*, called ‘nêp’ by the Annamites] and roasted soya beans. It is a condiment both salty and sweet, which frequently replaces nuoc-mam, a relatively dear food, especially in regions distant from the sea.

“Dâu-tuong is commonly found in commerce in the form of a heterogeneous mixture, consisting of a liquid (nuoc-tuong) in which floats a somewhat coarse paste called tuong-cai, made of incompletely powdered soya beans.

“Dâu-phu-chuc is prepared by drying the skin that forms on the surface of soya milk after prolonged heating. It is

sold in shiny, pale yellow, crinkly sheets, and smells like cow’s milk. It is a food rich in proteins and fatty matter, and is consumed by the Annamites in small pieces, either in soup, or in pork, beef, or chicken stew.”

Note: This is the earliest English-language document seen that uses the term “Roasted soya beans” to refer to soynuts. Address: Geneva, Switzerland.

868. **Product Name:** Miso, and Koji.

Manufacturer’s Name: KINA? (Asauki?) Miso & Koji.

Manufacturer’s Address: Box 207, Pakala, Waimea, Kauai, Hawaii.

Date of Introduction: 1937.

New Product–Documentation: Hawaiian Japanese Annual & Directory. 1936-37, Kauai p. 40. Asauki Kina? (from Okinawa prefecture), miso and koji maker, Box 207, Pakala, Waimea, Kauai, Hawaiian Islands.

869. **Product Name:** Miso, and Koji.

Manufacturer’s Name: Mafuji? / Kanto? / Chikafuji? (Toyosaburo) Miso & Koji.

Manufacturer’s Address: Box 43, Hanapepe, Kauai, Hawaii.

Date of Introduction: 1937.

New Product–Documentation: Hawaiian Japanese Annual & Directory. 1936-37, Kauai p. 32 Toyosaburô Mafuji? (or Kanto? Chikafuji?) (from Niigata prefecture), miso and koji maker, Box 43, Hanapepe, Kauai, Hawaiian Islands.

870. **Product Name:** Koji, and Miso.

Manufacturer’s Name: Mafuji? / Kanto? / Chikafuji? (Yoshikichi) Koji & Miso.

Manufacturer’s Address: Box 122, Kapaa, Kauai, Hawaii.

Date of Introduction: 1937.

New Product–Documentation: Hawaiian Japanese Annual & Directory. 1936-37, Kauai p. 8. Yoshikichi Mafuji? (or Kanto? Chikafuji?) (from Niigata prefecture), koji and miso maker, Box 122, Kapaa, Kauai, Hawaiian Islands.

871. **Product Name:** Koji.

Manufacturer’s Name: Takei Koji, Miso Seizo-gyo (Takei Koji & Miso Manufacturing Co.).

Manufacturer’s Address: Box 237, Kahului, Maui, Hawaiian Islands.

Date of Introduction: 1937.

New Product–Documentation: Hawaiian Japanese Annual & Directory. 1936-37, p. Maui 25. Shûji Takei (from Yamaguchi prefecture), Takei Koji, Miso Seizô-gyo [Takei Koji & Miso Manufacturing Co.], Box 237, Kahului, Maui. Note: They now make and sell koji and have a P.O. Box.

872. **Product Name:** Tofu.

Manufacturer’s Name: Ushijima (Takehachi) Tofu.

Manufacturer's Address: Ponahawai St., Box 1247, Hilo, Island of Hawaii.

Date of Introduction: 1937.

New Product–Documentation: Hawaiian Japanese Annual & Directory. 1936-37, Island of Hawaii p. 32. Takehachi Ushijima (from Kumamoto prefecture), tofu maker, Ponahawai St., Box 1247, Hilo, Island of Hawaii.

873. Bordas, Jean. 1937. *Le soja et son rôle alimentaire* [The soybean and its role as a food]. Paris: Hermann & Cie. 36 p. *Actualites Scientifiques et Industrielles*, No. 557. 36 p. [24 ref. Fre]

• **Summary:** Contents: Introduction. 1. Botanical characteristics and principal varieties. 2. Chemical composition of soya. 3. Alimentary physiology and the nutritional uses of soya: Seeds (energy value, protein, vitamins, use as a milk substitute), forage. 4. Different uses of soya: Agricultural, industrial (oil, casein, sterol), as human food (sprouts, tofu, fermented tofu, shoyu, miso, tuong of Annam, roasted soy coffee, soy bread for diabetics, the future of soya). 5. The economics of soya: Production, imports, exports. Conclusions. Address: Director, Station d'Agronomie et de Pathologie vegetale d'Avignon, France.

874. Kale, F.S. 1937. *Soya bean: Its value in dietetics, cultivation and uses. With 300 recipes.* 2nd ed. Baroda State, India: Baroda State Press. xxx + 375 p. Illust. (35 leaves of plates, described in a separate record). Index. 22 cm. 2nd ed. 1937. [66 ref]

• **Summary:** Contents: 1. Deficiencies in the Indian diet and soya bean as a means to rectify them. 2. History of the origin and growth of soya bean: Derivation of the word soya bean, origin of soya bean, literature, primitive man and soya bean, name of the plant, home of soya bean and its expansion, varieties of soya bean, the culture of soya bean is very remote (It "has been the chief article of diet in China for over 7,000 years."), reference of soya bean in old Chinese records, how and when soya bean became known to Europeans, soya bean in England (from 1890; J.L. North and Henry Ford), soya bean in France (from 1739), soya bean in Italy, soya bean in other countries of Europe, soya bean in United States of America, India and soya bean.

3. The use of soya bean: Importance of soya bean, dietetic importance, industrial importance, agricultural importance (Russia, Mussolini in Italy), medical importance, soya bean is alkalising in its effect ("Soya bean milk as well as its flour is used in foods for invalids and infants, like Nestle's food"), longevity and soya bean.

4. World trade in soya bean: Imports to Europe, production of soya bean in Manchuria (58% in North Manchuria), exports from Manchuria, oil and cake industry in Manchuria, soya bean production in Japan, in America, in Africa, in Australia, in Europe, in Java, in India, in other British possessions, estimate of world production of the

soya bean, the desirability of the expansion of soya bean cultivation, imports and exports of soybeans, soya bean oil, and soya cake—1913-1927: Denmark, Holland, United States, Great Britain, Japan, France, Russia, China, Germany, Norway, Korea. Source: International Institute of Agriculture, Bureau of Statistics, 1921, p. 420-21. A table (p. 38) shows statistics for world production of soybeans "as estimated by the leading firm of London soya bean dealers" for various years from 1923 to 1929. This includes individual statistics each year for China [incl. Manchuria], Japan, and USA. The world totals in tons are: 3,095,000 (for 1923-25). 3,397,000 (for 1926). 4,325,000 (for 1927). 6,000,000 (for 1928), and 6,570,000 (for 1929; incl. China 5,250,000; Japan 550,000; USA 250,000; Java & Dutch East Indies 120,000; Other Asiatic countries & Africa 400,000).

5. Botany of the soya bean plant. 6. Classification of soya bean. 7. Cultivation of soya bean. 8. Diseases and pests of soya bean. 9. Cultivation of soya bean in India. 10. The constituents of soya bean. 11. Soya bean milk. 12. Soya bean flour. 13. Industrial uses of soya bean. 14. Enriching soil by addition of nitrogen and use of soya bean as fodder. 15. Food requirement of the human body. 16. European and American soya bean recipes. 17. Diabetic dishes, Mahatma Gandhi's experiments at Magan Wadi and opinion of scientists on soya bean. 18. Chinese and Japanese soya bean dishes: Toffu [tofu] or soya bean curd: Digestibility, utilization, toffu khan, toffu nao, tze toffu (fried bean curd), chien chang toffu (thousand folds), hsiang khan, kori toffu (frozen toffu), preservation of toffu. Natto. Tokio natto and Kyoto natto etc. Hamanan natto [Hamanatto]. Yuba. Misso [miso]. Soya sauce. Soya bean confectionery. Roasted beans (Chinese).

19. Indian soya bean dishes: Hindustani dishes, Moglai dishes, Gujarati dishes, Maharashtrian dishes, Bengali dishes, Goa dishes, Tanjore dishes. Appendixes. 1. Acreage of soya bean in Manchuria during the last 5 years. 2. Total figures of export during last 5 years. 3. Bibliography. 4. Some opinions about the first edition of this book.

The preface begins: "This little book is written in response to innumerable inquiries I have had from time to time after the inauguration of the plantation ceremony of Soya Beans at the State Agricultural Experimental Station by H.H. the Maharaja Gaekwar of Baroda in November 1933.

"A few months after this a food exhibition was held in Baroda where many Soya Bean dishes—Indian, European and Chinese—were exhibited. The leading papers and journals all over the country spoke in very glowing terms about the Soya Bean dishes that were exhibited... Later on at the request of Messrs. Mitsui Bussan Kaisha Ltd., a leading Japanese Firm in Bombay, a Soya Bean Exhibition and Restaurant were run in the Japanese village at the H.O.H. fete. So keen was the interest and enthusiasm

evinced by the cosmopolitan public of Bombay that seats in the restaurant had to be reserved in advance. The presence of H.E. the Governor and Lady Brabourne and many Indian princes was an additional evidence of the ever growing popularity of the tasty Soya Bean dishes served there.

“At the closing of the H.O.H. fete many prominent people of Bombay requested me to continue the restaurant at a convenient place in the city, and asked me to open soya-bean milk centres for the children of the poor who could not afford to buy cow’s milk. Many were ready to finance any scheme that I would propose, but unfortunately my time was not my own as I had to attend to my duties in the State and could not take advantage of their generous offer.

“The Departments of Agriculture of the various provinces of India as well as many Indian States asked me to supply them with literature regarding the cultivation and the uses of this most useful bean. The Department of Commerce and Industry of the Government of Bombay inquired if I could furnish them with information about the machinery for the extraction of Soya-bean milk. Letters of inquiries from private individuals kept pouring in daily from all parts of India. All this has induced me to undertake the preparation and the publication of this book...

“From the number of experiments carried on in the Baroda territories and outside it, I feel sure that the Indian soil is most suitable for the cultivation of soya bean...

“The leading thought of the day in India is, ‘Village uplift,’ and ‘Rural reconstruction.’

“Baroda, 7th January 1936, F.S.K.

“Preface to the Second Edition: I feel grateful to the public for having given such a hearty reception to the first edition of my book. It is running into a second edition within a year...

“Now, Soya Bean Bakeries and Restaurants have been started in the city of Bombay and in many other towns in India, and Soya Bean products are exhibited in almost all the exhibitions...

“I feel highly thankful to His Highness the Maharaja of Baroda who gave me an opportunity last year of visiting Russia, where I have seen that seven to ten per cent. of Soya Bean flour was being added to the wheat flour in order to enhance the nutritive value of the bread. The Soya Research Institute at Moscow is making researches into the nutritive, industrial and economical values of Soya Bean. I have seen there the actual working of the Soya-bean milk extracting plant. They make casein out of Soya-bean milk. Soya-bean cream is sold in the market.

“I visited the dietetic clinics in England, France, Germany, Austria and other European countries, where doctors prescribe Soya Bean bread for diabetic patients. In Russia, rickets and consumption are treated by Soyolk extracted out of Soya Bean...

“France is growing Soya Bean on còlt de jura [sic, Côte d’Azur, on the Mediterranean?]. In England, through the

efforts of Mr. J.L. North, Soya Bean is realised as a field crop for the last two years.

“Paris, 3rd April 1937 (p. ix).” Address: Food Survey Officer, Baroda State, India.

875. Matsuyama, Masanori. 1937. Hatchô miso no shiro hanten ni tsuite [The white spots on Hatcho miso (Abstract)]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 13:A159. [1 ref. Jap]

• **Summary:** Abstracted from *Jozogaku Zasshi* 15:453 (1937).

876. Woertge, Karl Heinz. 1937. Entwicklung und weltwirtschaftliche Bedeutung der Sojabohnenerzeugung und -verarbeitung [Development and international economic significance of soybean production and processing]. Thesis, Friedrich Alexander University, Erlangen, Coburg, Germany. 119 p. 28 cm. [112 ref. Ger]

• **Summary:** Contents: Foreword. Part I: History and culture of the soybean. 1. History, natural requirements and technology of soybean production; chemical composition of the soybean. 2. Occurrence of the soybean and methods of production in various countries: Asia (Manchuria and China, Japan, Korea, Formosa, Dutch East Indies, other Asian countries incl. British India, Cochin China, Ceylon), America, Europe (Southeast Europe, Austria, USSR, France, Italy, England, Poland, Switzerland, Czechoslovakia, Germany), Africa and Australia.

Part II. Scale and global economic significance of soybean production in the main producing areas. 1. General overview of world soybean production: Production for seeds, for fodders. 2. Scale of soybean production in the main producing areas: Asia (Manchuria, Japan, Korea, Formosa, Dutch East Indies [Java and Madura/Madoera]), America, Europe (Southeast Europe, USSR).

Part III. Development and global economic significance of soybean processing. 1. Soybean processing possibilities: A. Processing soybeans to make foods: Asia (general, methods used in China and Japan to make vegetable-type soybeans and salads, koji, soymilk, shoyu [soy sauce], miso, natto, tofu, methods used in the Dutch East Indies), Europe (general overview, preparation of soybean meal, soymilk, coffee- and chocolate substitutes). B. The soybean as an oilseed: General, methods of obtaining the oil (in Asia, Europe, USA), use of soy oil (as human food, other). C. Obtaining lecithin from the soybean. D. Use of soybean press-cake for livestock feed. E. Use of the soybean meal for fertilizer. 2. World trade in soybeans, soy oil and soybean cake/meal (*Sojakuchen/Sojaschrot*): World trade in soybeans (Manchuria, Asia, Europe, USA), world trade in soy oil, world trade in soybean meal.

Closing remarks: The state of the world soybean market with special consideration for the current German

conditions. Appendixes and tables. Address: Nuereberg, Germany.

877. Yamaguchi, H.S.K.; Sakai, Atsuharu. 1937. Miso or bean-paste (Document part). In: H.S.K. Yamaguchi. 1937. *We Japanese*. Yokohama, Japan: Yamagata Press. 592 p. See p. 269-70.

• **Summary:** “It is generally believed in Japan that miso or bean-paste is responsible in a great measure for the generally sound physical health of the Japanese. It is indispensable to Japanese cuisine... What bread and butter is to a foreigner, boiled rice and bean-paste soup [miso soup] are to the Japanese...”

“The word ‘miso’ is of obscure derivation, but it is usually taken to mean ‘immature bean-soy.’ People often attribute it to the invention of Priest Kanshin, a Chinese Buddhist, who was naturalised in Japan during the Nara days (710-784). Priest Ingen (1591-1673), who introduced the Wobaku [Obaku] sect of Buddhism to Japan [and erected the Manpuku-ji temple at Obaku in 1661], and after whom the haricot beans are named ‘ingen,’ was such a great admirer of bean-paste that, it is said, he took its soup every day instead of a certain Chinese medicine that he had used many years...”

“The longer the paste is kept, it is believed, the better it tastes. In the rural districts, every farmer makes bean-paste for his own use, but in the urban districts it is supplied by the maker, and according to a report issued by the Government, Japan manufactured hundreds of million kilograms, valued at tens of million yen every year. A table gives the nutritional composition of Hatcho miso, Sendai miso, and Inaka miso. Other types of miso on the market are Aka (red) miso, Edo miso, and Shiro (white) miso.

“A few sayings about miso: Miso wo tsukeru = to put miso on (to make a mess of it). Temae miso = one’s own miso [tastes best] (all geese are swans). Miso no Miso kusaki wa jo-miso ni arazu = Miso savouring of miso is no good miso.”

Illustrations show: (1) Five men making miso in a traditional commercial shop. (2) A maid kneeling and preparing miso soup in a suribachi mortar with a long wooden pestle. Address: Manager, Fujiya Hotel, Miyanoshita, Japan.

878. Japanese American News Inc. / Nichi-Bei Shinbunsha. 1938. Nichibei jūshoroku [The Japanese American directory. No 34]. San Francisco, California: Nichi-Bei Shinbunsha. 671 p. Jan. 1. Index of cities. 23 cm. [Eng; Jap] Address: Ellis Street, San Francisco, California.

879. Mogi, Masatoshi. 1938. Miso jōzō ni kansuru kōbo no kenkyū [Studies on the yeasts of miso fermentation]. *Nippon Nogekagaku Kaishi (J. of the Agricultural*

Chemical Society of Japan) 14(8):951-88. Aug.; 14(9):1175-1207. Sept. [34 ref. Jap]

• **Summary:** Contents: I. Materials for experiments. II. Morphological characteristics. III. Physiological characteristics. Address: Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

880. Mogi, Masatoshi. 1938. Miso jōzō ni kansuru kōbo no kenkyū. III. Seirigaku-teki seishitsu [Studies on the yeasts of miso fermentation. III. Physiological characteristics]. *Nippon Nogekagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 14(9):1175-1207. Sept. [Jap] Address: Nōgaku-shi, Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

881. Mogi, Masatoshi. 1938. Miso jōzō ni kansuru kōbo no kenkyū (kan). IV. Bunri seru kōbo no bunrui narabini ruien oyobi hyōchō [Studies on the yeasts of miso fermentation (conclusion). IV. Classification, relation, and diagnosis of isolated yeasts]. *Nippon Nogekagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 14(10):1297-1324. Oct. [34 ref. Jap]

Address: Noda Shoyu K.K. Shikenjo, Nōgaku-shi (Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan).

882. Schroeder, Franz. 1938. Die Sojabohne, ihre wirtschaftliche Bedeutung und ihre Verwertung fuer die menschliche Ernaehrung [The soybean, its economic significance and its use as human food]. *Ernaehrung (Die)* 3(9):245-57. Sept.; 3(10):281-93. Oct. [61 ref. Ger]

• **Summary:** Adaptations of soybeans to Western food habits are discussed in detail. Page 89 mentions efforts to commercialize and popularize the use of soy flour (*Sojamehl*), for example the little *Edelsoja Cookbook* from the New Edelsoja Co. in Berlin (*das kleine Edelsoja-Kochbuch der Neuen Edelsoja-Gesellschaft in Berlin*) and the *Edelsoja Cookbook* from the Edel Soja Workshop in Lübeck (*das Edelsoja-Kochbuch des Edel-Soja-Praktikums in Lübeck*). Address: Oberregierungsrat und Mitglied des Reichsgesundheitsamts i. R., Wilhelmshoher Strasse 3, Berlin-Friedenau, Germany.

883. Dubs, Homer H. ed. and trans. 1938-1955. The history of the former Han dynasty by Pan Ku: A critical translation with annotations. 3 vols. Baltimore, Maryland: Waverly Press, Inc. Vol. 1 (1938), 339 p. Vol. 2 (1944), 426 p. Vol. 3 (1955), 563 p. [5 ref]*

• **Summary:** Translated with the collaboration of Jen T’ai and P’an Lo-chi. Pan Ku lived 32-92 A.D. Dubs was born in 1892. Address: Vol. 1. Acting Prof. of Philosophy, Duke Univ.; Vol. 3:1. Prof. of Chinese, Oxford Univ.

884. Fukai, Tōshi; Inamori, S. 1938. Shōyu oyobi miso no chakushoku ni tsuite. I. Shōyu saikin to shikiso seisei [On coloring of shoyu and miso. I. Bacteria in shoyu and pigment formation]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 127. p. 91-114. [14 ref. Jap]

• **Summary:** Includes a discussion of *Bacillus melanicus* soya.

885. Fukai, Tōshi; Inamori, S. 1938. Miso onjō shiken [Brewing trial of miso by a system of warming]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 127. p. 215-223. [Jap]

886. Fukai, Tōshi. 1938. Kaon sokujō miso no moromi keika (Toku ni enryō oyobi suiryo o henka shita baai) [The progress of miso moromi with heated, accelerated fermentation (Especially with changes in the salt and moisture contents)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 33(11):1214-17. [Jap]

887. Matsumoto, K. 1938. Bareisho kin ōyō no miso seizō ni tsuite (Miso to bisei-butsu IV.). Furoku bunkenshu [Application of potato bacteria to miso manufacture (Miso and microorganisms IV.)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 33(8):916-21. [Jap]

888. Matsumoto, K. 1938. Miso to bisei-butsu [Miso and microorganisms. II]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 33:692-96. [Jap]

• **Summary:** Discusses the uses of yeasts, lactic acid bacteria, and heat-resistant lactic acid bacteria. Address: Japan.

889. Matsumoto, K. 1938. Miso to bisei-butsu [Miso and microorganisms. III]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 33:830-33. [Jap]
Address: Japan.

890. Mogi, Masatoshi. 1938. Miso jōzō ni kansuru kōbo no kenkyū [Studies on the yeasts in miso fermentation (Abstract)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 33(10):1186. [Jap]
Address: Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

891. **Product Name:** [Korean Soybean Jang / Miso {Tehn Jung Miso, Ten-Gan}].

Foreign Name: Ten Gan.

Manufacturer's Name: Park's Brand Products.

Manufacturer's Address: Vineyard Blvd., Kalihi Valley, Oahu, Hawaii.

Date of Introduction: 1938.

New Product–Documentation: Hawaii Directory of Manufacturers. 1973. p. 11. Park's Brand Products, Inc., Dba Park's Brand Kim Chee, 145 North King St., Stand 53, Honolulu, HI 96817. Tehn Jung (Mise) [Miso]. Note: This product is called "Mise" in all Hawaii Directories of Food Manufacturers, 1973-78. The company was not listed in any previous Directory of Manufacturers from 1953 to 1971. Shurtleff & Aoyagi. 1976. *The Book of Miso*. p. 240. 145 North King St., Stand 53, Honolulu, HI 96817. (It was later learned that this was not the plant but the main retail outlet). Hawaii Directory of Manufacturers. 1979-80. p. 11. The address has changed to 1712 Liliha St., Honolulu, HI 96817. The product is now called "Tehn Jung-Miso." They also make roasted sesame seeds. Letter from Takao Nihei. 1988. July 19. Says the address is now 1657 Liliha, Honolulu, Oahu, HI 96817. But the Honolulu Phone Directory shows the address as 3171 Waialae Ave., Honolulu, HI 96816. Phone: 808-733-1302.

Talk with Mike Irish, the owner. 1988. July 22. In March 1988 the company moved from the plant at Liliha St. to 3171 Waialae Ave. At the time they bought another kimchi company, Ham's kimchi. The King Street address was where the product was and still is sold. Most of it is sold there, with a little being sold at a couple of other Korean stores. The only soyfood product they make is Korean soybean jang (doen jang); he pronounces it "ten-jang" but spells it Ten-Gan on the label. He also makes kochu jang, the Korean hot chili paste, with sweet mochi rice as the base; it contains no soy. He also makes lots of kimchi. Parks Brand Products was founded in 1938 by a lady in a little store on Vineyard Blvd., in the Kalihi Valley on Oahu. Her maiden name was Park and her married name was Ko. Her company started out making kimchi, kochu jang, and soybean jang as their three main lines. She grew her own vegetables to make the kimchi. In 1973 they discontinued kimchi but made kimchi sauce in bottles. Mrs. Park's kids took over the company. When they wanted to retire, Mike bought the company from them in 1985. He is half Korean, half Irish. Mrs. Park/Ko died in 1987. He believes he is the oldest existing miso manufacturer in Hawaii. He is the largest Korean food manufacturer in the state and his biggest product is kimchi. He doesn't sell much of his soybean jang, largely because the price is about 2.5 times as much as most Japanese miso or imported Korean Jang. He sells it in small porcelain crocks as a specialty item. Note: In Honolulu/Oahu City Directories 1941-42, 1947-48, 1958-59 there is no listing for Parks Products. Letter from Michael P. Irish. 1988. Nov. 29. "We no longer produce miso (ten-gan) and I no longer have any old labels or articles about the product."

892. Sumi, M.; Tsuzuki, J. 1938. Ni, san shokuhin-chū no furabin (vitamin B-2) ryō (1) [The flavin (vitamin B-2) content of several foodstuffs (1)]. *Rikagaku Kenkyūjo*

Hokoku (Report of the Institute of Physical and Chemical Research) 17(12):1296-99. (Chem. Abst. 34:2939). [12 ref. Jap]

• **Summary:** The following foods contain the following percentage of moisture and number of units per 100 gm. The unit of measure is not known: Miso: Shinshu miso 50.5% moisture/28-35 units, sweet red miso 52.5%/12-63, Sendai red miso 54.0%/15-78, Farmhouse (Inaka) miso 53.0%/18-83, Sanshu Hatcho miso 48.5%/20-51, sweet white miso 53.0%/16-50. Shoyu 21-27 units. Shoyu presscake (kasu) 16%/710-753. Amazake 23-68 units.

893. Balzli, Hans. 1938. *Kleine Soja-Fibel. Geschichte, Anbau und Verwertung einer einzigartigen Nutzpflanze* [A little soybean primer. History, culture, and utilization of a unique useful plant]. Zurich and Leipzig: Albert Mueller Verlag. 85 p. Index. 15 cm. [26 ref. Ger]

• **Summary:** Contents: Foreword. Economic questions. Botanical. Historical. Chemical composition of the soybean seed. Utilization in East Asia: Koji, miso, shoyu, soymilk, yuba, tofu (*Sojakäese*, like Quark), soy oil and press-cake. Utilization in Europe and America: As fertilizer and feed, as food (soy flour, roasted soybeans, soy coffee, green vegetable soybeans (*den jungen Sojakern... wie junge grüne Erbse*), soy sprouts), and industrial products (incl. "soybean steel," an invention of Henry Ford). Medicinal significance. Cultivation and yield. Epilogue. Bibliography. Author-subject index.

In the chapter on History (p. 24), the author notes: "The poet Johann Heinrich Voss (lived 1751-1826) once said: 'Young Calcuttans... with your sharp soy sauce from Jakarta (*Junge Kalkuten... mit scharfer batavischer Soja*).' Then he adds to that the observation: 'Soy sauce (*Soja*) is a powerful sauce, which is prepared from soybeans (*Sojafasele*), Dolichos Soja, which originate in the East Indies and are subject to fermentation, together with brine and spice.'"

Balzli continues on page 25: "The *Deutsche Woerterbuch der Naturgeschichte* (German Dictionary of Natural History) contained in the *Allgemeinen Polyglotten-Lexikon der Naturgeschichte* (General Multilingual Encyclopedia of Natural History) by Philipp Andreas Nemnich (1793) contains the entry: 'Sojablume. Dolichos soja.' (Soya flower. Dolichos soja)."

"In the world-famous work *Geist der Kochkunst* (Spirit of the Culinary Art), the art historian C.F. von Rumohr (lived 1785-1843) also mentions soya in the second edition (1832, p. 155) and conjectures that the Garum sauce of the Romans was an imitation of the East Indian sauce (Sulze) made from soybeans (Soja)."

Page 29 reports that "During the war of 1870 (*des siebziger Krieges*, in which Bismarck of Germany defeated Napoleon III of France) the German head artillery man, O. Wehrman, saw in the botanical garden of Montigny-les-Metz a plant that was unknown to him. It was the soybean.

He took 4-5 seeds with him and planted them in early 1872 on his property / estate near Meissen (in Sachsen/Saxony, near Dresden in today's Germany). He harvested 80 to 100 seeds, with which he continued his investigations successfully for some years" [Note: Haberlandt (1878, p. 5) tells this same story].

On page 57 the author uses the term "Sojaspeisen" to refer to soyfoods. Address: Switzerland.

894. Photograph of the Yamajyu Shoyu & Koji Miso Co. factory in Hawaii. 1938.

• **Summary:** This 4 by 6 inch black-and-white photo was sent to Soyfoods Center in Sept. 1984 by William Higa of the Hawaiian Miso & Soy Co., Ltd. (1714 Mary St., Honolulu, Hawaii 96810). The original company made Shiro Koji Miso and Yamaju Shoyu. Standing by wooden kegs of miso are the founders Henry, Shinyei, and George Taru Higa. The company sign appears clearly over the factory door. Long, dark automobiles from the 1930s are parked at the left and right.

Note: A nice large print of this photo appeared on the front page of the *Hawaii Herald* on 7 Oct. 1983.

895. The analects of Confucius. Translated and annotated by Arthur Waley [from the Chinese *Lun yü*]. 1938. London: George Allen & Unwin Ltd. U.S. ed. 1966 Random House, New York. 257 p. Index. 18 cm.

• **Summary:** In the Analects (Scroll 2, Chapter 10) chiang appears in a section where the sage, Confucius, is discussing proper etiquette and social behavior, the wise choice of foods, and fasting: "Foods not accompanied by the appropriate variety of chiang should not be served. Rather than using only one to season all foods, you should provide many to ensure harmony with each of the basic food types. Make grains central to your diet. Use wine in moderation to welcome guests, but by no means should you get drunk and act foolish."

Confucius (lived ca. 551-479 B.C.) did not write the *Analects* (or any other works); they were compiled by his disciples 100 to 200 years after his death. Confucius appears from the Analects to be a private person who trained the sons of gentlemen in the virtues proper to a member of the ruling class. He lived and worked (teaching "the Way") in what today are the provinces of Shantung and Honan in eastern central China. Legge made the first popular translation of the *Lun yü* into English. Address: King's College, Cambridge.

896. Japanese American News Inc. / Nichi-Bei Shinbunsha. 1939. Nichibeï jûshoroku [The Japanese American directory. No 35]. San Francisco, California: Nichi-Bei Shinbunsha. 32 + 658 p. Jan. 1. Index of cities. 23 cm. [Eng; Jap]

Address: Ellis Street, San Francisco, California.

897. Loeb, August. 1939. The kitchen god returns to the Chinese home: And Chinatown, on this New Year's Day, pays its tribute to the cuisine for which it is known. *New York Times*. Feb. 19. p. 110.

• **Summary:** Dried chicken bones can be served “with sweet and pungent sauce or black bean sauce.”

Confucius taught the Chinese that the ideal dish should be one-third meat and two-thirds vegetables [i.e. non-meat].

Chow mein is not a particular dish, but rather a general term for fried noodles.

The great majority of Chinese who live in New York come originally from Canton. So their food represents that of southern China more than northern China.

Every Chinese meal begins and ends with tea.

Note: This is the earliest document seen (Oct. 2008) in all major U.S. newspapers digitized by ProQuest that uses the term “black bean sauce” to refer to a sauce made by crushing fermented black soybeans (soy nuggets). The new term appears in 1,338 documents between 1939 and the present, including this one in 1939, none in the 1940s, 6 in the 1960s, 21 in the 1960s, etc.

898. Mogi, Masatoshi. 1939. Miso jôzô ni kansuru kôbo no kenkyû (zokuhô). I. Keitaigaku-teki seishitsu [Studies on the yeasts found in miso. (Supplementary contributions). I. Morphological properties]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 15(10):921-32. Oct. English reference in Bulletin of the Agricultural Chemical Society of Japan 15(10), bound at the back of Nippon Nogeï Kagaku Kaishi (p. 137). [Jap] Address: Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

899. Otani, Yoshio. 1939. Microbiological studies on the “nukamiso-pickles.” *Zentralblatt fuer Bakteriologie. Series 2*. 101(4/8):139-51. [8 ref. Eng]

• **Summary:** To make nukamiso pickles, vegetables are put in a mixture of rice bran, salt, and water, then fermented and ripened. Miso is not typically used, but the bed has a consistency similar to that of miso. Inoue (1895) first analyzed nukamiso pickles and described their chemical components. Sawamura (1904) isolated a species of scum yeast and 4 species of bacteria from both fresh and old nukamiso. Address: Inst. of Zymomycology, Imperial College of Agriculture, Tottori, Japan.

900. Mogi, Masatoshi. 1939. Miso jôzô ni kansuru kôbo no kenkyû (zokuhô). II. Seirigaku-teki seishitsu. (3). Seirigaku-teki seishitsu. VII. Himaku no seisan [Studies on the yeasts found in miso. (Supplementary contributions). II. Physiological properties. (3). Physiological properties. VII. Film production]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 15(11):1023-36.

Nov. English-language summary in Bulletin of the Agricultural Chemical Society of Japan 13:24-25, bound at the back of Nippon Nogeï Kagaku Kaishi (p. 143). [Jap] Address: Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

901. Mogi, Masatoshi. 1939. Miso jôzô ni kansuru kôbo no kenkyû (zokuhô). III. Bunri seru kôbo no bunrui narabini ruien oyobi hyôchô. (4). Bunri seru kôbo no bunrui narabini ruien oyobi hyôchô [Studies on the yeasts of miso fermentation (continued). III. Classification, relation, and diagnosis of isolated yeasts]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 15(12):1221-32. Dec. [Jap] Address: Noda Shoyu K.K. Shikenjo (Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan).

902. Matsumoto, K.; Komatsu, S. 1939. Miso-chû no saikin-rui ni tsuite. III. Miso-chû no kenki-sei seisan kin ni tsuite [On the bacteria in miso. III. On the anaerobic acid-producing bacteria in miso]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 128. p. 109-22. [Jap]

903. Matsumoto, K.; Takahashi, T. 1939. Miso-chû no saikin ni tsuite. V. Nyûsan-kin kôbo tenka miso jôzô shiken [On bacteria in miso. V. On the utilization of lactic acid bacteria and yeast for miso manufacture]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 128. p. 389-96. [Jap]

904. Matsumoto, K.; Takahashi, T.; Tsujita, D. 1939. Miso-chû no saikin-rui ni tsuite. VI. Tainetsu nyûsan-kin oyobi kôon kôbo ôyô miso seizô shiken [On bacteria in miso. VI. The application of thermophilic lactic acid bacteria and yeast to miso manufacture]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 128. p. 397-401. [Jap]

905. Matsumoto, K.; Tsujita, D. 1939. Miso-chû no saikin-rui ni tsuite. IV. Miso seizô ni bareisho-kin no ôyô ni tsuite [On the bacteria in miso. IV. The application of mesentericus potato bacteria to miso manufacture]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 128. p. 381-88. [4 ref. Jap]

906. Matsumoto, K. 1939. Miso to bisei-butsu. V. Bunri saikin-rui no tokusei to sayô no ryakujutsu [Miso and microorganisms. V. Properties and action of microorganisms isolated from miso]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 34(11):1117-20. [Jap]

907. Matsumoto, K.; Tsujita, D. 1939. Kôso ôyô miso seizô no shiken [The application of enzymes for miso

manufacture]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 128. p. 375-80. [13 ref. Jap]

908. Mogi, Masatoshi. 1939. Miso jôzô ni kansuru kôbo no kenkyû (Zokuhô) [Research on yeast in miso manufacture. Morphological and physiological properties of the yeast (Abstract)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 34(12):1251. [Jap]
Address: Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

909. Sumi, M. 1939. [Flavin (vitamin B-2) content in some foods. I.]. *Rikagaku Kenkyujo Hokoku (Report of the Institute of Physical and Chemical Research)* 17:1296-. [Ger]*
Address: Japan.

910. A handbook of Philippine agriculture. 1939. Manila, Philippines: College of Agriculture, University of the Philippines. vii + 803 p. No index. 18 cm.
• **Summary:** On the title page: "Issued in commemoration of the thirtieth Anniversary." The University of the Philippines was founded in 1908. The Foreword (by L.B. Uichanco, Dean, College of Agriculture) states that its College of Agriculture opened on 14 June 1909, at which time "scientific Philippine agriculture was virtually nonexistent." The idea for the book originated with the former dean of the College of Agriculture, Dr. B.M. Gonzalez, before he was appointed president of the University of the Philippines. Soybeans and soyfoods are discussed extensively.

"Coffee adulterants" (p. 104), commonly mixed with ground coffee, include roasted ground corn, soybean, peanut, mungo, cashew, and sometimes ipil-ipil (*Leucaena glauca*).

In Chapter 1, "Field crops" is a long section titled "Peanut, soybean, cowpea" (p. 132-43). Contents of "Culture of soybean" (p. 134-41): Varieties. Preparation of the land. Planting. Cultivation. Harvesting and threshing. Yield. Green and yellow seeds of Ami soybean. Soybean sprouts. How to prepare—Soybean coffee, soybean cake [dessert, with baking powder], soybean milk, "tao-si" (salted soybean; Method furnished by Superintendent of the Davao Penal Colony), "toyo" or soy sauce.

The two main kinds of insecticides in 1939 (p. 223-31) were stomach poisons (which kill when eaten; incl. lead arsenate, calcium arsenate, Paris green) and contact poisons (incl. concentrated tobacco decoction, as in Black Leaf "40").

"Diseases of beans and other legumes (p. 319+) include downy mildew of soybean and rust of soybean.

A table (p. 448) gives the content of five vitamins found in various feeds incl. soybean seeds, soybean leaves, soybean meal, peanut meal, and peanut seeds.

"Leguminous silage" includes that from cowpea, soybean, and mungo [mung bean] (*Phaseolus aureus*). Tables give: (1) The "Average digestible nutrients in feeds" incl. soybean (p. 459, 462).

(2) The "Nutritive value of foods" incl. seaweeds (ararosp, *Gracilaria crassa*, p. 534), mungo sprouts (p. 536), green soybeans (p. 537), seguidilla or kalamismis (*Psophocarpus tetragonolobus*, fresh and sun-dried seeds, p. 538), soy products (p. 538-39) incl. soy sauce (toyo, Superior {Senkee and Co.}, Commercial), soy milk-boiled, soy residue (sapal), soy residue after second drawing of toyo, soy curd (toqua [tofu]).

(3) "Foods as sources of minerals" (calcium, phosphorus, iron; p. 580-81), incl. miso or soybean mush, soybeans-baked flour, soybeans-baked sprouts, soy curd or toqua, soy sauce or toyo (four brands: Solo, Great Eastern, Violin, Rooster), tahuri or soybean curd preserved in strong brine solution (solid portion).

(4) "Foods as sources of vitamins" (p. 593-94) incl. bean-asparagus or cigarillas (*Psophocarpus tetragonolobus*), bean-mungo (in pods or sprouts), bean-soy (dry, green, or leaves), peanut butter, seaweed, sesame (p. 601). Address: Manila, Philippines.

911. Fukai, Toshi. 1939. Shôyu oyobi miso [Soy sauce and miso]. Tokyo: Taiyokaku. 7 + 398 p. Index. 23 cm. [Jap]*
• **Summary:** The author was born in 1888. Address: Japan.

912. Matagrín, Am. 1939. Le soja et les industries du soja: Produits alimentaires, huile de soja, lécithine végétale, caséine végétale [Soya and soya industries: Food products, soy oil, vegetable lecithin, and vegetable casein]. Paris: Gauthier-Villars. x + 390 p. 18 cm. [300 ref. Fre]

• **Summary:** Contents: Introduction. 1. The agricultural, industrial, and commercial history of soya: Asiatic origins and propagation in Europe, soya in America (its cultivation and industries), soya in Europe, Asia, Africa, and Oceania (1936) (1. Admission of soya in the agriculture and industry of European nations (p. 35): Soya in France, soy industry and commerce in central and northern Europe {England, Germany, Holland, Denmark, Sweden, Poland, Austria and Hungary, Switzerland}, penetration of soya into southern Europe {Iberian peninsula, Italy, Balkan countries of Dalmatia, Istria, Yugoslavia, Greece (p. 47), Bulgaria, Romania, Ukraine}, the grandeur and decadence of soya in Russia. 2. Soya in modern Asia (p. 51): China and Manchuria, Japan, Korea, Formosa, French Indochina {Tonkin, Cambodia, Cochin China}, the British and Dutch Indies {Siam, Assam, Bengal, Burma, Ceylon, India, Straits Settlements [later Singapore] / Malacca}, western Asia {Turkestan, Persia (p. 57)}. 3. Soya in Africa and Australia (p. 57-58): South Africa, Rhodesia, Nigeria, Gold Coast [later Ghana], Cote d'Ivoire, Dahomey, Togo, Algeria, Tunisia, Morocco, Egypt, Australia {Queensland, New

South Wales, Victoria}, Tasmania, New Zealand, not yet in British New Guinea [later Papua New Guinea], Philippines, Java).

2. The botany and agronomy of soya: The plant, its names, its botanical characteristics, its varieties (original and created by selection), the cultivation of soya. 3. The general chemistry of soya: Chemical composition of the plant, structure and chemical composition of the beans. 4. Using soya in soyfoods and soyfood products: Whole soybeans (fresh, dry, sprouted, roasted and salted (*Fève grillée, fève salée de soja, fèves de soja salées*, p. 166-67), soynut butter (*un mélange rappelant les beurres végétaux*), soy coffee, soy confections, soy chocolate, soy sprouts), soymilk and tofu (*le lait et le fromage de soja*), okara (*pulpe résiduaire de la préparation du lait de soja*), fermented soy products (solid, paste, and liquid condiments; natto, miso, and shoyu [soy sauce]; kiu-tsee and lactic ferments), soy flour and bread. 5. The soy oil industry and products derived from it: Extraction and refining of soy oil, properties and use of soy oil. 6. The vegetable lecithin industry: Extraction of vegetable lecithin, properties and use of vegetable lecithin. 7. The vegetable casein industries and plastic materials based on soya: Soybean cakes and flours from which the oil has been removed, use of such cakes and flours, in the crude state, as a raw material for plastics, manufacture and use of vegetable protein, soybean cellulose for artificial silk, soya furfural and furfuraldehyde (phenolic resins). Conclusion: How to launch soya industries in France. important terms:

Note 1. This is the earliest French-language document seen that uses the terms *Fève grillée, fève salée de soja*, or *fèves de soja salées*, “roasted soy beans” to refer to soynuts.

Note 2. This is the earliest French-language document seen (April 2005) that mentions soynut butter, which it calls *un mélange rappelant les beurres végétaux*. Address: France.

913. **Product Name:** Tofu, Agé, Miso, Natto, Okara.

Manufacturer's Name: Harada Tofu, Zakka-ten.

Manufacturer's Address: P.O. Box 180, Fowler, California.

Date of Introduction: 1939?

New Product–Documentation: The Japanese American Directory. 1941. p. 283. Harada (Gonshiro) Tofu-ya (in Japanese). Harada, G., P.O. Box 180 (in English), Fowler, California. Phone: Not listed. This listing is in the “Residence” section, so the owner’s first name is Gonshiro.

Talk with Brad Kubota, owner of Fresno Tofu Co. 1990. Dec. 4. He has heard from Japanese-American old-timers living in Fresno that there were two tofu shops in Fowler before World War II. Fowler is located about 10 miles southeast of Fresno.

Letter from Masakazu Iwata of Montebello, California. 1995. In 1939 Gonshiro Harada (died 1943), an Issei (first-

generation Japanese immigrant to the USA) relocated from Fresno to Fowler, about 10 miles southeast of Fresno. There he and his wife and family (nine children) established the Harada Tofu Co. and manufactured such foods as tofu, kamaboko, agé, miso, natto, okara, and other related items, peddling them to the Japanese farmers in a broad area of Central California.

Note: This was apparently one of America’s first two commercial natto manufacturers. The other was Yonai Natto Seizô-sho in Los Angeles (see p. 328 of this 1941 volume).

914. Japanese American News Inc. / Nichibei Shinbunsha. 1940. Nichibei jûshoroku [The Japanese American directory. No 36]. San Francisco, California: Nichi-Bei Shinbunsha; The Japanese American News. 688 p. Jan. 1. Index of cities. 23 cm. [Eng: Jap]

• **Summary:** On p. 7, under “Food products manufacturers,” are listings (name, address, phone no.) in San Francisco for: Azumaya Co., Fujimoto Co., Umino Tofu Mfg., and Norio Co. On the facing page is a full-page ad for Fujimoto Co., importers, manufacturers & exporters, 246 Front St., San Francisco. The company makes miso, koji, and pickled salmon (*sake tsukemono*). They sell tofu ingredients (presumably soybeans and nigari). Address: 350 Ellis Street, San Francisco.

915. Schoffelmayer, Victor H. 1940. Research will bring soybeans to Texas, scientists declare. *Dallas Morning News*. Jan. 22.

• **Summary:** Photos show: (1) A man standing in a soybean field in Arlington, Virginia. (2) William Morse holding a box of black miso. (3) A farmer on a combine in Illinois. Address: Agricultural Editor of The News.

916. Mogi, Masatoshi. 1940. Miso jôzô ni kansuru kôbo no kenkyû (Zoku-hô). IV. Kôtsatsu oyobi sôkatsu. (5). Kosatsu [Studies on the yeasts in miso fermentation. IV. Considerations and summary. (5). Considerations]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 16(1):7-17. Jan. [27 ref. Jap] Address: Noda Shoyu K.K. Shikenjo: Brewing Laboratory, Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

917. Mogi, Masatoshi. 1940. Miso jôzô ni kansuru kôbo no kenkyû (hoi). I. Keitaigaku-teki seishitsu [Studies on the yeasts in miso fermentation (addenda). I. Morphological characteristics]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 18(6):543-54. June. [Jap] Address: Noda Shoyu K.K. Shikenjo (Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan).

918. Noda Shoyu K.K. 1940. Noda Shôyu K.K. Nijûnen-shi [Twenty-year history of Noda Shoyu, Inc.]. Noda, Japan:

Noda Shoyu K.K. 733 p. Illust. No index. 22 cm. [Jap]
 • **Summary:** This is the first major history of Kikkoman, written largely by Mr. Morio Ichiyama. Contents: Preface. 1. History: Before the establishment of Noda Shoyu K.K. (Development of Shoyu Industry and Noda Machi, Noda Shoyu Jozo Kumiai, family trees and family traditions of the Mogi, Takanashi, Horikiri, Ishikawa), foundation of Noda Shoyu K.K., 20 years after the establishment. 2. Organization and management. 3. Plants (17): Korea, Jinsen?, Keijo plants. 4. Fermentation process: Special products (mirin, miso, sauce), testing center. 5. Business. 6. Cultural welfare facilities. 7. Connected enterprises: K.K. Noda Shoyu Ginko, Sobu Tetsudo K.K., Noda Transportation K.K., Gomei Company Senshukai, Foundational Juridical Perdon Kofukai, Manchuria Noda Shoyu K.K., Choshi Shoyu K.K.

Appendixes. Time table/chronology: Ranking of capital investments of shoyu producing companies in Japan, graph of yearly shoyu production in Japan, sales of shoyu, mirin, and miso by the company, sales of the company's shoyu comparing by area and also container, the company's shoyu exporting map, average sales of the company's shoyu, prices of raw materials of shoyu production, prices of shoyu in different type containers.

Pages 461-65 give an introduction to and description of each of the major brands produced by companies presently in the Noda Shoyu group. Under the Kikkoman brand, we learn that the producer of this brand of shoyu is the Saheiji MOGI family. It is said that the logo was designed by Manpei SARANUMA. It is said that the meaning and origin of the brand is as follows. The first "big army of God" in Japan was honored at a place named *Shimousa no Kuni, Kikkô mountain (Kikkô-zan), Katori Shrine (Jingu)*. The name of the mountain, Kikkô, was used in the brand. The tortoise (*kamé*) symbolizes long life and is thus a symbol of happiness. It is said that a tortoise lives for 10,000 [*ichi-man*] years. The grace with the tortoise is born shows high-class dignity with supernatural power.

Pages 466-480 show all of the shoyu brands (including minor ones) produced by companies in the Noda Shoyu group. For each brand, the name, year of introduction, quality rank, and area where sold are given. Early brands, those introduced before the start of the Meiji period (1868), are read from top to bottom, right to left.

The Saheiji MOGI line produced a total of 15 shoyu brands. The earliest was introduced in 1784. Early brands were: Kikkôman (Tenmei 2 = 1784), Kikkôdai (Tenmei 2 = 1784), Azumaichi (Tenmei 2 = 1784), Yamataika (Tenmei 2 = 1784).

The Shichirouemon MOGI line produced a total of 58 shoyu brands. The earliest was introduced in 1772. Early brands were: Kihaku (Anei 1 = 1772), Kagikashiwa (Anei 1 = 1772), Fujikashiwa (Anei 1 = 1772), Shôchikuba (Anei 1

= 1772), Kikkôkashiwa (Tenmei period = 1781-89), Hôzan (Kaei 2 = 1849).

The Shichizaemon MOGI line produced a total of 30 shoyu brands. The earliest was introduced in 1830. Early brands were: Kushigata (Tenpo 1 = 1830).

The Hyôzaemon TAKANASHI line produced a total of 39 shoyu brands. The earliest was introduced in 1772. Early brands were: Jôjû (Anei 1 = 1772), Betatakara (Anei 1 = 1772), Tachitakara (Anei 1 = 1772), Jigamisakari (Anei 1 = 1772), Fundonokina (Genji 1 = 1864), Fujitakara (Kaei 2 = 1849).

The Fusagoro MOGI line produced a total of 48 shoyu brands. The earliest was introduced in 1753. Early brands were: Minakami (Ansei 2 = 1855), Fujimasa (Hôreki 3 = 1753).

The Noda Shoyu Goshi Gaisha produced a total of 13 shoyu brands, the Keizaburo MOGI line produced a total of 7 shoyu brands, the Monjiro HORIKIRI line and the Kanzaemon YOSHIDA line each produced one brand, and the Nihon Shoyu K.K. produced 2 brands, but all were introduced after the start of the Meiji period (1868).

A section on exports (p. 650-) notes that it is not clear when direct exports of shoyu from Japan to the western world began, but at some time during the Bunsei (1818-1830) or Tempô (1830-1844) periods it was shipped to Holland along with other goods. In 1854 (at the start of the Ansei period, 1854-1860) an American ship came to Japan and during the stay they bought some Japan. Also during this same Ansei period it is said that special shoyu was made for export. Made by Sairinko SHIMAZU, it was bottled and shipped via Holland House (Oranda Yashiki) in Nagasaki.

Contains many photos and illustrations. Address: Noda, Japan.

919. Rabbit, James A. 1940. Rice in the cultural life of the Japanese people. *Transactions of the Asiatic Society of Japan* 19:187-257. Dec. Series 2. Plus 6 pages of unnumbered plates at end. A lecture delivered before the Asiatic Society of Japan, Nov. 1939.

• **Summary:** This is an in-depth article by an expert on the subject. Contents: Foreword. The sacredness of rice. The honorable rice throughout the year. Rice in Japanese literature. Rice and religion. Socio-economic influences.

Page 243: "Intercourse with foreign countries, limited as it was from the 16th to the middle of the 19th centuries, has not been without its influence on the national cookery, as is evidenced by the introduction of such exotic foods as *sukiyaki* or *gyûnabe* (beef and vegetables fried in a flat pan with *shôyu* sauce), *torinabe* (fowl and vegetables fried in a flat pan with *shôyu* sauce), tempura (fried in batter) and many other dishes which are still considered to be almost a part of the Japanese menu, particularly in the thousands of eating houses of the metropolitan cities."

Page 244: “The trinity which constitutes the bulk of Japanese daily fare consists of rice, *miso* (bean paste) [sic, soup], and *tsukemono* (pickled vegetables cured with salt or a mixture of rice bran and salt).”

On p. 245 is an interesting discussion of *genmai* (uncleaned rice [brown rice]). “This *genmai* with a generous mixture of wheat was for a long time the staple food among farmers... Although the superior nourishment of *genmai* is well known at the present time and has received much publicity, those who favor its universal adoption are looked upon as faddists, similar to the attitude toward vegetarians in western lands.”

Pages 256-57 discuss the origins, history, and present status of sushi. Today there are an estimated 1,500 to 1,600 sushi shops in Tokyo alone; in addition to these about 500 small stalls appear each night. Describes the arts of making and eating sushi. “After dipping it into a dish of *shōyu* (soya bean sauce), place the dripping sushi into your *kuchi* (mouth) without the loss of one drop of sauce and in such a manner that the fish side comes in contact with the tongue before the rice.” Address: Japan.

920. Fukai, Tōshi; Inamori, S. 1940. Miso shikiso sosei saikin no kensaku [On bacteria producing the color of miso]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 129. p. 139-58. [Jap]

921. Hiroshima Joshi (*Hiroshima-ken Jozo Shikenjo Hokoku*). 1940. [Studies on miso]. 18:76-. [Jap]*

922. Nippon Gakujutsu Shinkokai. 1940. Manyōshū [Man'yōshū]. Tokyo: Iwanami Shoten. 502 p. [Jap]*

923. Prescott, Samuel Cate; Dunn, Cecil Gordon. eds. 1940. *Industrial microbiology*. New York, NY: McGraw Hill Book Co. x + 541 p. Illust. Index. 23 cm. [53* ref]

• **Summary:** In Chapter 8, titled “Yeast: Its manufacture, vitamins, and uses,” p. 155 states that soybeans, freed of bitter principles, sugar-beet juice, and various other substances have been proposed either to increase the yield of yeast or to act as the source of nutrient material (See Chrzaszcz and Janicki 1936).

Chapter 24 titled “The molds” (p. 339-57) discusses: Some important Aspergilli (members of the *Aspergillus flavus-oryzae*, especially strains of the *A. oryzae* series are of major industrial importance in the Orient [East Asia]). They are used to make sake, shoyu, miso, and *mizuame*, a sugar syrup made from rice (p. 350). Divisions of Penicillia (the genus Penicillium). The genus Rhizopus (used in the Amylo process for converting starches to sugars—see p. 48). Mold enzymes. Apparatus for cultivating molds. References on molds (42).

Chapter 32 titled “Mold enzyme preparations: Uses and products” (p. 419-24), has the following contents:

Introduction. Commercial amylase and its preparation. Koji and its preparation. Some mold products (in Japan): Soy sauce or shoyu, tamari, miso. The uses of mold enzymes (industrially): Amylases, invertase, proteases, and pectinase. The authors cite the industrial applications of members of the *Aspergillus flavus-oryzae* group especially strains of *Aspergillus oryzae*. Commercial amylase or diastase is marketed under a variety of trade names such as Taka-diastase, Kashiwagidiastase, Digestin, Polyzyme, Protozyme, and Oryzyme. These are generally mixtures of enzymes, however purified enzyme preparations (such as Taka-amylase) may be obtained.

Koji may also be used to make sake (rice wine) and shocho (distilled alcoholic liquor). “The use of *koji* in the United States was introduced by Takamine” (p. 420). Address: Cambridge, Massachusetts.

924. Sampaio, Sebastiao C. 1940. Soja [Soybeans]. Sao Paulo, Brazil: Tipografia Brasil, Rothschild Loureiro & Cia, Ltda. 43 p. Secretaria da Agricultura, Industria e Comercio do Estado de Sao Paulo. [20 ref. Por]

• **Summary:** Contents: Introduction: Soya. Botanical description. Varieties. Composition of the plant. Culture/cultivation. Enemies and pests. Improvement of the seeds: Improving the oil (*óleo dos graos de soja*), improving the cake and flour, other improvements. Commerce and trade.

This general book draws heavily on U.S. publications, including Piper and Morse, 1923. The section titled “other improvements” briefly mentions many food uses of soybeans, including vegetable-type soybeans (Easycook and Hahto), green vegetable soybeans (*Quando verdes... elas constituem ótimo legume verde*), soy sprouts, soy flour, soymilk (*leite de soja*), soy casein, soy cheese (*queijos e requeijos*) [tofu], shoyu, and miso. The Japanese colony in Sao Paulo makes shoyu in commercial quantities.

Note 1. This is the earliest Portuguese-language document seen (July 2001) that mentions green vegetable soybeans, which it describes as shown above.

Note 2. This is the earliest Portuguese-language document seen (Sept. 2006) that uses the term *óleo dos graos de soja* to refer to soybean oil. Address: 3a Seccao Tecnica do Departamento do Fomento da Producao Vegetal, Sao Paulo, Brazil.

925. **Product Name:** Best Canned Maruta Misozuke Daikon (Giant White Japanese Radishes Pickled in Miso).

Foreign Name: Maruta Misozuke Daikon.

Manufacturer's Name: Kawamura Yoheibei.

Manufacturer's Address: Honzaimoku-cho 3 chôme, Kyôbashi-ku, Tokyo-shi, Japan. Phone: Kyôbashi 1705..

Date of Introduction: 1940?

Ingredients: Daikon, miso.

New Product–Documentation: Photocopy of label (from canned product) sent to Soyfoods Center (in late 1981) by

Esta Keirn, formerly of Oriental Show-You Company (Columbia City, Indiana). Undated. Characters are read from right to left. Maruta is a registered trademark. Supplier to the Imperial Army and Navy (*Kunaishô Riku Kaigun Goyôtatsu*). Makers of “Homare zuke” products that help you to live for 10,000 years (*Homare zuke seizô moto*).

926. Fujimoto Shokai. 1941. Fujimoto Co.: Importers, manufacturers & exporters (Ad). In: The Japanese American News Inc. 1941. The Japanese American Directory (*Nichibei Jûshoroku*). No. 37. p. 6. [Eng; jap]

• **Summary:** Ad (full page). The top 1/5 of this ad is in English. They make Kanemasa brand miso, koji, and Japanese-style pickles (*tsukemono*). They sell raw materials for making tofu (presumably whole soybeans and one or more coagulants) and also sake. Address: 246 Front St., San Francisco, California. Phone: EXbrook 1756.

927. Ishimitsu Shoten. 1941. Ishimitsu (S.) Co. (Ad). In: The Japanese American News Inc. 1941. The Japanese American Directory (*Nichibei Jûshoroku*). No. 37. p. A-10 (near front). [Eng; jap]

• **Summary:** Ad (half page vertical). The top ¼ of this ad is in English. A direct import and export merchant, they sell grocery and household goods including shoes, plus Kikkoman shoyu (the Kikkoman logo is shown), miso and Ajinomoto. Address: 224 Commercial St., San Francisco, California. Phone: SUTter 2748.

928. Japanese American News Inc. / Nichibei Shinbunsha. 1941. Nichibei jûshoroku [The Japanese American directory. No 37]. San Francisco, California: The Japanese American News Inc. (Nichibei Shinbunsha). 720 p. Jan. 1. Index of cities. 23 cm. [Eng; Jap]

• **Summary:** Contents: Ads (in Japanese and English, p. A-1 to A-22). Directory of Japanese embassy, consulates, and legations in the USA and Latin America (in Japanese and English, p. A-22). Key addresses in Japan (in Japanese, p. A-23 to A-27). Index to the 1941 Japanese American Directory, by nation (USA and Latin America), and within nation by state, then by city (p. A-28 to A-31). One-page ad for Kirin Beer (p. A-32).

Directory by nation (USA and Latin America), and within nation by state, then by city (p. 1 to 686). There are many smaller ads on the lower half of quite a few directory pages, for a company listed on that page. For cities having many Japanese businesses (such as San Francisco and Los Angeles), a table of contents to the business in that city, organized alphabetically by type of business, is given in Japanese on the first page concerning that city (For example, Shokuhin seizô-sho = food manufacturers). Between pages 303 and 305 are 6 pages of ads (B-1 to B-6) for Japanese American companies located in Los Angeles. Publisher / publishing information (p. 686). A (in Japanese

and English, p. 687-688 + inside rear cover and rear cover). On the front cover (which is mostly in English and is at the “back” of the book) is an illustration of the Golden Gate Bridge, below which are America and Japanese flags with an illustration of the dome of city hall between them. In the center, vertically in Japanese characters is written *Nichibei Shinbun-sha*.

Note 1. Within each city, all businesses are listed under basic bold headings (in both Japanese and English) such as Food Products Manufacturers (where most soyfoods manufacturers are listed), Importers & Exporters, Importers & Groceries, Brewery, Rice Mill, Farm Produce Buyers, Seeds and Fertilizer Cos., Insurance Agents, etc. For each entry / listing is given the company name, address, and phone number; the company name is given in both Japanese characters and English (romanized), whereas the address and phone number are only in English. The last bold heading in each city is Residence; all people of Japanese ancestry are listed alphabetically by family name. For each person is given his or her name, address, and phone number. The full name is given in Japanese characters; the family name plus the first letter of the first name is given in English (romanized).

Note 2. For each major city, a table of telephone number prefixes is given on the first page for that city. For San Francisco, for example: AT = ATwater, BA = Bayview. CH = China. These are useful when dialing long distance using an operator. The many directory listings for soyfoods manufacturers and ads for soy-related companies are each given separately.

Note: We can find no entries for soyfoods makers in Latin America or other U.S. states. Address: 650 Ellis Street, San Francisco, California.

929. Roux, Charles. 1941. Le soja [The soybean]. *Revue Internationale du Soja* 1(1):4-20. Feb. [Fre]

• **Summary:** An introduction and overview. Contents: Introduction: Varieties, composition. Soybean cultivation. Feed, food, and industrial uses of soybeans.

The author has recently discovered a way of making petroleum from soybeans (p. 18). Address: Directeur General de l'Association Technique Africaine.

930. Roux, Charles. 1941. Le soya [The soybean]. *Revue Internationale des Produits Coloniaux et du Material Colonial* 16(181):8-25. March. [Fre]

• **Summary:** Contents: Introduction. Chemical composition. Cultivation. Food and industrial uses of soybeans: Incl. soymilk, tofu, soya casein, soy flour, soy bread, soy oil, soybean cake, green vegetable soybeans, fermented soy condiments (natto, miso, shoyu), roasted soy coffee, industrial uses, petroleum substitute.

Appendix A: Composition of various parts of the soybean plant: (1) Green—stems, leaves, pods. (2) Dry—

stems, leaves, pods. (Averages based on analyses by M. Lechartier). (3) Composition of soybean seeds: Whole seeds, cotyledons, embryos, seed coats (based on analyses by the Municipal Laboratory of Paris and the Laboratory of the Biological Society of the Far East [*la Société Biologique d'Extrême-Orient*]).

Appendix B. Composition of the seeds of various soybean varieties by various analysts: Steuf, Pellet, By Steuf: From Hungary, Yellow from Mongolia, From China, Chinese reddish brown. By Pellet: From China, from Hungary, from Etampes. By Giljaransky [Giliaranskii, Giljarinsky, Giljaranskii, Giljaranski, Gilyaranskii, Gilyaranskii]: Yellow from Russia, Yellow from China, Yellow from Japan, Black from China, Black from Japan, Green from Japan. By Lechartier: From Etampes, Etampes dry, Black, Black dry. By Jardin Colonial: Soja from Laos, Soja from Tonkin, Soja from China. By Schroeder: Reddish brown dry, Yellowish brown dry, Tumida pallida yellow. By König: Tumida castanea brown, Tumida Astrosperma [sic, Atrosperma] black.

Appendix C. (1) Composition of soybeans (maximum and minimum) compared with four other legumes. (2) Composition of soybeans and beef compared. (3) Composition of soy flour and wheat flour compared. Address: Director General of the Association Technique Africaine.

931. *Soybean Digest*. 1941. Hawaiians make many soybean foods. July. p. 8-9.

• **Summary:** Carey D. Miller, nutrition specialist at the Hawaii Agricultural Experiment Station, has described a large number of the soybean foods that Hawaiians make in Bulletin No. 68 of the Hawaii Station, "Japanese Foods Commonly Used in Hawaii" (1933). These foods include: Edamame (Green Soybeans; "The whole pod of the fresh green beans is placed in boiling salted water and cooked for about 25 minutes"), Tofu (Soybean Curd, incl. the residue known as "kirazu"), Aburage (Fried Soybean Curd), Miso, and Shoyu. A brief description is given of how each is made. Photos show: Three triangles of aburage on a dish. A dish of tōfu kasu (okara or kirazu).

932. *New Canadian (The)*. 1941. Shoyu supplies cut off—Local firm prepared to meet demand. Community consumes fifty thousand gallons annually. Aug. 22. p. 8.

• **Summary:** Mr. Teiichi Amano, head of Amano Bros. Ltd. makes Maruten brand shoyu bean-sauce, miso, and vinegar in his plant at 2141, 2135, 2131 Dundas Street, Vancouver, BC, Canada. In January 1941 he started to brew shoyu, which used to be imported from Japan before budget import restricts took effect. It must age for 7-12 months. His soybeans are imported from California. For 12 years he has made miso and vinegar, and in Japan his father and grandfather made shoyu. Mr. Amano estimates that shoyu

consumption in British Columbia exceeds 48,000 gallons/year. A photo shows the inside of the plant. Address: British Columbia, Canada.

933. **Product Name:** Marufuku Miso.

Manufacturer's Name: American-Hawaiian Soy Company.

Manufacturer's Address: 274 Kalihi St., Honolulu, Oahu, Hawaii. Phone: 808-841-8435.

Date of Introduction: 1941.

Wt/Vol., Packaging, Price: Later sometimes canned.

New Product—Documentation: Ad by American-Hawaiian Soy Company in Hui Manaolana. 1951. *Japanese Foods: (Tested Recipes)*. Honolulu, Hawaii. See p. 23. "Ask for Maru Fuku Brand Soy Bean Miso. 274 Kalihi St. Phone: 846455." Note: This same ad appears on the same page in the 1956 edition of this book.

Hawaii Directory of Manufacturers. 1953. p. 10. Miso (Soy bean paste). American-Hawaiian Soy Company, 274 Kalihi St., "Marufuku." Honolulu City Directory. 1965-66. p. 252. American Hawaiian Soy Co., Ltd. is the only miso manufacturer listed for this year. Hawaii Directory of Manufacturers. 1969. p. 16. Same address. Zip code is now 96817.

Nihei. 1978. *Nippon Jozo Kyokai Zasshi*. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." States that America, Hawaiian Miso Shoyu Kaisha was founded by Kiko Yogi and Moshu Morita. Brand is Marufuku Miso. Address: 274 Kalihi St. Still in business. Wm. Higa. 1980. *History of Miso Companies in Hawaii*; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234, 255. The company was founded by George Higa, Seiyu Inamine, Kiko Yogi, Moshu Morita. In 1947 George Higa left to form Hawaiian Miso & Soy Co. Harry Morita is present owner. Produces white miso, sometimes sold in cans, distributed by Mutual Trading Co. in Los Angeles.

934. Matsumoto, K.; Naruse, K. 1941. Miso oyobi miso-dama-chû no saikin-rui ni tsuite. Miso oyobi miso-dama ni okeru saikin-rui no gakujutsu-teki shiken [On the bacteria in miso and miso-dama]. *Jozo Shikensho Hokoku (Report of the Brewing Experiment Station)* No. 129. p. 93-138. [9 ref. Jap]

935. Mogi, Masatoshi; Nakajima, Shigeji. 1941. Miso jôzô shiken: "Homare shiro-miso" no kenkyû. XIV. [Studies on miso fermentation: Research on "homare" white miso. XIV]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 19(10):757-72. [8 ref. Jap]

Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan (Noda Shoyu Kabushiki-gaisha, Shikenjo).

936. Mogi, Masatoshi; Nakajima, Shigeji. 1941. Miso jôzô shiken: "Homare shiro-miso" no kenkyû. XV. [Studies on miso fermentation: Research on "homare" white miso. XV]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 19(10):772-79. [20 ref. Jap]
Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan (Noda Shoyu Kabushiki-gaisha, Shikenjo).
937. Mogi, Masatoshi; Nakajima, Shigeji. 1941. Miso jôzô shiken: "Homare shiro-miso" no kenkyû. XVI. [Studies on miso fermentation: Research on "homare" white miso. XVI]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 19(11):835-50. [16 ref. Jap]
Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan (Noda Shoyu Kabushiki-gaisha, Shikenjo).
938. Thunberg, Karl Peter. 1941. Tsunberugu no nihon kikô [Thunberg's voyages in Japan]. Tokyo: Okugawa Shobo. Translated by Yamada Tamaki from original edition of 1796. [Jap]*
939. *Miso Shoyu Kogyo (The Miso and Shoyu Industries)*. 1941—. Serial/periodical. Tokyo: The Soy Society. Monthly. [Jap]*
• **Summary:** The book *Japanese Serial Publications in the National Agricultural Library* gives the English title as "The Soy and Miso Sauce Industry." Address: Tokyo, Japan.
940. Guillaume, A. 1942. L'utilisation du Soja dans l'alimentation et dans l'industrie [The utilization of soybeans in food and industry]. *Revue de Botanique Appliquee & d'Agriculture Tropicale* 22(247-248):191-97. March/April. [7 ref. Fre]
• **Summary:** Contents: Introduction. Food uses: Whole soybeans, soy sprouts, soy coffee, soy milk, tofu, shoyu, miso, natto, soy flour. Industrial uses: Soy oil, Henry Ford and hexane solvent extraction, lecithin, soybean cake, animal feeds, plastics, green forage. Address: Professor, Univ. of Strasbourg.
941. Mogi, Masatoshi. 1942. Miso jôzô ni kansuru kôbo no kenkyû (hoi). II. Seirigaku-teki seishitsu [Studies on the yeasts in miso fermentation (addenda). II. Physiological characteristics]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 18(7):629-41. July. [Jap]
Address: Noda Shoyu K.K. Shikenjo (Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan).
942. Mogi, Masatoshi. 1942. Miso jôzô ni kansuru kôbo no kenkyû. III. Bunri seru kôbo no bunrui narabini ruinen oyobi hyôchô (4) [Studies on the yeasts in miso fermentation. III. Classification of isolated yeasts (4)]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 18(8):733-41. Aug. [Jap]
• **Summary:** Genera discussed include *Zygomichia*, *Hansenula*, *Pseudohansenula*, *Torulopsis*, *Pseudomycoderma*, and *Pseudomonilia*. A number of new species are claimed. Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.
943. Mogi, Masatoshi. 1942. Miso jôzô ni kansuru kôbo no kenkyû. IV. Kôtsatsu oyobi sôkatsu. (5). Kôtsatsu [Studies on the yeasts in miso fermentation. IV. Considerations and summary. (5). Considerations]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 18(10):940-44. Oct. [23 ref. Jap]
• **Summary:** The main genera discussed include *Saccharomyces*, *Zygosaccharomyces*, *Zygomichia*, *Hansenula*, *Pseudohansenula*, *Torulopsis*, *Pseudomycoderma*, and *Pseudomonilia*. A number of new species are claimed. Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.
944. Mogi, Masatoshi; Nakajima, Shigeji. 1942. Miso jôzô shiken: "Homare shiro-miso" no kenkyû. XVIII. "Waki," sokushin shiken [Studies on miso fermentation: Research on "homare" white miso. XVIII Test to promote waki]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 20:107-13. [6 ref. Jap]
• **Summary:** In this article, the Japanese noun *waki* is difficult to translate into English. Related verbs are *wakikaeru* = to seethe, ferment, or boil up; *wakideru* = to bubble up; *wakiagaru* = to boil up, arise. One possible translation is "overfermentation." Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan (Noda Shoyu Kabushiki-gaisha, Shikenjo).
945. Mogi, Masatoshi; Nakajima, Shigeji. 1942. Miso jôzô shiken: "Homare shiro-miso" no kenkyû. XIX. "Waki," bôshi shiken [Studies on miso fermentation: Research on "homare" white miso. XIX. Test to stop waki]. *Jozogaku Zasshi (J. of Brewing, Osaka)* 20:155-68. [6 ref. Jap]
• **Summary:** In this article, the Japanese noun *waki* is difficult to translate into English. Related verbs are *wakikaeru* = to seethe, ferment, or boil up; *wakideru* = to bubble up; *wakiagaru* = to boil up, arise. One possible translation is "overfermentation." Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan (Noda Shoyu Kabushiki-gaisha, Shikenjo).
946. Mogi, Masatoshi; Nakajima, Shigeji. 1942. Miso jôzô shiken: "Homare shiro-miso" no kenkyû. XX. "Waki" kôbo ni tsuite [Studies on miso fermentation: Research on "homare" white miso. XX. The yeasts involved in waki].

Jozogaku Zasshi (J. of Brewing, Osaka) 20:258-63. [6 ref. Jap]

• **Summary:** In this article, the Japanese noun *waki* is difficult to translate into English. Related verbs are *wakikaeru* = to seethe, ferment, or boil up; *wakideru* = to bubble up; *wakiagaru* = to boil up, arise. One possible translation is “overfermentation.” Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan (Noda Shoyu Kabushiki-gaisha, Shikenjo).

947. Onuki, Motoi. 1942. *Chômi shokuhin* [Foods that are seasonings]. Tokyo: Yuzankaku. 233 + 6 p. 22 cm. [Jap]* Address: Japan.

948. Rouest, Antoine. 1942. *Le soja français* [French soybeans]. Argenton, France: Langlois. 48 p. Preface by J. Bordas. [9 ref. Fre]

• **Summary:** Contents: Preface, by L Brétignière (Prof. at Grignon, Member of the Academy of Agriculture). Preface to the first edition, by Louis Forest (1921). Introduction to this new edition: Soviet Russia and the soybean (*le Soja*; includes the story of Rouest’s stay in the Northern Caucasus, Russia, from 1930 to 1933), Germany and Poland take up the soya question, the canons [guns] of Germany versus the Manchurian soybean, a secret contract to provide the weapons of war, organization of a Polish bank in Manchuria, Germany cultivates soybeans in Romania and Bulgaria in preparation for the war, France and the cultivation of soybeans.

1. What is soja? 2. History of the propagation of soja: Introduction of the soybean into France and Europe, the soybean is cultivated in central Europe, in Austria, in 1875, in France the soybean is the object of numerous trials from 1876 to 1881, its cultivation worldwide, the study and acclimatization of soya become generalized.

3. Botanical characters of the soybean: And the varieties of soybeans. 4. Chinese varieties: The soybean in China, the production of soya in China in 1916 and 1917, production of soya in the Far East during the year 1928, exportation of soya from the Far East to Europe.

5. Japanese varieties: The soybean in Japan, varieties of soya from Indochina and from other Asian countries. 6. The soybean in America: American varieties, cultivation of soybeans in Ohio, selection of soya using pure lines in Connecticut.

7. The soybean in Europe: Italy, Russia, France, French climatic zones for the cultivation of *Soja hispida*, the Atlantic zone, the continental zone, the Mediterranean zone and climate, can the soybean cultivated in all the French climates including those in the north, northeast, and northwest, speedy production of soybeans in view of agricultural production and of the creation of early varieties for the regions in north and northeast France.

8. Instruction for growing soja in France. 9. Soja in Manchuria. 10. Soja seeds. 11. Selection of soja. 12. Varieties of soja. 13. Different ways of planting soya seeds. 14. Soy yield. 15. Nitrogen fixation in soya seeds. 16. Tilling and preparing the earth. 17. Soja fodder. 18. Soja, striking and improving. 19. Harvesting soja grain. 20. Soja oil. 21. Soja oil-cake for animal feeding. 22. Vegetable milk, soja milk and industrial casein.

23. Soja in human food: Soy flour and its applications, soy bread with wheat, nutritional composition of soja compared to dry legumes, soy viewed as a dry legume to replace meat, comparative production of nutritive elements among the various legumes used for human food, comparative value in calories of the usual foods and of soja, preparation of soy soups and meals in compressed tubes, what varieties of soy can serve the special needs of human nutrition, Sojenta, potatoes stuffed with soy, force meat balls (*boulettes*) of rice and soy, bread of rice and soy, pudding of soy and rice, soy sprouts and their food value, fresh soy sprouts in a salad, soy sprouts with vegetables, soy preserves and confections, soy chocolate, soy coffee, soybeans conserved in containers, soy with smoked fish, soup with soy vegetable meat, soymilk soup, omelet with smoked soy vegetable ham, green soy sprouts, soy cake, soy force-meat fritters.

24. The utilization of soja in the Far East: Vegetable cheese (tofu), soy-based condiments, Japanese natto (2 types), Japanese miso, Chinese miso, soy sauce (*soyou* or *schoziou*), making soy sauce in Kwantung, China, making soy sauce in Japan, koji or molded rice.

25. The culture of soja in North Africa (Rouest has varieties that would grow and yield well in the French colonies of Tunisia, Algeria, and Morocco). 26. Opinions of some authors on soja. Conclusions. Bibliography on soja.

A small photo on the “Dedication” page shows Léon Rouest (born in Paris on 11 Nov. 1872). Address: Directeur de la Station des Recherches Agronomiques d’Avignon.

949. *Manzanar Free Press (Manzanar Internment Camp, California)*. 1943. Manufacturing and industrial. March 20. p. 6.

• **Summary:** “‘Shoyu,’ or soy sauce, a necessary commodity of the Japanese began production in November to supply the center and other centers in the future. Since production began, 2000 gallons per month has been the total but since January this has been increased to 5,000 gallons. Foreman of this project is Nobutaro Nakamura.”

Production of bean sprouts [the type of seeds used is not mentioned; probably mung] began in late October. Production now averages 1,600 pounds a week. The foreman is Shigeji Tomita.

A project to make “tofu” is being contemplated, with Henry Toda as foreman. Also a project to make miso.

Note 1. Manzanar (literally “apple orchard”) was the name of the Japanese internment / concentration camp in the Owens Valley, Southern California (about 230 miles northeast of Los Angeles), during World War II. At elevation 4,000 feet, at the base of Mt. Whitney, it was extremely cold and dusty. Each of the ten camps was intended to be self-sufficient.

Note 2. This is the earliest document seen (June 2007) that mentions large scale production of soyfoods (soy sauce) in any Japanese internment camp during World War II.

950. O’Harra, Michaela 1943. Japs in Arizona camp create community in desert setting. *Arizona Daily Star*. Oct. 17. p. 1.

• **Summary:** The section titled “Food preparation” states about 1,350 evacuees prepared food for their people in the project’s mess hall. Rice is served twice daily. Most of the people, when questioned, say they don’t like the food. “They usually confess, however, a fondness for various pickled vegetables, pickled in salt rather than in vinegar, soy sauce and miso, a relish paste made of soy beans. These are being prepared now in the project.”

Note: Poston (also known as Colorado River) Relocation Center was the name of one of two Japanese internment camps in Arizona during World War II. Each of the ten camps was intended to be self-sufficient. Built on the Colorado River Indian Reservation (over the objection of the Tribal Council), it was the largest of the 10 internment camps operated by the War Relocation Authority (WRA), and the 4th largest community in Arizona. It was located in the southwest corner of Arizona.

951. Huebscher, Ad. 1943. *Die Soja: Ihre Kultur, Verwendung, Zukunft!* [Soya: Its culture, use, and future!]. Grenchen, Switzerland: Niederhaeuser. Published by the author. 52 p. Undated. Illust. with 18 line drawings. [Ger]

• **Summary:** Contents: Foreword. Soya—The dispenser of work and bread. Botanical description of the soybean. Cultivation and manuring of the fields. Seeds and sowing. Nutritional composition and food value. Harvest, storage and use as silage. Enemies of the soybean. Economic significance of the soybean. Preparation of the soybean for use as food. Soya minestra (an Italian dish, also consumed in Switzerland). Soya beefsteak. Soya cutlets. Tomatoes stuffed with soya. Soy sauces—Japanese shoya [sic, shoyu] and Shimoso. Vegetable cheese [tofu]. Miso-cheese. Natto cheese. Soy coffee. Soy flour (Soja-Mehle, made by Morga S.A. or Ennat-Kappel, Switzerland). Soya cakes. Soya salad. Green vegetable soybeans (*Soja-Gruengemuese*). Soya Muesli. Soya Kasha (*Soja-Kascha*, the newest food for soldiers, athletes, and heavy laborers. It consists of a mixture of soy flakes, rolled oats, corn flakes, sugar, salt, and powdered milk). Soymilk (The first soymilk in Europe was made in Paris in 1882). Soy yogurt (*Soja-Yoghurt*). Soy

cream for the tropics (*Soja-Crème-Tropenmilch*). Address: Dr. and veterinarian, villa Bel-Air, Corseaux (Vaud), Switzerland.

952. Mathews, R.H. comp. 1943. A Chinese-English dictionary. Revised. American ed. Cambridge, Massachusetts: Harvard Univ. Press. Published for the Harvard-Yenching Institute. xxiv + 1226 p. Index. 26 cm. [3 ref]

• **Summary:** This excellent dictionary, which romanizes Chinese words using the Wade-Giles system and arranged them in alphabetical order by sound, is a condensed version of the multi-volume dictionary by Giles, and a revised version of Mathews’ 1931 dictionary. Soy-related characters include:

Chiang (No. 661, p. 90)—Soy [sauce], pickled vegetables, pickled bean curd (*chiang toufu*) [fermented tofu].

Fu (No. 1930, p. 285)—Tofu.

Ju (No. 3144, p. 473)—Milk. The breasts; a teat, a nipple. To suckle. *Fuju* (“rotten milk”)—A milky preparation from beans. [Note: Probably fermented tofu].

Shih (No. 5805, p. 813)—Cantonese soy [sauce], salted beans [soy nuggets] eaten with rice, gruel, etc.

Tou (No. 6478, p. 939-40)—See No. 6481.

Tou (No. 6481, p. 940)—Beans, oil expressed from beans, young bean plants, bean stalks, bean flour, bean curd, dried cakes of bean curd usually flavored with soy, underlings = bean curd officials, soft hearted, bean sprouts [mung]—used as a vegetable, bean pods, soy [sauce], bean-cake, four kinds of soya beans (ta-tou, hei-tofu, huang-tou), (*Glycine hispida*).

Note: At Mao (No. 4357, p. 614, meaning “hair”) there is no entry for *Mao tou* = “green vegetable soybeans.” Address: China Inland Mission, Shanghai.

953. Nishino, Shoji. 1943. *Shôyu miso shokusu kikaku bunsekihô* [Methods of analyzing the standards of shoyu, miso and vinegar]. Osaka: Konno Shoten Shupan-bu. 109 p. 22 cm. [Jap]*

Address: Japan.

954. *Topaz Times (Topaz Internment Camp, Utah)*. 1944. Japanese Red Cross sends shoyu, miso. Jan. 29. p. 1.

• **Summary:** “Three hundred sixty barrels of shoyu and 1000 pounds of miso were received from the Japanese Red Cross, it was learned today. The foodstuffs, which arrived on the exchange ship, Cripsholm, last month, were relayed here from the Missoula Internment Camp in Montana.

“The community council is discussing plans for distributing the foodstuffs to the residents.”

955. Barthélemy, M. 1944. Contribution à l’étude du soya en France [Contribution to the study of soya in France].

Clermont-Ferrand, France: Jean de Bussac. 91 p. June 20. Based on his thesis, Strasbourg Univ., Faculty of Pharmacy. [34 ref. Fre]

• **Summary:** This is a published thesis, presented to the Faculty of Pharmacy at Strasbourg. Contents: Introduction. Part I: The cultivation of soybeans. 1. History of cultivation (its origin and importance). 2. Botanical characteristics. 3. Soybean cultivation in detail. 4. Conclusions. Part II: Chemical composition of soybean seeds. Proteins, lipids, oil and lecithin, carbohydrates (*glucides*), minerals, diastases, vitamins, sterols–soyasterol.

Part III: Utilization of soya as a food and in industry. 1. As food (nutritional value, whole soybeans, soy sprouts, roasted soybeans, soy coffee, condiments liquid and solid, soymilk, Li Yu Ying, products derived from soymilk {kefir, yogurt, tofu}, shoyu, miso, natto, soy flour, soy confections, recipes and formulas). 2. In industry: Oil, lecithin, cake. 3. Other uses of the plant.

Part IV: Laboratory work. 1. In human nutrition. 2. Animal feeds for the farm. 3. In industry. General conclusions. Address: Univ. of Strasbourg, France.

956. Matagrín, Am. 1944. Le soja: Culture et utilisations [Soya: Cultivation and utilization]. Paris: Gauthier-Villars. 72 p. Illust. No index. 28 cm. [Fre]

• **Summary:** Contents: Introduction: Why does soybean culture remain little known in France? 1. What is the soybean (*le Soya*)? Why should it be cultivated?: The plant and its varieties, the soybean (*la fève de soya*) and its general characteristics, alimentary interest in soya, agricultural interest in soya, industrial [non-food] interest in soya.

2. Soybean cultivation: The question of climate, choice of the variety to cultivate, choice and preparation of the land/soil, fertilizers for soya, soya in crop rotations, seeds, sowing, and seedlings, mixed cultures or intercropping, soybean vegetation and crop management, maturation, harvest, yield, and storage.

3. Use of the soya plant and its seeds: Soya in agriculture and livestock feeding, soya in human foods, recipes, industrial uses of soya, people and organizations connected with soya, contracts for growing soybeans in 1944. Table of contents.

The section on soya in human foods, based on the author's 5-6 years of personal experience, discusses, with recipes: green vegetable soybeans (*soya en légume vert*), whole dry soybeans (*soya en légume sec*), soy sprouts (*germes de soya*), fermented soy condiments (shoyu, miso, natto), soy flour (bread containing soy flour was made at Paris and even at Vichy in 1939), soymilk and tofu (*lait de soya et fromage végétal*), roasted soybeans and a coffee substitute (*soya grillé, substitut de café*), soy oil (*huile de soya*). Address: France; In 1946: Technical Consultant to Bureau Francais du Soja.

957. Yamazaki, Momiji. 1945. Tōa hakkō kagaku ronkō [East Asian studies/theses on fermentation chemistry]. Tokyo: Daiichi Shuppan K.K. han. 436 p. Published 20 March 1945. [160* ref. Jap]

• **Summary:** This remarkable work, published in a limited edition of 1,000 copies, was written by Dr. Yamazaki, a microbiologist, who graduated from the Department of Agricultural Chemistry, Tokyo University, in 1914. The book is a review of existing Asian literature on fermented foods, with a good bibliography. Dr. Yamazaki may have been employed by the laboratories of the Manchurian Railway.

Contents: Introduction: Preface, origin of alcoholic beverages, various alcoholic beverages of the world, summary. Chinese fermentation chemistry documents: Preface, Chinese ancient grains, Chinese ancient grain foods, Various types of Chinese-made koji, Various Chinese-made alcoholic beverages, summary. Japanese fermentation chemistry documents: Preface, Japanese land, inhabitants on Japanese land, Japanese New Stone Age culture, conclusions. Real papers: Japanese ancient foods, Various types of Japanese-made koji, Japanese-made various alcoholic beverages, summary. Korean fermentation chemistry documents: Preface, Korean produced grains, Various types of Korean-made koji, Various Korean-made alcoholic beverages, summary. Tables.

958. Dorsett, P.H.; Morse, W.J. 1945. Soys in the Orient. *Soybean Digest*. April. p. 10-12. Text of a letter written July 1930.

• **Summary:** Reprinted from: *Proceedings of the American Soybean Assoc.* 1930, p. 96-100. The article was originally titled "Soybeans in the Orient." One large photo shows Morse with several richly illustrated boxes of black miso [Hatcho miso]; smaller photos show abura-age (deep-fried tofu pouches), and tofu kasu (okara). Address: Dairen, Manchuria.

959. Shelledy, F.H. 1945. Japanese trade studies: Soybeans. *U.S. Tariff Commission, Special Industry Analysis* No. 13. 6 p. May. [3 ref]

• **Summary:** Contents: Foreword. Introduction and summary. Description and uses. Production. Imports. Post-war problems.

This "report is one of a number which were prepared during 1944 and 1945 for the Foreign Economic Administration..." Most of the data "were taken from official and semi-official Japanese sources." Errors and inconsistencies in these data have frequently been detected.

"Japan is not important as a world producer of soybeans. It is, however, normally the world's principal soybean importer. Its annual production during 1928-39 was only 10 to 14 million bushels. By comparison, the production in the

United States was 90 million bushels in 1939 and more than 190 million bushels in 1943 and 1944; the average annual production of soybean in Manchuria during the thirties was more than 150 million bushels annually.

“Prior to the present war Japan took most of the exportable surplus of Manchuria, the principal world exporter of soybeans, as well as substantial quantities from Korea, a country which produces almost twice as many soybeans as does Japan. During the 10 years 1928-1938, Japanese imports averaged 26 million bushels annually, approximately double its own production.”

“If an annual per capita consumption of 0.5 bushels [30 lb] of soybeans were to be maintained in Japan in the post-war period,” Japan would require a total supply of about 37 million bushels/year, based on a 1940 population of 73.1 million. An estimated 10-14 million bushels could be produced in Japan in the short term period after the war. The rest must be imported.

Uses of soybeans include miso, soy sauce or shoyu, and tofu. The main center of soybean production in Japan is the island of Hokkaido. The soybean is the principal oilseed imported into Japan.

Tables show: (1) Soybeans: Production, imports, exports, and apparent consumption, Japan Proper and Karafuto, 1928-39. Columns show: Production. Imports from Empire. Other imports. Total imports. Exports. Apparent consumption: Total and per capita. (2) Soybeans: Imports into Japan from principal sources, average 1928-32, annually 1933-39. The graph has two main parts: Quantity (1,000 bushels), and value (1,000 yen). Empire areas: Manchuria (incl. Kwantung), Korea, Formosa, total. Non-Empire areas. Grand total. Source: Monthly and annual returns of foreign trade of Japan, Korea, and Formosa. Address: U.S. Tariff Commission, Washington, DC.

960. Miller, Carey D. 1945. Thiamin content of Japanese soybean products. *J. of the American Dietetic Assoc.* 21(7):430-32. Aug. [10 ref]

• **Summary:** The approximate amount of thiamin retained in various soybean products is as follows: Raw soybeans, 100%. Soybeans pressure cooked for 60 minutes at 121°C, 26% (i.e., 74% of the thiamin is lost). Soybean “milk” (tonyu), 74%. Soybean curd residue (kirazu), 19%. Soybean curd (tofu), 18%. Tofu contains 54 mcg. thiamin per 100 gm. About 7% of the thiamin in tofu appears to be destroyed by the cooking process, about 20% remains in the residue (kirazu), and the remainder of the thiamin (almost 60%) is lost in the discarded liquid which drains off when the protein is precipitated and pressed. Aburage (a fried soybean curd) loss additional thiamin as a result of the cooking process. “Miso, made from cooked soybeans and fermented rice, is a relatively good source of thiamin,” containing about 130 mcg. per 100 gm. But since relatively small amounts are used, even by people who favor this

food, its contribution to the daily thiamin need is not great. Address: Nutrition Dep., Hawaii Agric. Exp. Station, Univ. of Hawaii, Honolulu.

961. Lautensach, Hermann. 1945. Korea: Eine Landeskunde auf Grund eigener Reisen und der Literatur [Korea: A geography based on the author's travels and literature]. Leipzig, Germany: K.F. Koehler Verlag. xv + 542 p. Illust. (black & white photos). Maps (part folding, part color). 24 cm. Series: Geographische Handbücher. [1038* ref. Ger] • **Summary:** A superb, scholarly work, with a huge bibliography, printed just as Germany was losing World War II.

Chapter 6, titled “The anthropogeographical character of ancient Korea” (p. 141+) contains extensive information about agriculture and food. Page 154: In wealthier sites, the farm buildings enclose a courtyard, to which an entrance gate gives access (Fig. 21e, p. 151). Some enclosures are so complete that a square courtyard results. In some corner or other of the courtyard stand the huge brown earthenware jars, in which soy sauce (*Sojabohnensosse*, jap. *shoyu*) is prepared and stored.

Page 176-77: In East Asia, after cereal grains, pulses / legumes are the next most important crop. In Korea, by far the most important is the soybean (*Sojabohne*, jap. *daitso* [*daizu*] = large bean) which makes few demands on the soil. Korea's climate is ideal for soybeans (Tanaka 1931, p. 18); it is even better than Manchuria's climate, because of the large amount of precipitation during the summer. Today, soybeans are an indispensable part of the various dry-field crop rotations. After planting of the paddies has finished, soybeans are planted on the ridges too; there they grow extremely well without being fertilized. Soybeans are grown throughout Korea, but least in the Kaema upland because of the warmth they require. In northern Korea, on dry fields, they are planted between the end of March and beginning of May. Toward the south, planting is delayed until the end of June. They are generally harvested in October, except in Chejudo, where they are not harvested until early November. Soybeans are the crop that is left standing the longest, and they are not harvested until their leaves have turned brown and started to fall.

Soybeans are used as a very nutritious food for both humans and horses. Also, cooked soybeans are used as a fertilizer for the rice paddies. Above all, though, the hot brown soy sauce (*Shoyusosse*), which is never lacking on any Korean or Japanese table, is made of them, using salt and pepper and a process of fermentation. Bean curd (*Käse*, jap. *tofu* [*tofu*]) and soybean paste (*Mus*, jap. *miso*) are also made of them.”

Page 180: The place of soybeans (*Soja*) in rotations, such as soya/hemp is mentioned. The winter crops consist of wheat, barley, or rye; the summer crops of soybeans, other beans or cotton. Page 181 mentions soybeans as a

summer crop. Page 196: Soybeans are planted on the bunds of the rice fields. Page 199. Those who farm in central Manchuria are likely to grow soybeans. Page 224: Soybeans are mentioned several times.

A fold-out map facing p. 400 shows the distribution of soybeans in Korea. They seem to be slightly more densely grown in the south than in the north.

Page 435: Soybean oil mills (*Sojabohnenmühlen*) are mentioned. Page 460: Discusses imports and exports of soybeans. The main beans exported from Korea to Japan are soybeans, amounting to a weight of 1.3 to 1.9 million dz. in 1939. Note: One dz (*doppelzentner*) = 100 kg. Exports to other countries was small. By comparison, Manchurian soybeans were exported to the northern harbors of Germany and England. In addition, a significant amount of Manchurian soybeans were imported to Korea (0.29 to 1.02 million dz.). Also, a significant quantity of soybean products made in Korea were exported to Japan (Soy oil up to 11,550 dz. and soybean cake up to 1.2 million dz.). Likewise, up to 3,210 dz of soy oil and up to 1.3 million dz of soya cake were imported to Manchuria from Korea.

Page 466-67: A comparison of soybean production in Korea and Japan is given. 85% of the imports of soy oil to Japan came from Korea.

Page 473. Soybeans are grown in the deep valleys of Korea.

Facing p. 144: A photo shows a man carrying a large, empty, pottery soy sauce jar on a rack on his back.

Hermann Lautensach lived 1886-1971. Korean place names are the old ones in the Japanese system. Address: PhD, Prof. of Geography at the University of Greifswald [northeastern Germany].

962. Löbbe, Henrique. 1945. *Cultura da soja no Brasil*. 7th ed. [Culture of soybeans in Brazil. 7th ed.]. Rio de Janeiro, Brazil: Directoria de estatistica da producao, Ministerio da Agricultura. 74 p. 2nd ed. was 1935. [Por] Address: Eng. Agronomo, Brazil.

963. Supreme Commander for the Allied Powers. 1946. *Summation-Non-military activities in Japan*. Tokyo: Kokusa-Shuppan Insatsusha, International Publishing and Printing Co. See p. 113. [Eng]*

• **Summary:** In the March/May issue (no. 6-8), page 113: “In Section 5, “Manufacturing,” a table titled “Bean paste ceiling price changes. Effective 10 February 1946 (yen/kan),” has 4 columns: Seller and product, Common, Best, New Price. The first product is “Rice or barley miso. 13.50. 14.50. 36.50.”

964. Stahel, Gerold. 1946. Foods from fermented soybeans as prepared in the Netherlands Indies. I. Taohoo, a cheese-like substance, and some other products. *J. of the New York Botanical Garden* 47(563):261-67. Nov.

• **Summary:** Contents: Introduction. Sprouts and milk from soybeans. Cheese-like products. How taohoo is made. Condiments made with *Aspergillus*.

In East Asia—as in Surinam—people have developed “means for overcoming the rather bitter taste of soybeans and their failure to cook soft. They have learned to ferment the soybeans with quick-growing fungi, thus making several palatable and wholesome foods.

“Most important of these foods are *taohoo* and *tempe*; also *taokoan*, a cheese made from *taohoo*; *taotjo*, a fermented paste-like condiment, and *ketjap*, which is soy sauce. Soybean milk is also made, but without a fungus, and sprouted soybeans are widely used by orientals.”

“In the Netherlands East Indies [later Indonesia] sprouted soybeans are called *tokolan* or *taogé*. They are one of the ingredients of every ‘rijst-tafel’ (rice table, or combination of rice dishes) and therefore are never lacking in the ‘passar’ (market). Even in our Paramaribo market *tokolan* is displayed every day.”

In China, soy milk is used in the same manner as cow’s milk. It is also consumed in the United States, though on a very limited scale. In the Netherlands East Indies, soy milk “is only slightly known as food, but it is produced in large quantities for the manufacturing of soy cheese, called *taohoo* or *tahoo*.”

The curd [tofu] “is either eaten fresh or baked in oil or lard. In China it is sometimes processed further into a kind of real cheese by impregnating the curd with turmeric and reducing the water content by heavier pressing. This cheese, called *taokoan* [Chinese: doufugan], has a yellow color and can be shipped abroad.”

“After *tempe* [made with *Rhizopus Oryzae*], *taohoo* is the most common form of soybean product eaten in the Netherlands East Indies. In China, it is the most important soy product. *Taohoo* is manufactured here in Surinam only on a very limited scale, by a single Chinese store-keeper close to the Paramaribo market-halls along the Surinam river. Twice daily, between 2 and 4 o’clock in the morning and again in the afternoon, he manufactures 11½ kilograms of *taohoo*, to be sold after 6 o’clock the next morning.” A detailed eyewitness description of the tofu-making process is then given.

Describes briefly how to make *taotjo* (a kind of paste) and *ketjap* (soy sauce) with *Aspergillus oryzae*, another fungus. *Taotjo* is not made in Surinam, but *ketjap* is. “To make *taotjo*, boiled soybeans are mixed with roasted meal of wheat or glutinous rice. The mass is wrapped in hibiscus leaves, which commonly harbor the *Aspergillus* fungus.” After 2-3 days the moldy mass is immersed in brine, where it is kept for several weeks. “Palm sugar is added at intervals. *Taotjo* must be made in the dry season, because every day it has to be brought outside into the sun and air for hours.” This dish is eaten in East Asia with the ‘rijst-tafel.’”

To make ketjap, soybean are boiled, cooled, then wrapped in hibiscus leaves—but without mixing in roasted meal. After fermenting for 2-3 days, the mass is immersed in brine, as with taotjo. Each day, for one to several months, it is exposed to the sun. A little palm sugar is added at intervals. Then the fluid is filtered off and the solid residue is cooked several times with fresh water to extract all the soluble material. “The fluid is then concentrated by slow boiling. Spices and other piquant materials are added, according to the *specialité de la maison*. These may include galangal, ginger, cloves, Jew’s ear fungus, and dried and ground fish and chicken meat.”

Photos show: (1) Chinese kitchen [shop] equipped with implements for tahoo manufacture, with hand-turned millstones, soybean mash flowing into cheesecloth bag hanging in wooden barrel, press, earthenware pot filled with brine for the “coagulation of the curd.” (2) Four pieces of fresh taohoo, four-fifths natural size. (2) Four pieces of freshly baked taohoo, four-fifths natural size.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word “taohoo” or “taokoan” to refer to tofu. Address: Agric. Exp. Station, Paramaribo, Surinam.

965. **Product Name:** Tofu, and miso.

Manufacturer’s Name: Aoki Tofu Co.

Manufacturer’s Address: Berkeley, California.

Date of Introduction: 1946.

New Product–Documentation: Leviton. 1983. Soyfoods. Summer. p. 35. “Profile: Azumaya Tofu Company.” Jack Mizono recalls that Aoki Tofu opened in Berkeley in 1946. The company made tofu and miso.

966. **Product Name:** Kanemasa Miso.

Manufacturer’s Name: Fujimoto Products & Co. (Fujimoto Shôkai).

Manufacturer’s Address: 302 S. 4th West, Salt Lake City, Utah.

Date of Introduction: 1946.

New Product–Documentation: Salt Lake City Directory. 1946. In Japanese: Fujimoto Shôkai. In English: Fujimoto Products & Co. (Mrs. Rae S. Fujimoto). Soy bean products. 302 S. 4th W. Her residence is at 343 N. 5th W. At same residence is Tsuya (a helper), Grace F. (sten), and Edward K. (whose wife is Rae S.), manager. 1949 Directory, same except that Grace F. is now office secretary. 1953 Directory. Fujimoto & Co. (Rae S. Fujimoto). Soy bean products. 302 S. 4th W. Edward K., manager. Rae S. Residence 343 N. 5th W. Note: Company is not listed in the 1944 Directory. 1945 directory is not on the shelf at Sutro Library, San Francisco.

Ad (¼ page) in Nichi-Bei Jiji Jushoroku [Japanese American Times Directory]. 1952, p. 461. The top 1/3 of this ad is in English: Fujimoto & Co., 302 So. 4th W. St., Salt Lake City, Utah. Phone: 4-8279. Japanese: Fujimoto

Shôkai. Their Japanese-style Kanemasa logo is shown. They sell Edo miso and koji. Directory entry p. 462, under “Stores.” English: Fujimoto Co.

Note: According to Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 234. The earliest know miso company in the continental USA was founded by Mr. Genpei Fujimoto, and began operation in 1917. In 1942 it was the largest miso company in the continental USA. During World War II, in about 1943-44, because of the Japanese evacuation, it was shut down and moved to 302 South Fourth West, Salt Lake City, Utah. It was reestablished in Salt Lake City after the war by the son of the founder, Edward Kanta Fujimoto, and his wife, Shizue.

967. Mogi, Masatoshi. 1946. Taigai miso [Making miso with nongrain koji]. Tokyo: Seikatsu-sha. 408 p. [Jap]*

• **Summary:** Discusses substitutes for miso raw materials. Descriptions of making miso koji using potatoes, chestnuts, buckwheat, millet, etc. No history. Note: Mogi was born in 1907. Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

968. Mogi, Masatoshi. 1946. Daitai miso [Miso substitutes (approximately miso)]. Tokyo: Seikatsu-sha. 407 p. [Jap]* Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

969. Horvath, A.A. 1947. Produits fermentés et antibiotiques au soja [Fermented products and antibiotics from the soybean]. *Revue Internationale du Soja* 7(41-42):79. July/Aug. Presented at the First European Soy Congress, 16 March 1947. [Fre] Address: Professor, Princeton Univ., Princeton, New Jersey.

970. Leonard, Warren H. 1947. Barley culture in Japan. *J. of the American Society of Agronomy* 39(8):643-58. Aug. [2 ref]

• **Summary:** Contents: Introduction. Geographical distribution. Regional types and varieties. General cultural practices. Cultural methods on upland fields. Culture on paddy fields. Diseases and insect pests. Utilization. General summary.

Barley, one of the most important crops grown in Japan, is used for both food and forage. Almost all barley grown in Japan is the common six-row barley, *Hordeum vulgare*, as in the United States. In Japan, most of the crop is spring barley, seeded in the fall. The two basic types are covered barley and naked barley; about 60% of the crop is naked barley (which threshes free from the glumes, as does common wheat) and 40% covered. During the period 1936-1940, the cultivated area devoted to barley was about 14% of Japan’s arable land area. When the covered and naked types are included together, barley ranks second in acreage among all Japan’s cultivated crops, being exceeded only by

rice, which occupies 53% of the cultivated area. Barley is grown throughout Japan.

Table 6, titled "Uses of barley in Japan, 1942" gives the number of bushels and percentage for covered barley / naked barley for the following uses: Meal (eating use) 64.42% / 75.88%. Fodder or feed 22.83% / 14.36%. Seed 2.96% / 3.39%. Bean paste [miso] and soysauce 2.99% (1.032 million bu) / 6.03% (1.826 million bu). Beer 5.00% / -. Other uses (candy, medicine, yeast, etc.) 1.80% / 0.34%.

Note that both covered barley and naked barley are used to make miso and soysauce, but about 77% more naked barley is used in terms of bushels per year.

Barley is generally preferred to wheat for cooking with rice; it is pearled when used in this manner. Barley straw is used for straw braids, roof-thatching, litter, and mulches for vegetables.

Covered barley is grown almost exclusively in the United States, primarily for use as livestock feed and for malting. Address: Prof. of Agronomy, Colorado A. and M. College, Ft. Collins, Colorado.

971. Seiler, Hans G. 1947. Soja in der japanischen Kueche [Soya in Japanese cookery]. In: Dr. Wolfgang von Schuh, ed. 1947. Bericht Ueber die Erste Deutsche Soja-Tagung in Weissenburg, Bayern, 28-31 Aug. 1947. Heilsbronn bei Ansbach, Mittelfranken: Arbeitskreis fuer Landwirtschaft, Deutsche Arbeitsgemeinschaft Soja. 24 p. See p. 10-11. [Ger]

Address: Studienrat and Dr., Erlangen.

972. Rodrigo, P.A. 1947. Soybean culture in the Philippines. *Philippine J. of Agriculture* 13(1):1-22 + 5 plates. Third quarter. Summarized in Soybean Digest, May 1948, p. 41. [14 ref. Eng]

• **Summary:** Contents: Introduction. Description and history. Climatic and soil requirements. Varieties. Propagation. Preparation of the soil. Fertilizers and lime. Inoculation. Planting. Care of the crop. Harvesting and production: For day, for seed. Cost of production. Uses of soybeans. Diseases. "In the big cities in the Islands, many of the soybean products like soy sauce or toyo, tokua, tajuri, tojo [soymilk curds], miso, etc. are becoming more popularly used by the Filipinos, and will be more so as their nutritive values become more fully realized. Already, in some sections of the country where soybean is being grown, the seed is used either as a green or as a dry vegetable. The dried bean is roasted and is eaten offhand or is used in adulterating coffee, and the bean in the dough stage is boiled and eaten like peanut" (p. 2).

Table 1 shows annual imports (in kg) of soybeans and soybean products into the Philippines from 1929 to 1940, including dried beans, soy sauces, soybean meal, tausi (soy nuggets, salted), paste (miso), and total. Table 2 shows the value of these items (in pesos). In 1940 the imports of

greatest value were soy sauces (120,346 pesos), soybean meal (50,682), and tausi (20,280).

"In the Philippines, while the plant has been under cultivation since the Spanish regime [1571-1898], it has not gained much headway due mainly to the lack of a variety suitable for commercial planting, and perhaps due to want of interest among farmers" (p. 4-5). The Philippine Bureau of Plant Industry has, to date, introduced more than 200 soybean varieties to the Philippines from the USA, China, Japan, Hawaii, Java, and India, but it presently recommends only a few varieties for commercial planting. These include Ami, which has long been cultivated there and is well adapted to the varied soil and climatic conditions.

Based on the results of a number of years' trials in different regions of the Islands, the following varieties have been found to be productive: Yellow Biloxi Hybrid (introduced from Hawaii in 1936), Mis 28 E.B. Str. 3910 (introduced from India in 1937), Mis 33 Dixi (introduced from India in 1937), Head Green (introduced from the USA in 1935), and American Black. All of these varieties are good for May and June planting, and all but Yellow Biloxi Hybrid are good for September to December planting (dry season).

"In the Philippines, the green but fully developed pods are harvested, and the seed is cooked and eaten in practically the same way as lima bean or patani... In Lipa, Batangas, soybean in the dough stage is boiled in the pod and sold and eaten offhand" like peanuts. The more common soy products made in the Philippines are soy sauce or *toyo*, tokua [tofu], tausi [soy nuggets], and miso. "Soybean milk is being manufactured by the Bureau of Plant Industry in a limited scale and a big modern firm has started putting soybean milk and other products in the local markets" (p. 15-16).

Note: This is the earliest English-language document seen (Oct. 2008) that uses the word *tausi* to refer to soy nuggets. Address: Chief, Horticulture Research Section, Bureau of Plant Industry.

973. **Product Name:** Fuji Koji Miso.

Manufacturer's Name: Fuji Sake Brewing Company, Ltd. (Fuji Shuzo K.K.).

Manufacturer's Address: 539 Cooke St., Honolulu, Oahu, Hawaii.

Date of Introduction: 1947.

New Product-Documentation: Not listed in the index under miso in any Honolulu city directory from 1905 to 1966; Hawaii Directory of Manufacturers. 1953. p. 10. Miso (Soy bean paste). Fuji Sake Brewing Company, Ltd., 539 Cooke St. "Fuji." Nihei. 1978. Nippon Jozo Kyokai Zasshi. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." States that Fuji Shuzo K.K. made Fuji Koji Miso. Address: 539 Cooke St., Honolulu. No longer in business. They started making sake in 1948 and closed the business in

about 1963. Wm. Higa. 1980. History of Miso Companies in Hawaii; Shurtleff & Aoyagi. 1983. The Book of Miso. 2nd ed. p. 234. The company, Fujii Miso Co., was founded ca. 1941-1954. No longer in business. Letter from Takao Nihei. 1988. July 19. The product was introduced in about 1947. The company closed in 1963.

974. **Product Name:** Maru-Hi Miso [Mellow White, or Red], and Shoyu.

Manufacturer's Name: Hawaiian Miso & Soy Co.

Manufacturer's Address: 1714 Mary St., Honolulu, Oahu, HI 96819. Phone: 87488. Later 808-841-7354.

Date of Introduction: 1947.

New Product–Documentation: Directory of the City and County of Honolulu. 1949. p. 354. Hawaiian Miso and Soy Co. (George T. and Henry T. Higa; Doris K. and Seiboku Kiyabu), Manufacturers of Miso and Soy. 1714 Mary. Tel. 87488. Hawaii Directory of Manufacturers. 1953. p. 10. Miso (Soy bean paste). Hawaiian Miso & Soy Company, 1714 Mary St. Honolulu City Directory. 1956. The company is the only miso manufacturer listed for this year. Nihei. 1978. Nippon Jozo Kyokai Zasshi. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." States that Hawaiian Miso Shoyu Kaisha was founded by William Higa. Gives address. No founding date given. Still in business. Wm. Higa. 1980. History of Miso Companies in Hawaii; Shurtleff & Aoyagi. 1983. The Book of Miso. 2nd ed. p. 234, 240, 255. The company was founded in 1947 by George Higa Sr., William Higa, George Higa Jr., Hisako Higa, and Alvin Higa. They left American Hawaiian Soy Co. By the 1980s HMS was Hawaii's largest miso manufacturer, and the second largest in the USA with 512 tonnes/year in 1983. Ad in Hawaii Herald. 1983. Oct. 7. p. 5.

975. **Product Name:** Kokusui Miso.

Manufacturer's Name: Nichibeï Shuzo Kabushiki Kaisha, Ltd. (Japanese-American Sake Brewery).

Manufacturer's Address: 1965 Kamehameha Ave., Hilo, Island of Hawaii.

Date of Introduction: 1947.

New Product–Documentation: Hawaii Directory of Manufacturers. 1953. p. 10. Miso (Soy bean paste). Nichibeï Shuzo Kabushiki Kaisha, Ltd., 1965 Kamehameha Ave., Hilo, Hawaii. "Kokusui."

Nihei. 1978. Nippon Jozo Kyokai Zasshi. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." States that Nichibeï Shuzo (Sake Brewery) K.K. makes Kokusui Miso. Address: Waiakea, Hilo, Hawaii. No longer in business. They started making sake in 1948 and closed the business in 1956. Wm. Higa. 1980. History of Miso Companies in Hawaii. Gives company name as Kokusui Miso Factory; No longer in business. Letter from Takao Nihei. 1988. July 19. The manufacturer was Nichibeï

Shuzo, not Kokusui Miso Factory. The product was launched in 1947. They closed in 1956. The company president was Kazuo Miyazaki.

976. Cole, A.B. ed. 1947. A scientist with Perry in Japan: The Journal of Dr. James Morrow. Chapel Hill, NC: University of North Carolina Press. 307 p.

• **Summary:** For background on Commodore Perry and the opening of Japan, see Fairbank, Reischauer, and Craig. 1973. *East Asia: Tradition and Transformation*, p. 327; a summary is given in this bibliography.

In 1854, Dr. James Morrow of South Carolina, agriculturist with the U.S. Perry expedition to Japan, East Asia, spent 18 weeks in Japan. He took seeds, plants, and scientific information from the USA to distribute as gifts for the shogun Tokugawa Iesada, and was instructed to collect the same and make observations, which he recorded in this journal. He explored the Great Liu Ch'iu (Okinawa), and sampled fried bean sprouts (we are not told what type [probably mung bean]) and soy sauce in "a little sauce of bean soy" in Canton (p. 48).

In April 1854 in Kanagawa, Japan, he "put in small papers more than two hundred papers of seed, and sent one of each kind to Mr. Allen, gardener of New York,—to Mr. Landreth, gardener in Philadelphia,*" (p. 155) (Endnote 89, p. 286: *"Probably Richard L. Allen, formerly of A.B. Allen & Co, dealers in agricultural implements in New York, and probably David Landreth of David Landreth & Son {David & Oliver Landreth & Thomas F. O'Neil} in Philadelphia."), "also to Mr. Buist, gardener in Philadelphia,—to Henry Gourdin, Esq., of Charleston,—and to Gen. Wade Hampton, of Columbia, South Carolina [a planter and congressman]. I sent the large Japanese papers to the Department of the Interior at Washington [DC].

Appendix G (p. 228) shows a list of seed bought in Simoda [Shimoda] Bay in large quantities in April 1853 (1854?) [sic, probably 1854]. Included are "Small red Beans (soya) [azuki?]," and "Black beans (another variety)."

Appendix H (p. 228-30) contains a "List of seed presented to me [Morrow] by the Japanese gentleman who was the principal in making the treaty & collected by himself as he said with great pains. These were principally from Yeddo [Edo, today's Tokyo] and Conagowa" [Kanagawa; an important port in 1854, a town north of Yokohama and a prefecture whose capital is Yokohama]. Included in the list of 56 plants are "Dolichos pease (green), Red Beans, Black pease, Red pea—Dolichos, and Small red Bean (soya) [azuki?]."

A photo (frontispiece) facing the title page shows Dr. James Morrow. Note: Morrow's soybean seeds were sent to the Commissioner of Patents, whence they were distributed to farmers, and planted from 1855 on.

977. Fritzsche, Curt. 1947. *Die Sojabohne: Anbau und Verwertung* [The soybean: Cultivation and utilization]. Lueneburg [near Hamburg], Germany: Metta Kinau Verlag Nachf. 48 p. Series: Kurzschriften fuer Landwirtschaft, Gartenbau und Siedlung. 11. [Ger]

• **Summary:** Contents: Introduction. 1. Origin of the soybean (in Asia and Europe, including the work of Haberlandt in central Europe, plus instructions for making Chinese-style chiang, soy sauce, and tofu). 2. Description of the soybean. 3. The culture of the soybean. 4. Diseases and enemies of the soybean. 5. The economic significance of the soybean: As a food, as an oilseed, and in applied science/industry. 6. Advantages of the soybean: For the farmer, for the economy. 7. Effect of soybean culture on the national diet. 8. Tested recipes for the household. Conclusion. Address: Friedersdorf & Berlin.

978. Liang Shih-chiu. ed. 1947? *A new practical Chinese-English dictionary*. The Far East Book Co. Ltd. See p. 1037-38. [Eng; Chi]

• **Summary:** Gives the Chinese characters and their pronunciation for the following soy-related terms: Soybean cake; bean curd; a semi-transparent film formed on the surface of soybean milk; a store where bean curd is made for sale; spiced and dried bean curd; soybean cheese; legume; (said of girls) in teens; the pods of beans or peas; soybean milk; fermented beans in paste form; residue of soybeans in making bean curd; fermented and seasoned soybeans; pisolite [bean + stone]; legumin; bean sprouts as a vegetable; soybean oil. Address: Editor in Chief.

979. Lockwood, Lewis B. 1948. Re: Request for information available on the production of foods by fermentation, particularly from soybeans: Soya sauce, miso paste, and soya cheese. Letter to A.K. Smith in Shanghai, China, April 1. 2 p. typewritten.

• **Summary:** Attached is Smith's 7-page response from the Metropole Hotel, Shanghai, China, dated 7 June 1948. He gives details on the processes for making miso, katsuobushi, and soy sauce. "The questions on soy sauce were answered largely by Mr. Kung and Mr. C.T. Siao of the National Bureau of Industrial Research, 1313 Szechum Road, N. Shanghai, China. The questions on miso were answered by Quo Sih Gwan, a Chinese worker that has spent a number of years in Japan. No one around Shanghai knows anything about miso." Address: NRRL, Peoria, Illinois.

980. Morse, W.J. 1948. Soybeans yesterday and today. *Foreign Agriculture* 12(5):91-95. May. Summarized in *Soybean Digest*, June 1948, p. 32.

• **Summary:** A good overview of soybeans and their history in China, Manchuria, Korea, and Japan (the principal regions of world soybean production), plus thoughts on their relatively recent introduction to the Western world.

"In China, the soybean is one of the leading and most ancient of crops, ranking fifth in extent of culture and occupying about 9% of the total cultivated area. Although grown everywhere in China, about 60% of the soybean acreage and production is confined largely to 3 northern Provinces, Shantung, Kiangsu, and Honan. China consumes practically all its production, estimates indicating 55% for food, 27% for oil extraction and other purposes, 10% for stock feed, and 8% of the total cultivated area of Manchuria and is a dominating factor in the life of that country. As a cash crop, it provides fully half the total volume of freight handled by Manchurian railroads. Estimates have indicated that from one-third to two-thirds of the production of soybeans was exported; 15 to 20% utilized for food, feed, and planting; and the remainder processed for oil and oil meal.

"Korea occupies third place among the soybean-producing countries of Asia. Acreage and production are confined largely to the central and northern areas, because southern Korea, growing chiefly cotton and rice, seems less well adapted to soybean-seed production. The entire seed production is used for food, stock feed, export, and planting, none being used for oil extraction.

"Japan, although a large producer of soybeans, has consumed all its own production and imported large quantities of seed from Manchuria and Korea. Since World War I, production of soybeans in Japan has decreased to some extent, more emphasis being placed on the greater production of rice. The proportion of soybeans used by Japan for various purposes was: Miso (soybean-rice fermented paste), 22%; soy sauce, 22%; oil and oil cake, 21.5%; bean curd, 15.5%; confections, 7.2%; forage, 6.2%; green manure, 2.5%; seed, 1.8%; green vegetable beans, 0.8%; and miscellaneous 0.5%.

"In the Soviet Far East the soybean is said to be one of the chief industrial crops and in some districts to constitute 20% of the cultivated area. Acreage and production have increased markedly since 1926, especially in the Khabarovsk territory.

"Previous to 1935 soybean oil in the United States was utilized chiefly in soap, paint, and varnish. Since that time, however, 70 to 85% of the soybean-oil supply has been used in the food industries... The soybean has become one of the most valuable, if not the most valuable, of China's gifts to the Western World."

Photos show: (1) Manchurian soybean in bags being loaded on a freighter at the Dairen wharves for shipment to European oil mills. (2) Two horses pulling a plow, and a 2nd man planting soybeans on ridged rows in Manchuria. (3) Soybean plants growing along the edges of rice paddies, as is common in oriental countries; the green beans will be used for home consumption. (4) Two Korean men threshing soybean plants in a courtyard with bamboo flails. "In Korea, as well as in many other oriental countries, bamboo flails

are used in threshing soybeans.” (5) A man with a sickle in a field of dried soybean plants. “Soybeans are harvested by hand in all the soybean-producing countries of the Orient.” (6) A combine harvesting soybeans in the USA. It has “been one of the important factors in the economic production of soybeans in the United States.” (7) “General view of a Chinese oil-mill yard in Manchuria, showing mill, storage of soybeans in osier bins, and steel tanks.” Address: Principal Agronomist, USDA Div. of Forage Crops and Diseases, BPI [Bureau of Plant Industry], SAE [Soils and Agricultural Engineering], ARA, Beltsville, Maryland.

981. Smith, A.K. 1948. Manufacturing soya-paste in Peiping No. 2 plant (China). Unpublished manuscript, written in China. 1 p. June 18.

• **Summary:** To make soya-paste: Boil soya beans. Mix in the following ratio: 10 kg wheat flour to 15 kg soya beans. Pulverize the mixture, then ferment for 20 days. Put into crockeries [earthenware crocks] in an open field and mix in salt-water, using either (a) strong salt water: 30 kg containing 8 kg salt to 15 kg of substance, or (b) weak salt water: 40 kg containing 8 kg salt to 15 kg of substance. Expose to the sun-shine for 3 months to quicken the finishing process. If it rains during this time, cover the crocks. Stir the contents of the crocks every day. After 3 months, the soya-paste will be ready for sale. Thus the whole process takes about 4 months. The product is typically made during the summer. This shop makes 150,000 kg (300,000 *chin*) of soya-paste per year. There are nearly 100 soya-paste manufacturers in Peking. Soya beans with thin husks [seed coats] are better than those with thick for making this paste. Soya beans grown in the village of P’ang-ku-chuang, near Peking, are preferred. Three samples are enclosed.

Note 1. This Chinese soya-paste is different from Japanese miso in many ways: (1) It is made with wheat flour, rather than rice or barley. (2) The koji is made with soybeans coated with wheat flour. (3) The fermentation takes place outdoors, during the summer, in earthenware crocks.

Note 2. This is the earliest English-language document seen (March 2009) that uses the term “soya-paste” to refer to miso. Address: Traveling in China; Normally at NRRL, Peoria, Illinois.

982. Smith, Allan K. 1948. Manufacturing of soya-sauce. Peiping, China. 1 p. June 18. Unpublished typescript.

• **Summary:** Part one, titled “Method of manufacture of Soya-sauce,” describes nine steps used at Peiping No. 2 plant. To begin: Roast separately, 150 kg soya beans and 100 kg wheat. Mix and ferment for one week. Then mix with salt water, put in outdoor “crockeries,” and allow to stand for months. “However, the longer the better. The colour and taste of the sauce become better in sunshine than

indoors.” Stir daily, filter out the liquid when done, and boil. Yields 500 kg of soya-sauce. “As the condiment the licorice plant is used to sweeten the sauce. (Sugar is too expensive).”

“(1) Nearly 400 soya-sauce manufacturers in Peiping. (2) The manufacturing shop we visited is making soya-sauce and soya-paste at the same time. (3) This shop has the history of 40 years. (4) Besides soya beans and wheat, the following are used as materials for making soya-sauce: barley, soya cake and wheat bran. Sample No. 18. is soy sauce taken from this plant.” Address: Peiping, China.

983. Smith, Allan K. 1948. Re: Visits to plants in China making soy sauce, soy paste, and soy cheese. Letter to Drs. K.B. Raper and L.B. Lockwood, Northern Regional Research Laboratory, Peoria, Illinois, June 23. 1 p. Typed, without signature (carbon copy). [Eng]

• **Summary:** “I am enclosing further information on soy sauce and soy paste processing. The samples listed by numbers on the descriptions will eventually reach you I hope. In visiting this plant I had two interpreters.”

Note: This is the earliest English-language document seen (March 2009) that uses the term “soy paste” to refer to miso or to Chinese-style miso.

“I have visited two other soy sauce plants but am not reporting on them at this time. One of these is the Peiping Municipal Soy Sauce Plant which operates much like the pilot plant in Shanghai. I have also visited a sauce plant that claims to have been operating for more than 400 years in the same family and a soy cheese [fermented tofu] plant that has been operated by the same family since the latter part of the Ming Dynasty [mid-1600s]. I doubt if they have changed much in all that time. All of the samples will be in the mails soon... I may have to take some of them back to Shanghai to get them started.” Address: Hotel Wagon Lets, Peiping, China.

984. Smith, A.K. 1948. Re: Making soy sauce and soy paste in China, incl. samples. Letter to Drs. Kenneth Raper and Louis Lockwood, Northern Regional Laboratory, Peoria, Illinois, June 23. 1 p. Address: Traveling: At Hotel Wagon Lets [Lits], Peiping, China; Normally at NRRL, Peoria, Illinois.

985. Nichi-Bei Jiji Shinbunsha / Nichi Bei Times. 1948-1971. Nichibei jiji jûshoroku [Japanese American directory]. San Francisco, California: Nichi-Bei Shinbunsha. 500+ p. 22 cm. [Eng; Jap]*

• **Summary:** Note: the 1948 directory is in the 1948 Evacuation Resettlement Report. Address: Ellis Street, San Francisco, California.

986. **Product Name:** Miso, and Shoyu.

Manufacturer's Name: Honolulu Miso & Shoyu Factory (Honoruru Miso Shoyu Seizo-gaisha).

Manufacturer's Address: 405d Buckle Lane, Honolulu, Oahu, Hawaii. Phone: 66254.

Date of Introduction: 1948.

New Product–Documentation: Directory of the City and County of Honolulu. 1947-48. p. 392. Honolulu Miso & Shoyu Factory (Shigeo Yamada). Wholesale Miso & Shoyu. 405d Buckle Lane. Tel. 66254. Same in 1955 Directory.

Note: (1) Shigeo Yamada was apparently making miso on Maui by 1935. (2) This is the only miso company in Honolulu listed in the early 1960s. The index category disappears in the 1961-62 directory. Hawaii Directory of Manufacturers. 1953. p. 10. Miso (Soy bean paste). Honolulu Miso and Shoyu Factory. 405 Buckle lane.

Nihei. 1978. Nippon Jozo Kyokai Zasshi. 73(7):542-49. "Hawaii ni okeru Nihon-shu, miso, shoyu no rekishi." States that Honolulu Miso, Shoyu Seizo K.K. was founded by Mr. Shigeo Yamada. Address: 405 Ruckle, Honolulu. No longer in business. Wm. Higa. 1980. History of Miso Companies in Hawaii; Shurtleff & Aoyagi. 1983. The Book of Miso. 2nd ed. p. 234. The company was founded ca. 1942-1950 by Mr. Shigeo Yamada. No longer in business.

987. Koens, A.J. 1948. Peulgewassen [Leguminous crops]. In: C.J.J. van Hall and C. van de Koppel, eds. 1948. De Landbouw in de Indische Archipel [Agriculture in the Indonesian Archipelago]. 'S-Gravenhage: N.V. Uitgeverij W. van Hoeve. Vol. IIA. 905 p. See p. 241-42, 258-274, 473. In collaboration with G.G. Bolhuis. [79 ref. Dut]

• **Summary:** Excellent bibliography.

988. Smith, A.K. 1948. Microorganisms collected in China, Japan, and Korea. 7 p. Unpublished typescript.

• **Summary:** Dr. Smith collected 100 samples in Shanghai (58 samples), Nanking (13), Hangchow, Canton, Tokyo, Noda (near Tokyo, Japan), Korea (7).

989. Smith, Allan K. 1949. Oriental use of soybeans as food: Notes on Oriental farming practices. *Soybean Digest*. March. p. 26-28, 30, 32, 34.

• **Summary:** Contents: II. China. Soy sauce in China. Sweet flour paste–Tien Mien Chang [Chiang]. Soy or vegetable milk (incl. Willis Miller, yuba). Soybean curd or tofu (incl. use in Buddhist restaurants to look like meat, poultry, or fish dishes).

Soybean cheese [fermented tofu]. Fen-t'iao from mung beans (vermicelli). Fermented soybeans [soy nuggets] (made from small black soybeans). Vinegar fermentation process. Address: Northern Regional Research Lab., Peoria, Illinois.

990. Smith, Allan K. 1949. Oriental uses of soybeans as food: With attention to fermented products. Notes on

Oriental farming practices. *Soybean Digest*. May. p. 24-26, 28, 30.

• **Summary:** Contents: IV. Japan: Introduction. Production of miso. Soy sauce in Japan. Monosodium glutamate. Trends in soy sauce production.

"The Kikkoman Shoyu Co. Ltd. was founded in 1764. This is the largest soy sauce plant in Japan and probably the largest in the world for making a fermented type sauce. The annual shoyu production at Noda has been as much as 23 million gallons, consuming 30,000 tonnes (11 million bushels) of soybeans, 27,000 tonnes of wheat, and 29,000 tonnes of salt. The Noda city factory includes 8 brewing plants, 1 barreling plant, 6 auxiliary plants for the construction of barrels and other materials used in their process, and a research laboratory with a staff of more than 30 workers. The factories of Noda city are spread over 2,333 acres of land... The koji is made in wooden trays about 14 by 24 by 4 inches deep. There are 1,500 cement fermenting tanks in one plant. For a good grade of soy sauce, the mash is fermented for 8-12 months. But owing to the current pressing need for the sauce, the fermenting period is now often shortened to 3 months." Address: Northern Regional Research Lab., Peoria, Illinois.

991. Smith, Allan K. 1949. Oriental methods of using soybeans as food: With special attention to fermented products. Notes on Oriental farming practices. *USDA Bureau of Agricultural and Industrial Chemistry*. AIC-234. June. 40 p.

• **Summary:** Page 1 states: "The text of this bulletin, with slight revisions, is as it appeared serially in *The Soybean Digest*, issues of February through June, 1949, although many additional photos appear herein. It is processed with the publisher's permission." Note: An enlarged 65 page edition was issued in July 1961.

Photos show: (1) Nine people in a field cultivating soybean with hoes near Nanking, China. All of these workers but one are women. July 1948. (2) "The three-man shovel, Korean version of the turning plow. The motive power is supplied by the man holding the ropes." (3) A man and donkey threshing wheat with a stone roller. (4) A water buffalo and man pumping water from the rice fields. All parts of the pump and elevator are made of wood. Near Nanking, China, July 1948. (5) Windmill used for pumping water. The sails or vanes are mats woven from grass. (6) Children with baskets of soybean sprouts and inflated Chinese national currency in the market place at Canton, China. Aug. 1948. (7) Soybean milk for sale on the streets of Canton, China. Aug. 1948. It is in bottles, carried using a shoulder pole. (8) A wedge press for oilseed operations at Canton, China. Preformed disks of the flaked or ground meal are inserted in the slot and turned clockwise in the hollow log; pressure is applied with wooden wedges. July 1948. (9) Equipment for steaming soybeans preparatory to

making soy sauce. Steam is passed upward through the wooden tanks from a boiler beneath. Peiping, China. 1948. (10) Soy sauce preparation. Steamed soybeans are placed in woven baskets or trays for 3 to 7 days to permit the growth of the mold *Aspergillus oryzae*. Nanking, China. July 1948. (11) Many earthenware jars for soy sauce production in a courtyard surrounded by houses. "Following the growth of a thick mold on the soybeans, they are mixed with parched and cracked wheat and placed with salt solution in earthenware jars for fermentation, which lasts 3 months to 2 years. Soy paste [chiang] is fermented in a similar manner but it contains less water and the fermentation period is about 3 months. Shanghai, China. Aug. 1948." (12) "Soybean curd and vegetables displayed for sale in market place, Seoul, Korea. Aug. 1948." (13) Squares of soybean curd covered with white mold on round, woven bamboo trays. "This is the first step in making soybean cheese. Canton, China, Aug. 1948." (14) Two rows of large hydraulic presses in the mill of the China Vegetable Oil Company, Shanghai. June 1948. (15) Men loading round, hydraulic-pressed soybean cakes onto a truck, on the Bund. Shanghai, July 1948. (16) Men and an ox preparing a seed bed at a Japanese agricultural experiment station near Tokyo. 1948. (17) "A miso plant in Tokyo. The large tubs [vats] in foreground are used for the fermentation of miso. A part of this plant was destroyed by bombs during the war. Aug. 1948." (18) Three men standing by presses destroyed during bombing raids over Tokyo. These presses formerly were used for filtering monosodium glutamate. July 1948. (19) Many stacked wooden tubs of ajinomoto (monosodium glutamate) ready for shipment at a plant located between Tokyo and Yokohama, Japan. Aug. 1948. This plant had a maximum production of 7.5 million pounds of ajinomoto in 1937. (20) Agricultural Experiment Station near Seoul, Korea. This station was built by the Japanese during their occupation of Korea. Later it was taken over and administered by the newly formed Korean Government. Aug. 1948. (21) A Korean boy standing in a field of sorghum interplanted with soybeans; this is a common practice in Korea. 1948. (22) A boy using a shoulder pole to carry two wooden buckets of night soil to the land. Korea. 1948. (23) A wooden shopper looking over the different varieties of soybeans in the market place at Seoul, Korea. Aug. 1948. (24) Outline map of Korea showing where principal varieties of soybeans are grown, the section in which each variety is found, the acreage, and production. Address: Head of Meal Products Investigations, Oilseed Crops Lab., Northern Utilization Research and Development Div., Peoria, Illinois.

992. Smith, Allan K. 1949. Oriental uses of soybeans as food: With attention to fermented products. Notes on Oriental farming practices. *Soybean Digest*. June. p. 15-18, 20, 22.

• **Summary:** Contents: V. With Raymond E. Culbertson. Korea: With attention to fermented products. Introduction. Breeding work. Topography. Land use. Soybean varieties. Climatic relations. Soils of Korea. Cultural practices. Marketing. Soybeans as foodstuff. Soya sauce. Green pods on the bush. Bean sprouts. Parched beans. Curd (soybean curd [tofu]) and milk. Kochuchang. Other uses.

Concerning food uses of soybeans in Korea: "Soya sauce:... is found on the tables of all Koreans, where it is used quite generally on rice, sukiaki [sukiyaki], fish, chicken, and other meats and for the flavor it adds to the soup. It is a very popular appetizer. Most families make soya sauce and are allocated 2.7 kilograms of salt per person annually for this purpose. Yearly consumption is about 6 liters per person. In addition to homemade soya sauce, a supply is also available from many small factories making it. There are more than 10 plants in Seoul, the capital city. Making soya sauce in the home starts about January or February. It is the custom at this time to take a batch of beans and boil them in water until soft, following which they are mashed and formed into a ball, placed in a rice-straw bag and hung up in a heated room to ferment for a 3-month period. Following fermentation, the ball is cut open, broken into pieces and allowed to dry in the sun. When dry, water and salt are added, inoculant (yeast) introduced and the mixture allowed to stand in an earthen crock 2 to 3 months. The liquid is then poured off, boiled about 2 hours and filtered, following which it is considered to be sauce. The sediment remaining in the crock is known as paste. This is used primarily for making soup. In both home and commercial production of soya sauce parched and browned wheat or barley is frequently used in conjunction with the soybeans.

"Green pods on the bush: It is common practice to market early beans on the bush. The plants are pulled, dirt shaken from the roots and the leaves removed. The braches are tied with a string (usually hemp) and the plants are taken to market where they are sold by the bunch. The housewife prepares them for eating by picking off the pods and boiling, and the plant stem is used for fuel.

"Bean sprouts: Bean sprouts are much in demand especially during the winter months. They are used in combination with meat, Chinese cabbage, spinach, turnips, soups and various other cooked dishes. Sprouts are nourishing and supply much-needed vitamins to the Korean's usual polished rice diet. In some instances the beans are left on the sprouts, in others they are removed. The beans are sprouted in central places and usually peddled in two-wheeled, man-drawn carts. Sprouting requires about a week. They are sold on a weight basis.

"Parched beans: For parching, soybeans are simply placed in a pan over a fire and heated slowly until the skin breaks and part of the beans are slightly blackened. They

are eaten like peanuts or mixed with other foods. Most varieties are quite palatable and well liked for parching.

“Curd and milk: Soybean milk is consumed in Korea but not so extensively as in China. The milk is made in a manner similar to the Chinese method which was described in an earlier report.

“A large percentage of the soybeans’ growth in Korea are consumed as soybean curd. In addition to the huge quantities made at home, curd is also made in literally hundreds of small factories. In Seoul alone there are more than a hundred. Small units, which on the average employ five men, can work up about 10 bushels of soybeans daily.

“Kochuchang: Practically every Korean family makes kochuchang. Boiled [soy] beans are mashed and hung up in sacks to cure well for 2 or 3 months. This material is then broken up, dried in the sun, and ground to a fine powder, usually in an old type hand-operated stone mill. Red peppers are ground fine, the lot is mixed and salt and water added, then it is allowed to stand in crocks 2 to 3 months. To prepare kochuchang for the table, it is taken from the crock and boiled with the addition of ground meat and sugar, if the latter is available.”

Note: This is the earliest (and only) English-language document seen (March 2009) that uses the word “kochuchang” to refer to Korean-style red pepper and soybean paste (miso). Address: Northern Regional Research Lab., Peoria, Illinois.

993. Chatfield, Charlotte. 1949. Food composition tables for international use. *FAO Nutritional Studies* No. 3. 56 p. Oct. [158* ref]

• **Summary:** A table on page 11 shows “Food composition in terms of retail weight (“as purchased”) for soybeans and various soybean products: Whole seeds, dry; Flour, full fat (seed coat removed); Flour, low fat—grits, flakes (partially defatted); Curd, tofu (yield 3.5); Fermented beans—Japanese natto; Fermented beans—Chinese tsiang [chiang]; Soybean milk (yield 7.5); Paste, miso (made with small amounts of rice or other starchy materials) (yield 2.5); Shoyu sauce (yield 3.5). The following are given for each product: Calories per 100 gm, percentage of protein and fat, and yield from 1 kg of soybeans.

Similar but expanded information is given on p. 25, including carbohydrate, fiber, ash, and refuse. Address: Nutrition Div., FAO, Rome, Italy.

994. *Vegetarian News Digest (Los Angeles)*. 1949. Health in the news: The soy bean—wonder food of many uses. 1(9):21. Sept/Oct.

• **Summary:** “Allan K. Smith of the Northern Regional Research Laboratory, Peoria, Illinois, recently returned to the United States from the Orient where he learned of countless uses for soy beans. In China, Japan and Korea he found soy beans being fermented, ground, and processed in

various ways. In its motherland, Smith discovered, the soybean is a source of flour and cake, oil, bean sprouts, vegetable milk, various sauces and pastes, curd, cheese, and several other foods.” Describes how soy milk is made in China. One restaurant that Smith visited prepared more than 25 different dishes from soybeans.

995. Brant, Burl. 1949. CARE packages use soy products. *Soybean Digest*. Nov. p. 39.

• **Summary:** “Since April 1948, when the Japanese Food Package for CARE was developed, two soybean products have been continuously included in those packages. They are soy sauce, known as ‘shoyu’ and a bean curd [sic] preparation, known as ‘miso.’” Both the miso and shoyu shipped to Japan were made in the USA. The annual production of shoyu in America is estimated at about 500,000 gallons. The shoyu sent to Japan is made by blending traditional fermented shoyu with HVP soy sauce. Address: Asst. Executive Director, Cooperative for American Remittances to Europe, Inc. (CARE).

996. Kagawa, Aya. 1949. Japanese cookbook (100 favorite Japanese recipes for Western cooks). Tokyo: Japan Travel Bureau. 162 p. Illust. (line drawings, and color-, and black and white photos). 19 cm. Series: Tourist Library No. 11.

• **Summary:** Contents: Preface. General remarks (The why of Japanese food, its nutritive value, table utensils, an ordinary meal, meals for guests, table etiquette, kitchen utensils, how to cut up fish and vegetables, glossary {incl. aburaage, miso, shoyu, tofu}). Japanese cookery: Table of measures, soups, boiled foods, broiled foods, fried foods, saucepan foods, steamed foods, *hitashimono* (boiled greens in soy [sauce]), aemono (dressed vegetables), vinegared foods, sliced raw fish (sashimi), rice foods, sushi (vinegared rice foods), pickles, seasonal menus, New Year’s foods, Girls’ Festival foods. How to make Japanese cakes (incl. bean paste from red beans).

Many recipes call for “shoyu” [soy sauce]. Soy related recipes: Scrambled egg soup (with shoyu or Worcester sauce, p. 42). Tofu and Japanese leek soup (p. 49). Miso soups (p. 50-51). Broiled egg-plants (with miso, p. 70). Beef sukiyaki (with tofu, p. 79-80). Fish stew (with tofu, p. 81). Odamaki mushi (with yuba, p. 85). Boiled greens in soy (p. 91-92). Dressed food with white sesame [seeds] and vinegar (and aburaage {fried beancurd}, p. 96). Dressed carrot and kidney beans in pod (with tofu, p. 97).

On p. 14 we read: “Soy beans are used very much in Japanese food; especially in hilly regions where fish is scarce, or in vegetarian menus (in connection with Buddhism). Beans are not only simply boiled but eaten in various ways. They are made into tōfu (beancurds), aburaage (fried tōfu), nattō (steamed and fermented beans), shōyū. miso, [azuki] bean-paste used in cakes, etc.” Key flavorings are miso, shoyu, sugar, and vinegar. Sake, mirin,

dashi and ajinomoto (seasoning powder) are also important. “Seaweeds are usually eaten dry. Nori (seasoned laver), kombu (tangle), wakame (lobe leafed undaria), hijiki (spindle-shaped bladder-leaf), and so on, are rich in iodine,…”

“Our special thanks are due to Dr. R.H. Blyth, professor of Gakushin University, who translated the original Japanese manuscript into English.” Aya Kagawa was born in 1899. The book was first published in December 1949. The almost identical 9th printing appeared in April 1955. Only the color photos were changed (upgraded) by 1955. Address: M.D. and president of Joshi Eiyô Tanki Daigaku (Women’s Nutrition College), Tokyo, Japan.

997. Mogi, Masatoshi. 1949. *Shōyu miso* [Shoyu and miso]. Tokyo: Daiamondo-sha. viii + 283 p. [4] p. of plates. Illust. 19 cm. [Jap]

• **Summary:** The first four pages of this book contain 10 small photos relating to shoyu production and 10 relating to miso production. Contents: I. Shoyu. Commercial products: 1. History of shoyu (p. 3). 2. Varieties of shoyu (p. 8). 3. Supply and demand of shoyu (p. 25). 4. Quality of shoyu (p. 28). 5. Containers used for shoyu (p. 36). Production: 6. Fermented shoyu (*Jōzō shoyu*) production method (p. 40). 7. Amino-san shoyu production method (p. 90). 8. Semi-chemical shoyu production method (p. 108). 9. Methods of preventing formation of undesirable mold on and gas in bottled shoyu (kabi, p. 110). 10. About steaming equipment (*jōki kikan*) in the shoyu plant (p. 115). Industry: 11. Structure of the shoyu industry (p. 123). 12. The structure of selling and buying of shoyu (p. 141). 13. Supply and demand for shoyu, and the future of the industry (p. 149).

II. Miso. Commercial products: 1. History of miso (p. 173). 2. Supply and demand for miso (p. 175). 3. Varieties of miso (p. 179). 4. Standards for miso (p. 188). 5. Nutritional composition of various types of miso (p. 189). 6. Storing miso (p. 191). Production: 7. Regular miso production methods (p. 193). 8. Methods of making miso using substitute raw materials (p. 223). Industry: Structure of the miso industry (p. 245). 10. Financial condition of the miso industry (p. 254).

The author was born in 1907. Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan.

998. Saito, Akio. 1949. [Chronology of soybeans in Japan, 1927 to 1949] (Document part). In: Akio Saito. 1985. *Daizu Geppo* (Soybean Monthly News). Feb. p. 14-15. [Jap]

• **Summary:** 1927 Sept. 15–Noda Shoyu [Kikkoman] has the longest strike in pre World War II Japan. The labor system becomes more modern and employer-employee problems start to be handled in new ways.

1928–The production of soy oil reaches 38,000 tons, passing rapeseed oil which is 30,000 tons. Soy oil is now Japan’s leading vegetable oil.

1931 Sept.–Japan invades Manchuria, using the Mukden incident as a pretext. 1932–Japan attacks China. By early 1932 Japan had conquered all of Manchuria.

1932 Feb.–The Rikagaku Kenkyujo in Tokyo makes salt-free shoyu for the first time.

1935–At about this time, systematic cultivation of soybean seeds begins.

1938–The average retail price of good quality shoyu is 62 *sen* for 18 liters (10 *sho*).

1938 Sept.–The *Kokusaku Daiyohin Fukyu Kyokai* is founded. This organization encourages the substitution of less expensive or more abundant ingredients in shoyu, such as barley for rice, millet or barn yard millet grass (*hie*) for barley, or the chrysalis of a silkworm for soybeans and wheat in making HVP shoyu (*amino-san shoyu*).

1939–The first soybean is registered in Japan; it is named “Ministry of Agriculture and Forestry, Number 1” (*Norin ichi-go*).

1939 Dec.–The Japanese government puts its energy into controlling the rising prices of rice, miso, shoyu, salt, matches, fresh produce, etc. (i.e. essential foods for daily life).

1940 March–The “Central Price-Fixing Organization” (*Chuo Bukka Inukai*) sets ceiling prices for the following to control inflation: soy oil, soybean cake, Japanese soybeans mixed with Manchurian soybeans, salted salmon, salted trout, dried nori, and eggs.

1940 April–The “Price Setting Central Committee” (*Kakaku Keisei Chuo Inukai*) decides to use a ticket (rationing) system for ten items including rice, miso, shoyu, salt, matches, charcoal, and sugar.

1940 June–The Ministry of Agriculture and Forestry (*Norinsho*) and the Ministry of Commerce and Industry (*Shokosho*) proclaim the new revision of the regulation for controlling excessive profits (*Borikoi Nado Torishimari Kisoku Kaisei*), and on responsibility relating to prices.

1940 Sept.–Even though people are under control, summer resorts become crowded and people take home rice and miso and souvenirs. The government asks them not to do this.

1940 Oct.–The Japan Soybean Control Corporation (*Nihon Daizu Tosei K.K.*) and the Cooperative Soybean Products Marketing Corporation (*Daizu Seihin Kyohan K.K.*) are founded.

1941 June–The home use food oil ticket (rationing) system starts.

1941 Dec. 7–Japan attacks Pearl Harbor. War with the USA begins. 1942 Feb.–The ticket rationing system starts for miso and shoyu.

1943 June–The regulations for emergency food production are decided. They start to use unused lands for production of various small grains and legumes (*zakkoku*).

1943 Nov.–A record book rationing system is established for tofu, to ensure fair distribution.

1945 Aug. 14—Japan surrenders to the USA in World War II after atomic bombs are dropped on Hiroshima and Nagasaki (Aug. 6 and 9).

1945—Because of unusually cold weather, Japan's soybean production drops dramatically, resulting in one of the smallest crops since 1878. It is only 170,400 tonnes, 36.3% lower than the previous year.

1947—The production of shoyu this year is only 1,868,500 *koku*. Since there is not enough shoyu, a lot of substitute shoyu and powdered shoyu (*kona shoyu*) appear; neither of these two products are regulated.

1947 May 3—A new constitution is adopted in Japan in which the country renounces the right to wage war, the emperor gives up claims to divinity, and the Diet becomes the sole law-making authority.

1948 Oct.—At about this time, the food situation in Japan starts to improve. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

999. *SoyaScan Notes*. 1949. Chronology of the macrobiotic movement in North America, 1949-1966. 25 Jan. 1995. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1949—Michio Kushi, a student of George Ohsawa, arrives in New York City from Japan, in connection with the World Federalist Movement. He writes letters back to Japan, and Ohsawa reads them to his students.

1951—Aveline Tomoko Yokoyama falls in love with Michio's letters, wins a trip to America by being the best seller of Ohsawa's newspapers, and meets Michio in New York.

1952, early—Herman Aihara, age 32, arrives in America, and settles in New York City. As early as March 1952 he was selling macrobiotic foods in New York; he imported them from Ohsawa in Japan.

1953—Michio Kushi and Aveline Tomoko Yokoyama are married in New York.

1955 Dec.—Herman Aihara and Chiiko (Cornellia) Yokota are married in New York.

1950s, late—Zen Teahouse, the first macrobiotic restaurant in the USA, is started in New York City by Alcan Yamaguchi with carpentry help from Herman Aihara. It was located at 317 Second Ave. and consisted of a small (4-table) main room containing a kitchen. Miso and shoyu were served regularly. This restaurant was later renamed Paradox.

1959 Nov. or Dec.—George Ohsawa arrives in America for the first time, staying in New York City with Herman Aihara, his closest associate. After a week he flies to California to find a source of short-grain brown rice; he locates Koda Brothers, but also gives lectures in San Francisco and Los Angeles. After one week in California, he returns to New York City.

1960 Jan.—Ohsawa presents the first of three series of lectures designed to introduce macrobiotics, and the philosophy and medicine of the Orient, to America; each for ten nights during January, February, and March of 1960 at the Buddhist Academy in New York City. During these lectures his first work in English is published, a mimeographed edition of *Zen Macrobiotics*. He and the Aiharas duplicated and bound these in the Aiharas' apartment, then sold them at the lectures for \$0.50. He also lectured at the Universalist Church, The New School for Social Research, Columbia University, and New York City College (See: *Macrobiotics: The Art of Longevity and Rejuvenation*, p. 188-89).

1960 July—Ohsawa returns to America (after a trip to Europe) and lectures daily for two months at the first American macrobiotic summer camp at Southampton, Long Island, New York. Mrs. Lima Ohsawa, aided by Cornelia Aihara, gives macrobiotic cooking classes. Many people attend, especially writers, actors, artists, musicians, and intellectuals.

1960—To serve this growing interest, a tiny restaurant named Musubi is started in Greenwich Village and run by Alcan Yamaguchi, Romain Noboru Sato, Junsei Yamazaki, Herman Aihara, and Michio Kushi. In late 1961 Musubi was moved to 55th Street.

1960—The first macrobiotic food store (combined with a gift shop), named Ginza, is started by Herman Aihara.

1961 Jan.—The Ohsawa Foundation of New York is established on 2nd Avenue by Irma Paule, Michio Kushi, and friends. Michio and Herman Aihara were the first two presidents.

1960, late—Herman Aihara starts publishing *Macrobiotic News*, a magazine consisting mainly of Ohsawa's lectures.

1961 summer—Ohsawa comes to America again for the second macrobiotic summer camp, this time in the Catskill Mountains at Wurtsboro, New York. Lima Ohsawa and Cornelia Aihara give cooking classes. After the camp, at the time of the Berlin Wall crisis (August 1961, before the Cuban missile crisis of Oct. 1962), Ohsawa feared that a nuclear war might be near. He urged his followers to leave New York and find a place that was safer from radioactive fallout and good for growing rice. After extensive research, they chose Chico, California.

1961 Oct. 1—Thirty two people (11 families) arrive in Chico from New York City in a caravan of vans, buses, and station wagons. Among the active people in the group were Bob Kennedy, Herman Aihara, and Dick Smith.

1962 March 6—The group in Chico establishes a new food company named Chico-San as a retail store and an import and wholesale business. It was capitalized with \$10,000. In addition to a line of whole-grain products, they soon began to import a variety of macrobiotic foods from Ohsawa in Japan. The first store and food plant (they made sesame salt or *gomashio* and repackaged foods) was in the

basement of a small hearing aid shop in Chico. It became the first macrobiotic food production company in the USA.

1962 Christmas—George Ohsawa visits Chico and lectures on macrobiotics.

1963—Ohsawa lectures in Boston, New York City, and at the third macrobiotic summer camp at the University of California at Chico. Lima Ohsawa and Cornelia Aihara gives cooking classes. In Chico, he suggests that the group try making rice cakes. He sends them a rice cake machine from Japan and production began in the fall of 1963. Rice cakes soon became Chico-San's first really popular and successful product.

1963—The first edition of *Zen Cookery*, a book of macrobiotic recipes, is published by the Ohsawa Foundation in Los Angeles.

1963 Sept.—The Kushi family moves to Cambridge, Massachusetts (101 Walden St., on the outskirts of Boston to the northwest) Michio stops all his outside business activities and directs his full attention to teaching macrobiotics.

1964 summer—Ohsawa lectures in California at the fourth macrobiotic summer camp at Big Sur. Lima Ohsawa and Cornelia Aihara gives cooking classes. 1965—The macrobiotic movement in America, though small, is growing rapidly. Ohsawa lectures again in California at Mayoro Lodge, near Pulga.

1965—Michio Kushi organizes the first East West Institute out of his home in Cambridge and begins teaching macrobiotics, cosmology, and cooking to mostly young people.

1965—The second edition of Ohsawa's *Zen Macrobiotics* is prepared and published by Lou Ohles of the Ohsawa Foundation in Los Angeles. It contains much more information (including much more about soyfoods) than the original 1960 mimeographed edition.

1965—*You are All Sanpaku* by William Dufty is published.

1965 Nov. 9—Beth Ann Simon, a young heroin addict from New Jersey, dies while following a strict macrobiotic diet. This is the movement's first major setback. Ohsawa and the macrobiotic diet receive much adverse publicity, and the incident brands macrobiotics among many in the medical and health professions as a dangerous and extreme form of food faddism. The image was hard to get rid of. The U.S. Food and Drug Administration closes the New York branch of the Ohsawa Foundation, run by Irma Paule.

1966 April 23—George Ohsawa dies unexpectedly in Tokyo, Japan, at age 72—just as his teaching is beginning to spread rapidly in the West. The cause of his death: a heart attack, perhaps caused by filarial parasites he had picked up at Lambarene, Gabon.

1966 April—Erewhon opens as a tiny (10 by 20 foot) retail store downstairs at 303-B Newbury Street in Boston.

1966, summer—Michio Kushi begins to lecture each Monday and Wednesday evening in a back room of the Arlington Street Church in Boston. These talks were supplemented by cooking classes with Aveline Kushi in Brookline.

1000. Nakajima, Iwao; Kato, Junichi. 1950. Kôji-kin ni yoru nama denpun no shôka ni tsuite [On the digestion of raw starch by the koji mold *Aspergillus oryzae*]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 28(6):220-21. June. [Jap]

Address: Nihon Daigaku, Nôgaku-bu, Japan.

1001. Miso Manufacturing Experiment Administration Committee. 1950. Miso jôzô shiken hôkoku [Report of the experiments on miso manufacturing, May 1950]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)*. No. 4. p. [iii] + 1-84 + 1-90 + 1-32. Sept. English translation (32 p.) is bound at the end of Issue No. 4. [Jap; Eng]

• **Summary:** The first three parts of this article (177 p.) are in Japanese and the last part (32 p.) is a detailed English summary.

Contents (English summary): 1. The circumstances which led to make the miso manufacturing experiments: The general aspects of raw materials for miso, the circumstances which led to set about the experiment work.

2. Experiment methods and experimental results: The experiment methods, marking by means of functional testing (frequency curve, analysis of variance and minimum differences required for significance among average marks, discussion), chemical analysis (raw materials, chemical analysis of defatted soy-beans, non-defatted soy-beans, and corn-meal, denaturation of protein in defatted soy-beans, enzymic digestion of defatted soy-beans), finished goods (miso) (general analysis, correlation between the analytical results and the functional testing results, nitrogenous compounds, judgment for finished goods by dividing into 3 grades, analysis made by excluding the disparity among manufacturing plants, judgment for the results of finished goods, by manufacturing plants (minimum significant difference—2.39).

3. Conclusions: Premises, 50% koji products, 100% koji products, 150% koji products.

4. Discussion. 5. Appendix—Experiments on a laboratory scale: Object of experiments and outline thereof, koji-making experiment, conclusions.

In the years before World War II, annual consumption of soybeans in Japan was not less than 1,000,000 tonnes (metric tons), of which 300,000 tonnes were grown in Japan and the remainder was imported from Manchuria and Korea. Out of this 1,000,000 tonnes, about 700,000 tons are estimated to have been consumed as foods or seasonings; approximately 250,000 tonnes were used as raw materials

for miso, which is one of Japan's most important seasonings.

Concerning miso consumption in the years just before World War II, exact figures are not available, but it can be roughly estimated at about 150 million *kan* (1 *kan* = 8.27 pounds), or a little more than 2 *kan* (ca. 16.5 lb) per person per year.

In those days, miso was made to suit public tastes in the various regions of Japan, and there were various kinds of miso according to the region. Miso can be grouped into three basic types: soy-bean miso (*Mame miso*) salty miso, and sweetish miso. Describes briefly how each of the three types was made. One table (p. 2) shows the ingredients used to make each of these three types: (1) Soy-bean miso: Soy-beans 10 *koku* = 1,800 liters. Salt 110 *kan* = 909.7 lb = 413.5 kg. Ripened miso 1,000 *kan* = 8,270 lb = 3,759.1 kg.

(2) Salty miso: Soy-beans 14.0 *koku* = 2,250 liters. Milled rice or milled barley 7.0 *koku* = 1,260 liters (made into koji). Salt 185 *kan* = 1,530 lb = 695.4 kg. Ripened miso 1,650 *kan* = 8,270 lb = 3,759.1 kg.

(3) Sweetish miso: Soy-beans 12.8.0 *koku* = 2,304 liters. Milled rice or milled barley 15.7 *koku* = 2,826 liters (made into koji). Salt 94 *kan* = 777.4 lb = 353.4 kg. Ripened miso 1,700 *kan* = 14,059 lb = 6,390.5 kg.

As late as 1941, due to food shortages, miso was brought under Japanese government control; from that time until the end of the war, miso production gradually decreased. Starting in about 1944 only one type of miso was made for all the regions of Japan—a type of salty miso. 100 *kan* of miso was made using 34 *kan* of soy-beans, 16 *kan* of milled rice or barley, and 15 *kan* of salt. Efforts were made to shorten the fermentation time by using a quick ripening method [a heated or warm environment].

At the end of World War II, Japan was unable to import soy-beans from Manchuria [and, to a lesser extent, Korea]. This dire soybean shortage led to a sharp decrease in miso production; Japan started to use defatted soybean meal and defatted soy flour (imported from the USA) in place of whole soybeans, and sweet potatoes or imported corn instead of some rice or barley, to make miso. The quality of miso dropped. The experiments described in this report represent an attempt to improve miso quality scientifically, mainly by investigating how to use defatted soybean meal to make better quality miso. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1002. *Soybean Digest*. 1950. Japan shifts from whole beans to meal. Nov. p. 24.

• **Summary:** Two pie charts show Japanese usage of soybeans in 1940 and 1948. In 1940 the Japanese were consuming about half of their 562,000 tonnes of soybeans as whole soybeans used to make various foods such as shoyu, miso, and tofu. But by 1948 nearly all their soybeans were being used in the form of soybean oil meal, especially

to make miso, shoyu, and amino acids. Consumption of miso and shoyu have greatly increased, while other uses (especially tofu) have shrunk.

“During the 10 years preceding the end of World War II, Japan imported an average of about 700,000 tons of soybeans, chiefly from Manchuria. This inflow of soybeans was stopped almost entirely immediately after the war, which resulted in critical protein and oil supplies. But imports since then have increased, overcoming the extreme shortage. About 80 percent of total soybean imports during 1946-48 were from the U.S.”

1003. Nakazawa, Ryoji. ed. 1950-1964. *Hakkô oyobi seibutsu kagaku bunken-shû* [Bibliography of fermentation and biological chemistry]. Tokyo: Nihon Gakujitsu Shinkokai/Hirokawa Publishing Co. 11 volumes. In European languages and Romanized Japanese. [500 soy ref. Eng; Jap]

• **Summary:** Contains extensive, excellent bibliographies on the following soy-related subjects (listed here alphabetically): Amazake (p. 139, only 2 references). Kôzi (Koji) (p. 398-410). Mirin (p. 464-65). Miso (p. 465-68). Natto (p. 8-9). Natto bacteria (p. 9-10). Penicillium (p. 210-63; see p. 240 for tempeh and ontjom). Rhizopus (p. 81-97). Soybean and soybean cake (p. 271-77). Syôyu [Shoyu] (p. 436-49). Tôhu (p. 498, only 3 references, all for nonfermented tofu). Each bibliography lists the documents in approximately chronological sequence. An unnumbered page near the beginning titled (in Japanese characters only) *Shuyô Inyo Bunken* [Main Periodicals Cited] lists 51 such periodicals, of which 12 are in Japanese. Of these twelve, all have the title written in Chinese characters, with an English translation, and a Chinese plus a romanized abbreviation of the Japanese title. Two examples: No. 2. *Nippon Nogei Kagaku Kaishi*. J. Agr. Chem. Soc. Japan [J. of the Agricultural Chemical Society of Japan]. *Nô-ka*. No. 4. *Nihon Jozo Kyokai Zasshi*. J. Fermentation Association Soc. Japan. *Zyô-Kyô*. Note that much of the romanization throughout these 11 volumes is based on a system that is no longer used. Nakazawa was born in 1878. Address: Japan.

1004. Photograph of the T. Amano Co. in Vancouver, British Columbia, Canada. 1950. Vancouver, British Columbia, Canada.

• **Summary:** This black-and-white photo, sent to Soyfoods Center in 1981 by T. Amano Co. of British Columbia, shows the front of a small, modern building. A floor-to-ceiling panel of glass bricks are to the left of the main door near the center. Over the door, in large letters is written: “T. Amano Co.” On the right front window, partly covering venetian blinds, in smaller letters, we read on five lines: “T. Amano Co. Manufacturers—Soya sauce & rice paste [miso]. Oriental food products. Importers & exporters.” Address: Vancouver, British Columbia, Canada.

1005. Adachi, Isamu; Sakurai, Shigeru. 1950. *Nihon shokumotsu-shi* [History of Japanese foods]. Tokyo: Yuzankaku. 480 p. [Jap]

• **Summary:** Best book seen on the history of Japanese foods. The following appears in chapter 8. Edo Period:

“Amazake and Shirozake (p. 375-76). In ancient times there was Kozake and hitoyo-zake (one-night sake). They became known as amazake at a later date. But kozake was different from subsequent amazake; sometimes it was made using sake instead of water in the fermentation. The term ‘amazake’ first appeared in the literature of the Keicho period, which started in A.D. 1596. Later, during the Kan-ei period (1624-1630) there was Shirakawa Amazake.

“In Rokujo, in Kyoto, the Yamashiro-zake was very old and famous. Within the city of Edo (today’s Tokyo), in the Yokayama-cho section, during the Temmei period (1781-89), Sangoku Ichi Amazake was sold. After taking it home, the consumer would add an equal amount of boiling water to the amazake and stir while simmering. The names Sangoku Ichi (three countries are one) and Shirayuki (white snow) came from the fact that it was sold in a container with a plum flower crest drawn on it (*umebachi*) and also Mt. Fuji was drawn in the shop. This was because the goddess of the Mt. Fuji shrine is named *Konohana Sakuya Hime* (“Tree Flower Blooming Princess”); she got pregnant overnight. Since amazake was known as “one-night sake” in ancient times it was connected with this goddess.

“Amazake used to be sold only in winter. Around the Bunka period (1804-1817) it was sold year-round. There were 5-6 amazake shops in Edo (Tokyo). Among them, the one in front of the Asakusa Honganji temple was famous. Although at that time amazake was sold during the summer, it later returned to being a winter drink.”

1006. Coorengel, G.B. 1950. *Katjang kedelai* [The soybean]. Jakarta: Balai Pustaka. 34 p. 20 cm. [Ind] Address: Jakarta, Indoensia.

1007. Feng, Doreen Yen Hung. 1950. *The joy of Chinese cooking*. New York: Greenberg. 227 p. Illust. Index. 24 cm.

• **Summary:** The section on “Ingredients” describes each basic ingredient, and gives the Cantonese name plus Chinese characters, including: (1) “Soya sauce” (*jeung yow*) is an absolutely essential basic ingredient. It “can nowadays be found in almost all neighborhood delicatessen or grocery shops” (p. 21). (2) “Bean sprouts” (*dow ngaah*). “They are usually golden yellow in color and possess a strong flavor and a rather crunchy texture.” An illustration shows these sprouts, which appear to be soybean sprouts (p. 22-23).

(3) Two types of dried yuba (*fooh jook* and *tiem jook*), both illustrated. When soya bean milk is boiled, it separates into various layers; “the rich cream that rises is called *fooh jook*, and the settling sediment is called *tiem jook* [sweet

yuba]. When dried, they look like stiff boards glazed with enamel, but after they have been cooked they become creamy and gelatinous. *Tiem jook* is used in fish dishes; while *fooh jook* is usually cooked in soup” (p. 30-31).

Note: This is the earliest English-language document seen (Oct. 2008) that uses the term *fooh jook* to refer to yuba, or the term *tiem jook* to refer to yuba—specifically to the thicker, sweeter, less expensive bottom yuba, called *ama-yuba* in Japan.

(4) Chinese sauces (*jeung*) come in bottles or cans (p. 32): (4a) Soya sauce (*jeung yow*) is an almost black sauce made from soya beans. The best substitute is Maggi. (4c) Bean-curd cheese (*fooh yü*) [fermented tofu] “Grayish-white little cubes of pressed bean-curd fermented in strong wine.” It may be used in cooking. (4d) Bean-curd cheese, Eastern style (*naam yü*) [fermented tofu]. Fermented in a brick-red sauce, it is usually used for cooking. (4f) Tiny black fermented beans (*dow see*) [soy nuggets]. In cooking, these are generally crushed and used to season other strong-smelling ingredients such as fish. They add “a delightful spiciness to the sauce.” (4g) A famous red sauce (*hoy sien jeung*) [Hoisin sauce]. This famous red sauce is often used in cooking shellfish and duck; it is widely served with Peking roast duck. There follows a description (p. 33) of how to make bean-curd cheese from fresh bean curd. (5) Oils and fats, incl. vegetable oils like soya bean oil, peanut oil, or sesame oil.

Note 1. This is the earliest English-language document seen (March 2007) that uses the terms “Bean-curd cheese” or “fooh yü” or “naam yü” to refer to fermented tofu.

Note 2. This is the earliest document seen (Sept. 2008) that mentions Hoisin sauce, whose Chinese name is *hai-hsien chiang* (Wade-Giles) or *haixian jian* (pinyin). Its main ingredient is soybeans.

Soy related recipes include: Pig’s feet soya bean soup (*Jüh gerk fooh jook tong*, with yuba, p. 80). Oyster sauce bean curds (*Ho yow dow fooh*, with fresh bean curd, p. 155). Many other recipes use soya sauce as a seasoning.

Note: This book was first published in 1950 by Greenberg in New York City (227 p., 24 cm). It was next published in 1952 by Faber and Faber in London (227 p., 23 cm). Grosset & Dunlap (1954) appears to be the third.

1008. Japan Rodosho Shokugyo Antei-kyoku. 1950. *Washi seizôgyô* [Japanese-style paper manufacturers]. Tokyo: Rodosho Shokugyo Antei-kyoku. 105 p. 21 cm. *Shokumu Kaisetsu*, No. 61. [Jap]*

• **Summary:** This is a Japanese government publication. Address: Japan.

1009. Japan Rodosho Shokugyo Antei-kyoku. 1950. *Miso seizôgyô* [Miso manufacturers]. Tokyo: Rodosho Shokugyo Antei-kyoku. 105 p. 21 cm. *Shokumu Kaisetsu*, No. 61. [Jap]*

• **Summary:** This Japanese government publication must be very similar to another published the same year titled *Washi seizogyoku*. Both are No. 61 in the same series and both have the same author, publisher, and number of pages. Address: Japan.

1010. Lautensach, Hermann. 1950. Korea: Land, Volk, Schicksal [Korea: The land, the people and its destiny]. Stuttgart, Germany: K.F. Koehler. 135 p. Illust. Maps (1 folded in pocket). 25 cm. [Ger]*

• **Summary:** Hermann Lautensach lived 1886-1971. Address: Prof., Dr.

1011. Mahyudin, R. 1950. Chasiat kedele dan tomat: Sebagai makanan rakjat [The use of soybeans and tomatoes as foods]. Jakarta: Pustaka Rajkat. 42 p. [Ind] Address: Indonesia.

1012. Masuno, Minoru. 1950. Daizu to sono riyô [The soybean and its utilization]. Tokyo: Sangyo Hyoron-sha. 197 p. [Jap]

• **Summary:** A very nicely done predecessor to Watanabe et al.'s book *Daizu Shokuhin*. Address: Tokyo Daigaku Kyoju, Kôgaku Hakase, Japan.

1013. Morse, W.J. 1950. History of soybean production: 5. World distribution (Document part). In: K.S. Markley, ed. 1950. Soybeans and Soybean Products. Vol. I. New York: Interscience Publishers or John Wiley & Sons. xvi + 1145 p. See p. 10-14.

• **Summary:** "The production of soybeans, which for many centuries was confined to the countries of Asia, spread rapidly after World War I to the western world, and since World War II practically all leading nations have become more and more interested in the culture and production of the crop. Agricultural experiment stations throughout the world have become engaged in the development of varieties suited to their soil and climatic conditions through introduction, selection, and hybridization. Successful results have been obtained in many countries and, in a few, acreage and production have increased to the extent that the crop has become an important factor in that nation's agriculture. This is especially true of the United States, Netherland Indies, Rumania, U.S.S.R., Austria, Bulgaria, and Poland.

"The principal zones of soybean production in the Orient are China, Manchuria, Korea, and Japan. In Manchuria, the soybean occupies about 25% of the total cultivated area and is a dominating factor in the economic life of the country. As a cash crop it provides fully half the farm income in the north and more than half the total volume of freight handled by the railroads. It is estimated that from one- to two-thirds of the production of soy beans is exported; 15 to 20% is utilized for food, feed, and planting, and the remainder is used for oil extraction.

"In China, the soybean is one of the principal and most ancient of crops, ranking fifth in extent of culture and occupying about 9% of the total cultivated area. Although grown everywhere in China, about 60% of the soybean acreage is confined to three northern provinces, Shantung, Kiangsu, and Honan. China consumes practically all of her production, estimates indicating more than 50% for food, 27% for oil extraction and other purposes, 10% for stock feed, and 8% for planting.

"Korea occupies third place among the soybean-producing countries of Asia. Acreage and production are confined largely to central and northern Korea, as southern Korea, which grows principally cotton and rice, seems to be less suited to the successful production of soybeans. The entire Korean production is used for food, stock feed, planting and export, and none is used for oil extraction.

"Japan, although a large producer of soybeans, has consumed all her production and has imported large quantities from Manchuria and Korea. Acreage and production of soybeans in Japan have decreased since World War I and greater emphasis has been placed on increased production of rice. The proportions of soybeans used by Japan for various purposes are: 'miso' (soybean-rice fermented paste), 22%; soy sauce, 22%; oil and oil cake, 21.5%; soybean curd [tofu], 15.5%; confections, 7.2%; forage, 6.2%; green manure, 2.5%; seed, 1.8%; green vegetable beans, 0.8%; and miscellaneous, 0.5%.

"In the Soviet Far East, the soybean is said to be one of the chief industrial crops and in some districts constitutes 20% of the cultivated area. Acreage and production have increased markedly since 1926, especially in Khabarovsk territory, the largest seed-producing area.

"South of China, the soybean is cultivated to some extent in the Netherland Indies, India, Siam, Cochin China, Philippines, and Australia. Until 1932, the production of soybeans in the Netherland Indies was not sufficient to meet the domestic demand. Since then, acreage and production have gradually increased until soybeans began to be exported to Holland about 1936. The soybean has been widely cultivated for a long time by the natives of the hilly regions from the borders of Afghanistan eastward to Burma, to northern Siam, and French Indo-China. The crop in India has been grown for its forage and food value rather than for commerce. Although successful results have been obtained in some of the provinces with varieties of good oil content, the growing of the crop as an oil seed does not appear to have been popular with the native farmers. In Australia successful results with American varieties have greatly increased acreage and production, especially in the states of Queensland, New South Wales, and Victoria.

"Although attempts to grow soybeans in European countries have extended over many years, it is only within the past few years that there has been any appreciable production. At present, production is confined largely to

European U.S.S.R., Bulgaria, Yugoslavia, Austria, Rumania, and Czechoslovakia, production being largest in Rumania, Bulgaria, and Yugoslavia. In the development of adapted varieties, some progress has been made in Sweden, Poland, Netherlands, and Hungary. Because of the economic importance of the soybean, scientists of the U.S.S.R. have carried on extensive experiments with it, especially in the development of adapted varieties and utilization. At present, the principal areas of production are Ukraine, Moldavia, and certain regions in the North Caucasus.

“Experiments have been conducted with the soybean in nearly all regions of Africa but as yet it is an unfamiliar crop to the majority of African farmer. It has been grown successfully in the upland, midlands, and coastal districts of Natal [South Africa] and throughout Gambia, Nigeria, Egypt, the Gold Coast Colony, and also in the corn- and cotton-growing districts of the Belgian Congo.

“Although the soybean has been the subject of considerable experimental work in practically all countries of the Americas, little progress has been made in commercial culture except in the United States and Canada.”

Note: This is the earliest document seen (Dec. 2007) that clearly refers to soybeans in Afghanistan, or the cultivation of soybeans in Afghanistan. This document contains the earliest clear date seen for soybeans in Afghanistan, or the cultivation of soybeans in Afghanistan (long before 1950). The source of these soybeans is unknown. Address: 6809 Fifth St. N.W., Washington, DC; formerly Principal Agronomist, Div. of Forage Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, USDA, Beltsville, Maryland.

1014. Pan Ku. 1950. *Han Shu* [The Han dynasty book]. Translated and edited by Nancy Lee Swann. In: *Food and Money in Ancient China: The Earliest Economic History of China to A.D. 25*. *Han Shu* 24 with related texts *Han Shu* 19 and *Shih-chi* 129. Princeton. [Chi]

• **Summary:** See Nancy Swann 1950. Address: China.

1015. Swann, Nancy Lee. trans. 1950. *Food and money in ancient China: The earliest economic history of China to A.D. 25*. *Han Shu* 24, with related texts, *Han Shu* 91 and *Shih-Chi* 129. Princeton, New Jersey: Princeton University Press. 482 p. Plus unpaginated Chinese text at end. [1 ref. Eng]

• **Summary:** This translation of the ancient Chinese book titled *Han Shu* contains extensive annotation and footnotes by the author. The *Han Shu*, written by members of the Pan family (father, son, and daughter), is one of China’s most important early historical works, rivaled only by its great predecessor and model, the *Historical Record (Shih-chi)* written by Ssu-Ma Ch’ien and his father, Ssu-Ma Tan, completed between 100 and 90 B.C. Pan Ku (A.D. 32-92),

the son, to whom the work is generally attributed, inherited his father’s writings. The book is basically a treatise on certain economic phases of the Western/Former Han period (206 B.C. to A.D. 8; HS 24AB) together with sketches of 41 rich merchants and wealthy industrialists (HS 91). It is similar in many ways to the *Historical Record*.

Page 419 notes that “the poor only had soybeans to chew and water to drink.”

The section on the “Wealth of Ch’in Han Times” (*Han Shu* 91), which describes the period from about 250 B.C. to A.D. 24, it is stated (p. 434): “[Whoever in] market towns and commercial metropolises [sold] annually [any one of the following categories to the specified quantity] was also equal [in wealth with the head of a great hereditary] family *chia* of a thousand chariots. 1. Liquor, a thousand brewings. 2. Pickles and sauces *chiang-yu*, * a thousand jars. 3. Sirups *chiang***, a thousand jars. 4. Slaughtered cattle, sheep, and swine, a thousand [animals including] skins.”

The square brackets are in the translation. This is sections 91:7a/4 and 8b/1 of the original Chinese text. The authors two footnotes, indicated here by asterisks, read as follows: * “Consult *Li-Chi* 2:23b, *Sacred Books of the East*, xxvii, 79. The west has learned of the sauce under the Japanese pronunciation *soy*. It is a ‘black, thin liquid, having an agreeable saltish flavor (Stuart 191-195). There are several forms, such as that made from wheat or barley flour, and from various kinds of beans. It is the universal sauce of the Chinese and Japanese, and is to be distinguished from bean relishes *shih*, HS91:11b/5.”

** “Chiang, consult *Li-Chi* 2:24a, *SBE* xxvii, 79. The *Chou Li* listed four drinks and sirups (5:16a), and also six drinks and sirups (5:24b), and in both lists *chiang* is included. Commentators gave opinions that *chiang* was obtained in part from meats.”

On page 459, in the section on “Nos. 26-32. Seven Wealthy Men of the Capital,” we read that Fan Shao-weng (no. 31), and Wang-sun Ta-ch’ing (no. 32), were both merchants of bean relishes [*shih*, soy nuggets]’ they lived in the city of Ch’ang-an. Address: Princeton, New Jersey.

1016. Zakkoku Shorei-kai. 1950. *Daizu no kenkyû* [Soybean research]. Tokyo: Sangyo Tosho. 268 p. [Jap]

• **Summary:** Pages 174-85 discuss: 1. Roasted soybeans (*irimamé*). 2. Cooked whole soybeans and ground soybeans (*nimamé*, *udemamé*, *mamé-zuri*). Soaked soybeans (*hitashi-mamé*). 4. Uncooked ground soaked soybeans (*goto* and *go*). 5. Ground soybean paste molded into shapes (*uchigo*, *gotsu-dotsu*, and *jinda tofu*). 6. A mixture of soybean paste and rice molded into a stick shape (*mamé-shitogi*). 7. Goto miso and Goto miso soup (*Goto misoshiru*). 8. Various kinds of natto. 9. Miso. 10. Miso soup. 11. Roasted soy flour, and soybean flour (*kinako* and *tofun*). 12. [Soy] bean sprouts (*moyashi*). 13. Soybeans soaked in their pods (*mamé-tsuke*).

Note: This is the earliest document seen (Nov. 2008) that mentions *jinda* or *jinda tofu*.

1017. Bening, W. 1951. First published report on soybeans. It was written in Germany in 1712. *Soybean Digest*. March. p. 20-22.

• **Summary:** This book was the *Amoenitatum Exoticarum* (“Exotic Novelties”) by Engelbert Kaempfer. The book, itself, is located in a locked glass case at the Engelbert Kaempfer Museum, in the dreamy medieval town of Lemgo, Germany, where Kaempfer was born on 16 Sept. 1651. When he died, he left behind his extensive diaries, drawings, and manuscripts, some of which are still among the rare materials of the British Museum in London. Kaempfer had a lifelong desire to travel abroad and an “unbelievable capacity for learning foreign languages... An amateur in almost all fields of science, with profound knowledge in medicine, botany, and pharmaceuticals, at the age of 32 Engelbert managed in 1713 to be engaged as secretary to the Royal Swedish Ambassador Extraordinary on a special mission to Persia. And some years later, after many story book adventures, he was assigned as surgeon in the colony of the Dutch East India Company in Japan.”

The author then gives an English-language translation of what Kaempfer wrote about the soybean. “This [Dutch East India] company operated at that time the only European colony in Japan. It was licensed by the emperor of the country. The colony was hermetically sealed from the country and its inhabitants. Laws were extremely severe on foreigners as well as the natives.

“Kaempfer, whose only wish was to study the country and its population, despaired. Yet under these hard circumstances, he wrought the masterpiece of his life. His open character and untroubled friendliness to all, and his extraordinary gift of learning languages overnight, opened to him the minds and hearts of the Japanese people...”

“Engelbert Kaempfer in those prison years on the little island of Deshima, laid the foundation of western science in Japan.

“When Engelbert returned to Lemgo 10 years after he had left home, he wrote his *Amoenitates Exoticae* in the difficult Latin language of those times.”

Photos show: (1) Kaempfer’s book, opened to the illustration of a soybean plant. (2) Dr. W. Bening, “a German nutritionist and soya expert, who has been connected with the program for improvement of the German diet with soy foods.” (3) The outside front of the Engelbert Kaempfer Museum near Lemgo. Address: PhD.

1018. Mogi, Masatoshi; Nakajima, Shigeji; Iguchi, Nobuyushi; Yoshida, Fumihiko. 1951. *Kyôka miso no kenkyû*. I. *Furabin seisan ôki kôji-kin ni yoru miso shijô shiken* [Studies on fortified miso (Fermented soybean paste)]. I. Trial brewing of miso with a riboflavin-producing

strain of *Aspergillus oryzae*]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 29(8):302-310. English-language summary on p. 44 of this issue. [11 ref. Jap; eng]

• **Summary:** (1) Out of 121 strains of *Aspergillus oryzae* taken from many kinds of miso and koji starter (*Tané-koji*), eleven strains which produced riboflavin comparatively well were selected by means of culturing in Pfeffer’s solution. (2) A strain that produces the most riboflavin was selected from these 11 strains by manufacturing soy-bean and rice malts.

(3) A sort of fortified miso was made on trial by using this strain, and it produced 3 times the ordinary amount of riboflavin in “rice Miso” and 2.4 times the amount of riboflavin in wheat Miso. Note: This is the earliest English-language document seen (Feb. 2009) that uses the term “rice miso” to refer to miso having rice and soybeans as its main ingredients. Address: Brewing Lab., Noda Shoyu Co. Ltd., Noda-machi, Chiba-ken, Japan (Noda Sangyo Kagaku Kenkyujo).

1019. *New York Times*. 1951. News of food: Dried minnows among the exotic foods, mostly Japanese, sold at grocery here. Oct. 23. p. 32.

• **Summary:** About Joe Oyama’s Oriental Food Shop at 2791 Broadway (at 107th St.) in New York City. The many Japanese foods he sells include: (1) Pickles of “cucumber in bean paste” [miso]. (2) Burdock root, which is “sometimes fried in bean oil seasoned with red pepper and soy sauce.” (3) “Gomoku-no-moto—a combination of [diced] carrots, bamboo shoots, lotus roots, fried bean curds [agé], and Japanese mushrooms.”

During World War II he shipped parcels of such foods as rice, soy bean paste [miso], and pickled radishes [daikon] “to the Japanese-Americans, who comprised the famed 442d Regimental Combat Team.”

1020. Burnett, R.S. 1951. Soybean protein food products. In: K.S. Markley, ed. 1951. *Soybeans and Soybean Products*. Vol. II. New York: Interscience Publishers or John Wiley & Sons. xvi + 1145 p. See p. 949-1002. [125 ref]

• **Summary:** Contents: 1. Soybean flour, grits, and flakes: Introduction, early history, types of soybean flour—standard definitions, amount of soybean flour and related products produced, methods of manufacture, soybean flour in bread, soybean flour in other baked goods, soybean flour in the meat industry, soybean flakes in breakfast foods, soybean flakes and derived peptones as brewing adjuncts, miscellaneous uses of soybean flour. 2. Isolated and modified soybean proteins: Aerating agents for confections and related products, neutral spray-dried soybean protein [isolates], soybean protein in [whipped] toppings, soybean protein and flour in confections, soybean protein and flour in ice cream, soy sauce, monosodium glutamate from

soybeans, soybean vegetable milk, tofu, miso, yuba, and other Oriental soybean foods (incl, natto and Hamanatto).

The soy flour industry in the U.S. has grown steadily in recent years. Deliveries of soy flour "from the years 1930 to 1940 averaged about 25 million pounds annually. The deliveries have increased considerably since 1940 partly as a result of an increase in domestic use and partly as a result of deliveries of soybean flour to various government agencies, largely for export. In 1941, Federal purchases amounted to about 10 million pounds of soybean flour. In 1943, the amount increased to 170 million pounds when large shipments were made to Great Britain and the U.S.S.R. under lend-lease. Purchases of soybean flour by the Federal government decreased for several years, but increased in 1946 to an estimated 200 million pounds under the UNRRA [United Nations Relief and Rehabilitation Administration] program. Total soybean flour deliveries for 1946 were approximately 380 million pounds. In the domestic market the bakery industry was the largest consumer. About 40% of the domestic sales of soybean flour were for bakery use. Since the Bureau of Animal Industry has legalized the use of soybean flour as a binder in meat products, about 20% of domestic sales are to the sausage industry. The balance is used in prepared dough mixes, macaroni, candy, and in institutional feeding.

"In 1947, domestic sales of soybean flour were over 60 million pounds. This amount, plus government purchases and exports, amounted to about 415 million pounds. Two-thirds or more of the present domestic consumption of soybean flour is by the bakery, meat processing, and pet foods industries." In 1942-43, the amount of full-fat soy flour produced in the USA was roughly 40% of the amount of defatted. In 1944-45 it was about 49%, but thereafter the percentage dropped rapidly to only 5% in 1946-47.

Concerning soybean flakes and derived peptones as brewing adjuncts (p. 974-77): "Soybean flakes and grits have been employed by the brewing industry to improve the body and flavor of beer, to increase foam stability, and to stimulate yeast growth.

"Improvement in foam stability and flavor can also be attained by adding directly to the finished beer a hydrolyzed soybean protein which has been broken down to the peptone and proteose stage...

"The early history of the use of soybean products as whipping agents is of interest since this work stimulated the development of processes which eventually led to the production of the present soy albumens. In 1939, Watts and Ulrich pointed out that an active whipping substance could be prepared from solvent-extracted soybean flour in which the protein had not been heat denatured, by leaching it at the isoelectric point of the protein. This extract was found to whip more readily and to a much greater volume than suspensions of the original flour... The active principle in the whipping substance prepared by Watts and Ulrich was

probably the nonprotein nitrogenous material present in the soybean flour which is soluble at the isoelectric point of the protein."

Tables show: (155) Soybeans used in the production of low-fat and full-fat flour and grits (1942-1947, 1,000 bushels). (156) Peroxide value of fat extracted from pastries stored at -17.8°C. (0°F.), containing different percentages of soybean flour for periods of 0-6 months. (157) Analysis of uncooked liverwurst emulsion and of processed (water-cooked) sausage containing added soybean flour and water. (158) Losses in cooking liverwurst containing added soybean flour and water. (159). Analysis of frankfurter emulsion and of smoked sausage made with 3.5% of various binders. (160) Losses in smoking frankfurters made with 3.5% of various binders and after consumer cooking. (161) Effect of the addition of soybean peptone on volume and life of foam on beer. (162) Composition and pH of soybean albumens. (163) Composition of ice creams containing soybean flour. (164) Comparison of soybean milk with cow milk. One sample of cow's milk is compared with 4 samples of soybean milk (probably Oriental) and 3 samples of modern U.S. soybean milk reconstituted (Soyalac for infants, all purpose Soyalac, Soyagen canned from Loma Linda Food Co., California).

Figures show: (199-201, p. 981) Comparison of whipping ability of egg albumen and soybean albumen in different proportions and combinations. (202) Flow sheet for the acid hydrolysis process used in making HVP soy sauce. Address: Protein By-Products Research, Research and Technical Div., Wilson & Co., Inc., Chicago, Illinois.

1021. Hui Manaolana Foundation (formerly Niji-no-Kai). 1951. Japanese foods (Tested recipes). Honolulu, Oahu, Hawaii: International Institute, Y.W.C.A. 122 p. Illust. (some colored). Index. 24 cm.

• **Summary:** The Hui Manaolana was formerly named Niji-no-Kai and is affiliated with the International Institute of the Y.W.C.A. The book was inspired by Mrs. Isaac M. Cox (Catherine E.B. Cox), an educator and volunteer advisor to the Y.M.C.A. Almost all the recipes in this book have been submitted by members of the group, and that woman's name appears next to the recipe title. Shoyu is called for in many recipes.

Following a preface and an introduction, the recipes are organized by type. The many interesting ads related to soyfoods, scattered throughout the book, are cited elsewhere. Helpful hints (p. 12): "To prevent tofu from crumbling, soak in salted water for a while before using." On p. 15 are 4 menus each for breakfast, lunch or supper, and dinner. Soups: Chiri (Fish & tofu soup). Kenchin (Vegetable soup with tofu). Basic miso soup. Satsuma jiru (Miso soup with chicken & vegetables). Oio fish dumplings in miso soup. Miso soup with long rice. Rice: Azuki meshi

(Rice with red beans). Sekihan (Steamed azuki rice). Inari zushi (Sushi rice in aburage).

Fish and seafoods: Ebi no teriyaki (Barbecued shrimp). The sauce consists of: 3/4 cup shoyu, 1 teaspoon gourmet powder [Ajinomoto], 1/2 cup sugar, 1 teaspoon grated ginger, 1 clove garlic [crushed]. Mix well). Katsuo no miso yaki (Tuna broiled with miso sauce). Katsuo teriyaki (Broiled fresh tuna). Meat and chicken: Sukiyaki (with tofu). Pork and tofu. Tofu: Gan modoki [Ganmodoki]. Ankake tofu (Boiled tofu with thick sauce). Tofu with crab meat egg roll. Tofu tempura. Okara (Bean curd residue dish). Iri dofu. Okara nira (with aburage). Yudofu with goma [sesame] miso sauce. Fried tofu cooked in miso. Koya dofu (Frozen soybean curd cooked in shoyu).

Vegetables: Kiriboshi and aburage. Nikomi oden with yakidofu. Cabbage with mustard & miso sauce. Shira ae—Watercress (With tofu dressing). Shira ae (Vegetable with tofu sauce). Daikon sumiso ae (Turnips in miso). Nikomi oden (Vegetables with miso). Nishime (with tofu). Nasu no shigiyaki (Fried eggplant with miso sauce). Negi—nuta (Green onions with miso sauce). Green pepper—miso yaki. Kuromame (black soybeans). Noodles: Kitsune udon (With aburage). Relishes: Konbu no tsukudani (Seasoned seaweed). Tekka miso (Fried miso with gobo). Kaibashira no tsukudani (Scallops cooked in shoyu). Shoyu turnips. Desserts: Many with kanten, azuki beans, and azuki koshi an (Sweetened bean paste).

Glossary (p. 97-98) includes: Aburage (fried bean curd). An (red bean paste). Azuki (red beans). Edamame (soybeans). Fu (gluten cake). Gourmet powder (monosodium glutamate). Kanten (gelatin made from agar-agar). Karashimiso (mustard miso). Kinako (yellow soy bean powder). Kirazu (bean curd residue). Konbu (seaweed). Kuromame (black soy beans). Miso (fermented rice and soy beans). Nori (sea weed). Okara (bean curd residue). Shirae (vegetables with mashed tofu). Shoyu (soy sauce). Sumiso (vinegar and miso sauce). Sushi. Tare (thick shoyu sauce). Tempura (fritters). Teriyaki (barbecue). Tofu (bean curd). Ume (pickled plum). Wakame (sea weed). Yakitofu [yakidofu, broiled or grilled tofu]. Address: International Institute Y.W.C.A., Honolulu, Hawaii.

1022. Law, James Thomas. 1951. Law's grocer's manual. 4th ed. Edited and revised by W.G. Copsey. London: William Clowes and Sons, Ltd. xv + 814 p. See p. 467, 510. Illust. 22 cm. With a foreword by W.R. Austen Hudson, M.P., F.G.I.

• **Summary:** Page 467, under the heading "Soy bean," discusses soy sauce, tofu, natto, miso, and soy milk. Page 510 gives more details on tofu and describes (quaintly and inaccurately) how to make this "fresh bean cheese." "The beans are soaked in water for 3 or 4 hours, cooked, and reduced to a paste. The milky fluid is strained through a coarse cloth to remove stalk and fibre [okara], and when

cooled is precipitated by the addition of crude salt. The precipitate, which is rich in protein and fat, is then kneaded and pressed into cakes called fresh Tofu. They are then dipped into a solution of curcuma." Address: W.G. Copsey is Secretary of the Inst. of Certified Grocers; Hudson is President of the National Assoc. of Multiple Grocers.

1023. Murakami, H.; Okuyama, K.; Sugita, S. 1951. Kôji no kenkyû. II. Jôzô kôjikin no sentaku (1) Shôyu jôzô kôjikin [Studies on koji. II. Selection of Aspergilli for the Japanese brewing industry (1) Aspergilli for shoyu brewing]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 46(12):483-77. [13 ref. Jap; eng]

• **Summary:** Aspergilli were selected from shoyu brewing (14 strains), miso (14), amasake (9), sake (6), submerged culture for amylase production (5), and submerged culture for protease production (5). This report describes how to select Aspergilli for shoyu brewing and their classification by availability for shoyu brewing.

1024. Riley, John W., Jr.; Schramm, Wilbur. 1951. The Reds take a city: The Communist occupation of Seoul, with eyewitness accounts. New Brunswick, New Jersey: Rutgers University Press. xiv + 210 p. See p. 82-83. Index. 21 cm.

• **Summary:** Narratives by eminent Koreans, translated by Hugh Heun-wu Cynn (of New York City). The chapter titled "Treatment of reactionaries" (p. 80+), the personal story of Chul-Hoe Koo (one of Korea's best-known newspaper reporters) explains that a Communist functionary from the Police Office had come to his house and told him to come with to the Security Police Office, where he was questioned and accused of being a reactionary and a "traitor to the nation." After taking him down to the basement, his examiner wrote up his case (p. 82-83). "Breakfast had been skipped, but after a while we were given a ball of bean and barley and a chestnut-size doen-jang [bean cheese of salty taste]. Suddenly, while we were eating, an examiner got up and savagely slapped the face of the man next to me. 'Aren't you going to tell the truth, you scoundrel?' he yelled."

Note: This is the earliest English-language document seen (March 2009) that uses the word "doen-jang" (or doen jang) to refer to Korean-style soybean jang (miso). Address: 1. Sociologist, Rutgers Univ., Air Force team.

1025. Tawada, Shinjun. 1951. Okinawa yakuyo shokubutsu yakukôzan [Medicinal uses of Okinawa pharmaceutical plants. 2nd ed.]. Naha, Okinawa: Kyûyôdô. 178 p. See p. 90. Illust. 1st ed. 1931. [Jap]

• **Summary:** Page 90 discusses: "Daizu (mame, miso mame). *Glycine max* Merrill. Toofu maami, ufuchijaa ufuchizaa." This book is handwritten in Japanese, with the names of the plants given in Latin. It discusses the uses of

many species, which are systematically arranged. Mimeographed in Okinawa. Address: Japan.

1026. **Product Name:** Kanemasa Edo Miso, and Koji.
Manufacturer's Name: Fujimoto Products & Co. (Fujimoto Shokai).
Manufacturer's Address: 302 S. 4th West, Salt Lake City, Utah. Phone: 4-8279.
Date of Introduction: 1952. February.
New Product–Documentation: Ad (¼ page) in Nichi-Bei Jiji Jushoroku [Japanese American Times Directory]. 1952, p. 461. The top 1/3 of this ad is in English: Fujimoto & Co., 302 So. 4th W. St., Salt Lake City, Utah. Phone: 4-8279. Japanese: Fujimoto Shôkai. Their Japanese-style Kanemasa logo is shown. They sell Edo miso and koji. Directory entry p. 462, under “Stores.” English: Fujimoto Co.

1027. **Product Name:** Miso, and Shoyu.
Manufacturer's Name: Nakamura Miso Shoyu Jozo Gaisha (Nakamura Miso-Shoyu Mfg. Co.).
Manufacturer's Address: 1935 Ararahoe St., Denver, Colorado. Phone: TA. 6773.
Date of Introduction: 1952. February.
How Stored: Refrigerated.
New Product–Documentation: Nichi-Bei Jiji Jushoroku [Japanese American Times Directory]. 1952, p. 485. Under “Food Products.” In Japanese: Nakamura Miso Shôyu Jôzô Gaisha. In English: Nakamura Miso-Shoyu Mfg. Co., 1935 Arapahoe St., Denver, Colorado. Phone: TA. 6773.

1028. Nichi-Bei Jiji Shinbunsha / Nichi Bei Times. 1952. Nichibei jiji jûshoroku [Japanese American Times directory]. San Francisco, California: Nichi-Bei Shinbunsha. 500+ p. Index. 22 cm. [Eng; Jap]
• Summary: An index at front of book is alphabetical by states, and within each state, alphabetical by city name. Telephone prefix abbreviations are spelled out on the first page of each city, e.g., YU = Yukon. Includes ads for Yamato Sukiyaki, 717 California St., high class restaurant (p. 17) and Soko Hardware 1698 Post St., San Francisco. They also import (p. 18). Address: 1375 Eddy St., San Francisco, California.

1029. *Los Angeles Times*. 1952. International flavors spark Hawaiian food. March 2. p. E11.
• Summary: Take your wife to Hawaii and you may come home with an international cook, who has a knowledge of ajinomoto, Japanese shrimp tempura, teriyaki steak on bamboo skewers, seaweed salads, or charcoal-broiled octopus covered with miso sauce.

At the Honolulu YMCA, a full five-week course of cooking classes costs \$5 plus a \$5 lab fee.

1030. Nakano, Masahiro; Matsuura, Shinji. 1952. [Research on koji starter (*tane-kôji*). III. On the rate of germination of the mold spores]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 6. p. 157-60. March. English-language summary bound at the end of No. 6, p. 30. [Jap; eng]

• Summary: The hourly rate of germination for koji starter mold spores was examined by the direct counting method, as reported in part I, and the so-called “active spore numbers” were calculated. Nine samples of koji starter were examined: For miso (4), shoyu (3), and shochu (3), and each was given a code letter, M, S, and T respectively in the figures 1-9.

Conclusions: (1) Germination starts at about 3 hours and arrives at a stationary phase at about 6 hours in practical koji making; at this stage no control of mycelium growth is required. (2) There are products with rapid or with slow germination according to the blends of the makers. (3) Distinct differences in “active spore numbers” were found. In practice, the greater the “active spore numbers,” the smaller the amount of koji starter required for making koji. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1031. Breirem, Knut. 1952. Oscar Kellner (May 13, 1851–September 22, 1911). *J. of Nutrition* 47(1):3-10. May.
• Summary: “It is generally accepted that German science in the period 1850 to 1914 was of very high standing... During this period Germany was a Mecca for students seeking advanced training in the physiological and chemical sciences.” F. Honcamp has stated that in German agricultural chemistry, there were three great pioneers or pathfinders: Liebig, Hellriegel, and Kellner.

Oscar Keller was born in Tillowitz, Silesia, on 13 May 1851. Note: Today [2001] this small town, called Tulowice, lies in southwestern Poland. He fought in the Franco-German war [Franco-Prussian War] in 1870-71, then finished high school and went to the universities in Breslau and Leipzig to study the basic sciences, especially chemistry. An extremely diligent young man, he got his Ph.D. in the short space of three years from the University of Leipzig. His first scientific paper was published in 1874. As a young doctor Kellner became an assistant in animal chemistry at the Agricultural Academy of Proskau (Silesia).

In 1876 Kellner went to Hohenheim at Stuttgart (Württemberg). Here he became an assistant to Prof. Emil Wolff, who was of Danish origin. Before coming to Hohenheim Wolff had been the first director of the experiment station Möckern (Moeckern), at Leipzig, the first agricultural experiment station in Germany—erected in 1851, the year Kellner was born. Kellner began to study feed evaluation, a field in which he later became the master.

In 1880, at age 29, he was invited to the Imperial University of Tokyo as a professor of agricultural chemistry.

He stayed in Japan for 12 years and left a strong mark on the foundations of agricultural chemistry in Japan. In Japan, he married a Japanese woman. In 1892 he was called back home to Germany to become director of the agricultural experiment station at Moeckern. In 1905 the first edition of his book, *Ernaehrung der landwirtschaftlichen Nutztier* (*The Feeding of Livestock*) was published. Many subsequent editions were published, the 10th in 1924. An English translation was published in 1910. He was also the editor of *Biedermann's Centralblatt für Agrikulturchemie* and *Die Landwirtschaftlichen Versuchsstationen*. Endowed with a strong personality and a love of work, he accomplished a great deal. He died in the autumn of 1911 of a heart attack at age 60.

An excellent full-page portrait photo shows Oscar Kellner. Note: While in Japan, he wrote three original and important articles each on miso and koji from 1889 to 1895. Address: Royal Agricultural College of Norway, Div. of Animal Nutrition, Vollebakk, Norway.

1032. Inamori, Shôjiro; Inamori, Michisaburo. 1952. Karushiumu kyôka miso no kenkyû. I. [Studies on calcium fortified bean-paste (miso). I. Experiment of brewing the bean-paste fortified by adding calcium carbonate]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 30(9):370-74. Sept. English-language summary on p. 39. [9 ref. Jap; eng]

• **Summary:** For fortification with a calcium salt, calcium carbonate is the most suited. When added at a level of less than 1%, it exerts no influence on the quality of the finished product. Address: Inamori Laboratory, Inamori & Co., Japan.

1033. Mogi, Masatoshi; Nakajima, S.; Iguchi, N. 1952. Kyôka miso no kenkyû. II. Shigaisen shôsha ni yoru miso kôji-kin no furabin seisan ni tsuite [Studies on fortified bean-paste (miso). II. On the riboflavin production by ultraviolet-induced mutants of *Aspergillus oryzae*]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 30(9):363-69. Sept. English-language summary on p. 39. [10 ref. Jap; eng]

• **Summary:** By treating the most excellent strain of *Aspergillus oryzae* (described in a previous report) with ultraviolet rays, 743 mutants were obtained. The authors classified them into 13 types. Of these mutants, 19 strains which produced exceedingly large amounts of riboflavin were selected culturing in Pfeffer's solution. Four strains produced 3 times as much riboflavin as the parent strain in soybean koji and 3 strains twice that of the latter in rice koji. A fortified miso, made by using the most abundant riboflavin producing strain, contained twice as much riboflavin as that made with the parent strain. Address: Noda Industrial Science Lab. Japan (Noda Sangyo Kagaku Kenkyujo).

1034. Nakano, M.; Ebine, H. 1952. Eiyô kyôka miso no kenkyû. I. Karushiumu kyôka miso [On the manufacture of enriched miso. I. Enrichment with calcium]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 7. p. 155-62. Sept. English-language summary p. 22-23. [5 ref. Jap; eng]

• **Summary:** Precipitated light calcium carbonate is suitable both technically and economically as a calcium source. Up to 1% can be added to the miso without a noticeable change in the smell or taste. Details of the procedure for adding the calcium carbonate during the miso-making process are given. It is added after the koji starter to the steamed rice. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1035. Nakano, Masahiro; Ebine, Hideo. 1952. Eiyô kyôka miso no kenkyû. II. Bitamin kyôka miso [On the manufacture of enriched miso. II. Enrichment with vitamins A, B-1 and B-2]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 7. p. 163-66. Sept. English-language summary p. 23. [6 ref. Jap; eng]

• **Summary:** Concentrated cod liver oil was used as the source of vitamin A; it was used as a homogenisate with the gelatin solution. Vitamins B-1 and B-2 were added in crystalline form. These vitamins were dissolved in the "pitching water" and added to the initial stage of ripening. Changes in the content of each vitamin were then examined.

Vitamin A content decreased rapidly. The initial 5,000 I.U. [International Units] had decreased to 1,700 I.U. after 10 days and to only a trace after 30 days. Vitamin B-1 content decreased somewhat, whereas vitamin B-2 content increased, and this showed in vitamin B-2 production in the koji mold. The fates of these vitamins were the same whether they were added alone or in combination. Their addition did not decrease the quality of the miso. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1036. Tamura, Gakuzo; Kirimura, J.; Hara, H.; Sugimura, K. 1952. Bisei-butsu teiryô-hô ni yoru miso no amino-san sosei ni tsuite [The microbiological determination of formation of amino acids in "miso"]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 26(9):483-85. Dec. 10. [3 ref. Jap; eng]

• **Summary:** The amino acid composition of Hatcho miso (ratio of soybeans:rice is 10:0; fermentation time 2-3 years), Sendai miso (10:2; 1 year), and Edo miso (10:12; 6 days) were determined using a microbiological method, and are listed in detail. Little decomposition of essential amino acids during fermentation was found. Address: 1-2. Dep. of Agricultural Chemistry, Faculty of Agriculture, Univ. of Tokyo; 3-4. Shokuryo-cho, Shokuryo Kenkyu-jo.

1037. Lockwood, Lewis B.; Smith, A.K. 1952. Fermented soy foods and sauce. *Yearbook of Agriculture (USDA)* p. 357-61. For the year 1950-51. Crops in Peace and War.

• **Summary:** By 1975 Lockwood was at the Biology Dept., Western Kentucky Univ., Bowling Green, KY (see Smith & Berry 1975). Address: U.S. Dep. of Agriculture (Smith; NRRL, Peoria, Illinois).

1038. Petelot, Alfred. 1952. Les plantes médicinales du Cambodge, du Laos et du Vietnam [The medicinal plants of Cambodia, Laos, and Vietnam. Vol. 1]. *Archives des Recherches Agronomiques au Cambodge, au Laos et au Vietnam* No. 14. 408 p. See p. 276-81. [20 ref. Fre]

• **Summary:** The section on the soybean (*Soja hispida* Moench, p. 276-81) includes the vernacular names: Vietnamese: *Dau nanh, Dau tuong, Dau hon, Dau xa*. Cambodian: *Sandek sieng*. Laotian: *Mak toua kon, Ta ton*.

Discusses: Whole dry soybeans, green vegetable soybeans (*Elles peuvent... être consommées à l'état jeune à la façon des flageolets,...*), soymilk (*elles donnent une sorte de lait mousseux et crémeux,...*), nutritional composition, tofu (*le graines sont utilisées pour la préparation d'un fromage, le Teau-fou des Chinois, le dau-phu des Vietnamiens*), composition of fresh and moisture-free tofu, soy oil and its properties (In Europe, above all in England, this oil is used to make soap and margarine. Its drying properties enable it to be used to make paint), soybean cake (used as animal feed; it is rich in lysine), lecithin, vitamin B, the Agronomic Institute of Ankara, Turkey, has found soya to be superior as an animal feed to all other legumes cultivated in Turkey, defatted soybean meal, useful in diabetic diets, Haberlandt of Vienna suggests use as human food, fermented soy products and rice koji, natto, miso, shoyu, *Tsao Yu* of China, *tuong dau* of Vietnam, Japanese natto, MSG. Address: Chargé de Cours à la Faculté Mixte de Médecine et de Pharmacie de Saigon [Vietnam].

1039. Nakano, Masahiro; Yoshikawa, S.; Ebine, H. 1953. Kome miso no genryô haigô ni tsuite [On the proportion of raw materials used in manufacturing kome-miso (rice-miso)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 8. p. 173-77. June. English-language summary p. 16-17. [Jap; eng]

Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1040. Nakano, Masahiro; Ebine, Hideo. 1953. Miso no iro no kenkyû. Manseru hyô shokukei no ôyô [The color of miso: Use of Munsell's color notations]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 8. p. 179-85. June. English-language summary p. 17. [9 ref. Jap; eng]

• **Summary:** The color of miso can be well expressed using Munsell's color notations by the measurement of tristimulus

values at the miso surface. Values are given for: Shiro miso, Shinshu miso, Edo or ama-miso, mugi or inaka miso, Sendai miso, and Hatcho miso. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1041. *Miso Gijutsu (Miso Technology)*. 1953—. Serial/periodical. Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo 104, Japan. Vol. 1, No. 1. July 30, 1953. [Jap]

• **Summary:** Name changed to *Miso no Kagaku to Gijutsu* with issue No. 167, in Jan. 1968. Address: Tokyo, Japan.

1042. *Miso Kagaku (Miso Science)*. 1953—. Serial/periodical. Zenkoku Miso Gijutsu Kurabu, Tokyo, Japan. [Jap]

Address: Tokyo, Japan.

1043. David-Perez, Enriqueta. comp. and ed. 1953. Recipes of the Philippines. Philippines: Published by the author. Printed by Capitol Publishing House, Inc. (Philippines). 124 p. Illust. by S. Serna. No index. 23 cm.

• **Summary:** Almost all the recipes in this book have Filipino names, with no English translation of those names. A surprisingly large number contain soyfoods, especially *toyo* (soy sauce). The glossary (p. 121-23) states: Miso is miso—a paste made of fermented rice and soy beans. Tajure is “fermented soy beans, caked” [fermented tofu]. Tausi is “fermented [black] soy beans” with salt [soy nuggets]. Tokua is “soy bean curd” [tofu]. Toyo is Filipino-style soy sauce. Recipes followed by an asterisk (*) call for toyo.

Soy-related recipes include: Chicken relleno-I * (p. 15). Chicken pastel * (p. 27). Lengua (with soy sauce, p. 20). Morcon * (p. 21). Pancit molo * (p. 22). Adobo * (p. 24). Arroz caldo with chicken (with 3 tbsp. patis or soy sauce, p. 28). Bañgus en tocho-I (with 1 cube tajure, p. 34). Bañgus en tocho-2 (with 2 tbsp. each tajure and tausi, and 1 cake tokua cut into pieces 3/4 inch long and 1/8 inch wide, p. 35). Bulanglang-1 (with 1 cup tokua, cubed and fried, p. 38). Burong isda (with 1 tbsp. angkak-fermented red rice, p. 39). Sauce for pipi-an (with 1 small jar peanut butter, p. 41). Escabecheng apahap (with 4 pieces tokua, p. 46). Escabeche-Macao style * (p. 71). Escabeche with papaya * (p. 48). Fritada * (p. 50).

Kari-karing pata (with ½ cup ground toasted peanuts or peanut butter, p. 51). Lengua estofada * (p. 53). Lumpia labong-Bamboo shoot (with 5 bean cakes-tokua, p. 55). Lumpia sauce (with ½ cup toyo sauce, p. 56). Lumpia with papaya * (p. 56). Lumpia with peanuts (with 2 squares tokua-diced, 2 tbsp. toyo-soy sauce, and 1 cup ground peanuts, p. 57). Lumpia with ubod-2 (with 2 cakes tokua, and toyo to taste, p. 58). Meat balls with “sotanghon” * (p. 59). Menudo de rabo * (p. 60). Miso-tomato sauce (with 2 tbsp. miso-soy bean paste, p. 61). Paksiw na pata * (p. 64). Paksiw-pork (with soy sauce, p. 64). Paksiw na lechon

(with 3 tbsp. soy sauce, p. 65). Pancit guisado * (p. 65). Pancit “luglug” (with ½ cup soy bean cake—tokua—cut into small cubes, p. 66). Pork tapa * (p. 72). Umba (with 2 tbsp. toyo and 1 heaping tbsp. tausi, p. 80). Pastillas de mani (with 1 can ground peanuts, p. 89).

A glossary at the end contains brief definitions of uncommon ingredients. Definitions of the soy-related ingredients above are taken from this glossary. Angkak is “red-colored grains of rice used as coloring for fermented fish.”

Note 1. This is the earliest English-language document seen (Feb. 2009) that uses the word *tajure* to refer to fermented tofu, or the word *misu* which refers to miso.

Note 2. On the title page is printed “4th printing—May 1956.” Address: P.O. Box 3288, Manila, Philippines.

1044. Chatfield, Charlotte. 1954. Food composition tables: Mineral and vitamins, for international use. *FAO Nutritional Studies* No. 11. 117 p. March. [539* ref]
Address: Nutrition Div., FAO, Rome, Italy.

1045. Katsui, Goichiro; Takata, Ryohei. 1954. Bitamin A kyōka miso no seizō ni kansuru kenkyū. I. Jukusei miso ni kuwaerareta bitamin A no anteido [Studies on the preparation of miso, fortified with vitamin A. I. Stability of vitamin A added to the ripened miso]. *Bitamin (Vitamins, Kyoto)* 7(3):229-232. March. [5 ref. Jap]
Address: Dep. of Industrial Chemistry, School of Engineering, Univ. of Kyoto.

1046. Kay, Tutu. 1954. Wiki wiki kau kau. Honolulu, Hawaii: Watkins Printery, Ltd. 77 + [2] p. Illust. 22 cm. [Eng]

• **Summary:** Cover text: “Quick cooking recipes from Hawaii.” Contains a glossary of Hawaiian words, a brief history and: “How to have a luau, make a lei, sew a muumuu, speak Hawaiian, and entertain simply.”

Soy-related recipes: Meat sticks (with “shoyu sauce,” p. 15). Deviled macadamia nuts (with Worcestershire sauce, p. 19). Lorie Bachran’s spareribs, a la apricot (with shoyu, p. 22). Taylor Mercer’s filet de boeuf flambe (with “shoyu sauce,” p. 23). Suggested dinner menus: Japanese miso soup and sukiyaki (p. 24). Abalone with cucumber (and shoyu, p. 25). Meat sticks (with “Soy Sauce,” p. 26). Hot buttered abalone (with shoyu, p. 27). Note: Many other meat, poultry and fish dishes are also seasoned with shoyu or Worcestershire sauce.

Sukiyaki (with tofu and shoyu, p. 54). Address: [Hawaii].

1047. Thorpe, Jocelyn Field; Whiteley, M.A. 1954. Soya bean. In: J.F. Thorpe and M.A. Whiteley. 1937-1956. Thorpe’s Dictionary of Applied Chemistry. 12 vols. 4th ed.

London, New York, Toronto: Longmans, Green & Co. See vol. XI, p. 46-48. 23 cm. [15 ref]

• **Summary:** The section titled “Soya Bean” has the following contents: Introduction. Composition of soya beans. Soya-bean products: Oil, cake and meal, flour, milk, soy sauce (“known in Japan as ‘Shoyu’ and in the west under such names as ‘Worcester Sauce,’...”), miso, tofu, immature soya beans, roasted soya beans (eaten like peanuts), coffee substitute, chocolate substitute. Agricultural uses (green fodder, hay, silage, bean pods and straw). Sir Jocelyn Field Thorpe lived 1872-1940.

1048. Thorpe’s dictionary of applied chemistry. 4th ed. Revised and enlarged. Vol. XI. Soil-Z. 1954. London, New York, Toronto: Longmans, Green and Co. x + 1145 p. See p. 46-48. Illust. Index. 23 cm. [16 ref]

• **Summary:** The entry for “Soya bean” (p. 46-48) was written by A.W. Marsden, M.Sc., D.I.C., A.R.C.S., F.R.I.C., Director, Commonwealth Bureau of Dairy Science, Shinfield, near Reading, England. Contents: Introduction. Composition of soya beans. Soya-bean products: Oil, meal, flour, soya-bean “milk,” soy sauce, Worcestershire sauce, miso, tofu, immature soya beans (eaten, after shelling and cooking, just like green peas), sprouts, roasted soya beans (eaten like peanuts), coffee substitute, chocolate substitute. Agricultural uses. Soya bean oil (see Vol. IX, 27a, 29a, 53c, 55c). Address: London, England.

1049. Valignano, Alessandro. 1954. Sumario de las cosas de Japón (1583). Adiciones del Sumario de Japón (1592). Editados por José Luis Alvarez-Taladriz [Summary of the things of Japan (1583). Additions to the Summary of Japan (1592), edited by José Luis Alvarez-Taladriz]. Tokyo, Japan: Sophia University. xix + 205 p. + 346 p. 26 cm. Series: Monumenta Nipponica Monograph No. 9. [230 ref. Spa]

• **Summary:** This book consists of two separate books by Valignano bound as one; each is paginated separately. In the 1st book, on page 93, the author mentions that he bought the necessary provisions, rice, miso, dried fish, etc. Footnote 240 gives a long definition of *misso* (sic, miso) in Italian from *Saverio Orientale*, by Bernardino Ginnaro (1641, Naples).

An appendix near the end of the 2nd book (published in 1592; see p. 317-330) begins with a Treatise on how they own land and calculate rents in Japan. It starts (p. 318) with a reference to “Principio [1601-1603], c. 6.” In a long footnote on p. 320, he states: “To measure rice, wheat, barley, *Goma* [sesame seeds, used to make oil], *Mame* (see below), *Abura* (vegetable oil), *Saque* [saké], etc. they use certain measures such as the shaku, go, sho, to, koku, etc.” Looking in more detail at the entry for “*Mame*,” after the word, we read (in square brackets), the Chinese character for “bean” followed by the Portuguese words ‘Feijoes, ou graos de Iapao’ ib. [VJP 150],...” This means that the word

“Mame” means beans or Japanese beans. They are described in the VJP which, according to the abbreviations section at the front of this book (p. xix) means “Vocabulario de la Lingoa de Iapam. [Nagasaki, 1603-1604]. This is the famous first dictionary of Japanese in a European language, Portuguese, compiled by the Jesuit mission in Japan, and published by the Jesuits in Nagasaki in 1603-04. If we look on page 150 of that dictionary, we do indeed see: “Mame. Feijoes, ou graos de Iapao.”

Note 1. Today, the word Japanese “mame” has two meanings: (1) Beans [generically, all types]. (2) A soybean. When the word *mame* is the first part of a compound word, it usually refers specifically to the soybean: *mameabura* is soybean oil—more commonly called *daizu abura*; *mamekasu* is soybean meal—more widely called *daizu kasu*; *mamemaki* is the ceremonial scattering of roasted soybeans at Setsubun. Therefore: It cannot be stated clearly that the soybean is mentioned on this book, or that the concept of a soybean, apart from beans in general, was clear to the author. However given this context of how foods are measured, we think it is more likely that he was referring to beans in general than to one particular type of beans. If he wanted to refer specifically to soybeans, they are clearly mentioned as *Daizzu* in the VJP dictionary which he cites! *Daizzu* [Daizu, the Japanese word for soybeans] are defined as: “Mame. Graos, ou feijoes de Iapao.”

Note 2. *Principio* is an abbreviation (see p. xvii) that refers to a book titled *Libro Primero del principio y progreso de la Religion christiana en Jappon...* by Padre Alexandro Valignano of the Company of Jesus, 1601. Manuscript in the British Museum.

About the author: On p. 2-3 we read: The padre Alessandro Valignano (ca. 1539-1606) of the Society of Jesus [Jesuit] visited Japan three times, 1579-1582 (during the rule of Oda Nobunaga, who died in 1582), 1590-1592 (during the rule of Toyotomi Hideyoshi, who died in 1598), and 1598-1603 (during the rule of Tokugawa Ieyasu, who died in 1616). The fruit of his first trip was the *Sumario*, published in 1583, of his second trip was the *Adiciones del Sumario*, published in 1592, and of his third trip was the *Apologia de la Compañia de Jesûs de Japón y de la China* (1598) and the *Principio y progreso de la religion cristiana en Japón*.

His three visits correspond to three very important periods in Japanese history, in the transition from decentralized feudalism to centralized feudalism or from feudal anarchy to feudal order: the period of Azuchi (Nobunaga), of Momoyama (Hideyoshi), and of Tokugawa (Ieyasu). His writings capture magnificently the history of these 3 periods.

Because he is a Christian and a Jesuit father (Roman Catholic), his main interest is in religious affairs in Japan.

Brief biography: Valignano was an Italian missionary. 1566—He entered the Society of Jesus. 1574—Traveled to

Portuguese India. In Asia, he helped to develop missionary work in Goa, Macau, and especially Japan, where he supported the mission with a share of the silk trade, developed a native clergy, and saw Christianity grow to some 300,000 adherents.

1050. Zain, Sutan Muhammad. 1954. *Djalan bahasa Indonesia* [Indonesian style]. Djakarta: Dharma. 117 p. See p. 10. 25 cm. [Ind]*

• **Summary:** This is a grammar of the Indonesian language. Page 10: tautjo [Indonesian-style miso], tauge [soy sprouts].

1051. *Zenkoku Miso Shoyu Nenkan (Miso and Shoyu Yearbook)*. 1954—. Serial/periodical. Taito-ku, Tokyo: Shokuhin Sangyo Shinbunsha. [Jap]*

• **Summary:** Includes 2 parts: A directory and industry statistics. Address: Tokyo, Japan.

1052. Millstein, Gilbert. 1955. On a Sunday in Chinatown. *New York Times*. Feb. 27. p. SM22-23, 53.

• **Summary:** A fascinating study of New York City’s Chinatown on a typical Sunday. It takes place on Mott Street, and Pell, Doyers, Bayard, and the Bowery; there the Chinese gather to talk, shop, visit, and eat. People typically enjoy a late breakfast, which is large and with many dishes, including “*dow foo sui mei* (bean curd and meat bun).” One may also visit a coffee shop, tiffin house, or noodle shop. When finished, “the Chinese then goes to his family association. The outstanding family associations in Chinatown are those of the Chins, the Lees, the Wongs, the Ngs, the Leongs, the Chus,…” Chinese laundrymen may visit their laundrymen’s association.

While visiting Chinatown, visitors can buy “brown bean sauce, black bean sauce,... soy sauce,... and oyster sauce.”

1053. Takahashi, Jusaku. 1955. 2, 3 no bitamin B-12 no shigen ni tsuite. I. [Studies on several sources of vitamin B-12. I.]. *Eiyô to Shokuryo (J. of Japanese Society of Food and Nutrition)* 8(2):25-27. March 11. [Jap]

• **Summary:** A significant amount of vitamin B-12 is found in natto and miso, although little is found in the whole soybeans from which these products are made. The amount of B-12 in soybeans and various soyfoods is as follows (measured in nanograms per 100 gm): Fresh whole dry soybeans 8, Tengu natto (sold commercially) 83, Shinshu miso 170, Shinshu miso (boiled for 15 minutes) 170, Shinshu miso (boiled for 30 minutes) 162.

When natto is stored at 30°C, vitamin B-12 is slowly lost. It drops from 83 nanograms per 100 gm when fresh to 49 nanograms per 100 gm after 3 days.

1054. Ebine, Hideo; Ito, Hiroshi; Nakano, Masahiro. 1955. *Eiyô kyôka miso no kenkyû. III. Miso no karushiumu keitai ni tsuite* [On the manufacture of enriched miso. III. Calcium

salts in enriched miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 10. p. 149-53. April. [5 ref. Jap]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1055. Ebine, Hideo; Ito, Hiroshi; Koiso, Kenji; Nakano, Masahiro. 1955. Dashi daizu miso ni tsuite [On soybean cake miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 10. p. 133-41. April. [4 ref. Jap]

• **Summary:** Describes how to make miso out of defatted soybean meal. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1056. Ebine, Hideo; Koiso, Kenji; Nakano, Masahiro. 1955. Miso no danshō sayō ni kansuru kenkyū. I. Kaku shu miso no danshō nō [Studies on the buffer action of miso. I. On the buffer action of every type of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 10. p. 143-47. April. [4 ref. Jap]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1057. Ebine, Hideo; Nakajima, Michie; Nakano, Masahiro. 1955. Eiyō kyōka miso no kenkyū. IV. Bitamin, karushiumu kyōka miso ni tsuite [On the manufacture of enriched miso. IV. Enrichment with vitamins B-1, B-2 and calcium]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 10. p. 155-60. April. [8 ref. Jap]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1058. Fujisawa, Shinkichi. 1955. Shokuhin moshiku wa shōyu, miso shikomi genryō to shite tekisuru butsuruyō no seizō hōhō [Food product for brewing of soy sauce or fermented soybean paste]. *Japanese Patent* 30-4442. June 28. 3 p. (Chem. Abst. 51:13311b). [Jap]
• **Summary:** A protein-rich food product is prepared from sweet or white potatoes by addition of organic and inorganic nitrogen sources followed by cultivation with microorganisms. The product contains large amounts of vitamins and proteinaceous components and can be used as a food or as an ingredient in the production of soy sauce (at 60%) or miso (at 30%). Address: Gifu-ken, Inaba-gun, Numa-machi?, Okan 698, Japan.

1059. Fujisawa, Shinkichi. 1955. Shokuhin moshiku wa shōyu, miso shikomi genryō to shite tekisuru butsuruyō no seizō hōhō [Food product for brewing of soy sauce or fermented soybean paste]. *Japanese Patent* 30-4443. June 28. 2 p. (Chem. Abst. 51:13311c). [Jap]

• **Summary:** Soybeans or defatted soybeans are hydrolyzed with acid or alkali, neutralized, mixed with fish meal or

pressed cake of chrysalis and inorganic nitrogen sauces, cultured with slime bacteria, and fermented with yeast. Address: Gifu-ken, Inaba-gun, Numa-machi?, Okan 698.

1060. Strayer, George M. 1955. Why Japan wants clean soybeans. Blow to U.S. exports to Japan. *Soybean Digest*. Dec. p. 4-5.

• **Summary:** “Japan is a country of over 80 million people. Total area is about the same as California. Only a very small part is tillable.”

“Last year Japan imported a total of about 750,000 metric tons of soybeans (27.5 million bushels). About 250,000 tons were crushed in oilseed mills. The remainder went directly into foods usage, producing soy sauce, soybean paste [miso], and soybean curd [tofu]. Over 90% of the flakes from the soybean crushing at the oil mills went to these same food plants.

“Soybeans are the life blood of Japan. They are an absolute necessity, for they are the food of the people. They are used directly, not indirectly, as is our soybean meal in the form of livestock products.

“There are over 3,000 vegetable oil mills in Japan, all except about 30 of them small community plants. Only 33 are on the list to receive imported soybeans. There are over 6,000 manufacturers of soy sauce in Japan. There are over 50,000 manufacturers of tofu or soybean curd, and there are several thousand small manufacturers of soybean paste or miso.

“These small plants do not and cannot have cleaning facilities. They must use the soybeans as they come. They prefer domestic beans, second choice is Chinese beans, and next come our beans. Why? Only one answer—foreign material. Their reaction is exactly as would be yours under similar conditions. They merely ask—why can you not sell us clean soybeans?”

The Japanese are importing more and more soybean from Red China. The Ministry of International Trade and Industry (MITI) favors increased trade with China. “Authorized imports of soybeans [to Japan] to 335,000 metric tons. Of these, 203,000 metric tons were allocated directly to oil mills and food manufacturers. They may be purchased on a global basis—wherever the buyer can buy at the lowest price and find acceptable supplies. Oil millers will favor U.S. beans because of higher oil content, while food manufacturers will probably buy Chinese beans when available.

“The remaining 132,000 tons were allocated to import firms. If a firm had a record of U.S. imports during the previous year the quota for that firm is based on 50% of the tonnage handled. But if a firm imported Chinese soybeans during that same period, the firm’s quota is based on 100% of that tonnage.

“As soon as I discovered the content of the allocation I called it to the attention of embassy officials here in Tokyo,

and a protest was filed with the Japanese government. However, at this writing much more work remains to be done.

“As closely as can be figured about 9 million bushels of soybean business was lost by the U.S. in this one allocation.

A large photo shows George Strayer standing behind a podium, addressing a room full of men seated in chairs. A movie projector is visible in the center aisle. The caption reads: “Strayer addressing meeting of 110 representatives of the soybean industry in Japan at the University Club in Tokyo Nov. 14. Invitations were issued by W.D. Termohlen, Agricultural Attache in the American Embassy, to the leadership of oilseed crushers, miso, soy sauce and soybean curd associations of Japan. At his side is H. Nakamura of Honen Oil Co., who served as interpreter. Mr. Nakamura was a Fulbright scholar in the United States during the 1954-55 university year.”

Note 1. This article was written by Strayer in Tokyo, where he is conducting a marketing study for the U.S. Department of Agriculture.

Note 2. This is the earliest document seen (March 2001) concerning the activities of the American Soybean Association in Asia, in East Asia, or in Japan. This is also George Strayer’s first trip to Japan.

1061. Morohashi, Tetsuji. 1955-1960. *Daikanwa jiten* [Chinese-Japanese historical dictionary]. Tokyo: Taishukan Shoten. 12 vols. + index (alphabetic by phonetic Japanese pronunciation). Cites earliest references (usually in Chinese documents) for Japanese words. [25+ ref. Jap]

• **Summary:** This is widely regarded as one of the greatest Chinese dictionaries. Volume 11, pages 394-95. The following pronunciations of Chinese words may not be correct. (33) Sho. Hishiomiso. Incubate rice or barley or beans, etc. Let them ferment and add salt to make these. (35) Chiang Yuan. Miso and shoyu shop. The shop where miso, shoyu, and pickles are sold. (36). Shoko. A big earthenware pot in which hishio is kept. (37). Shokyū. Shishibishio in a hot soup. (39). Chiang tsai. Miso pickled vegetables. (40). Shosho. Miso and shoyu craftsmen. (41). Shosui. Soup or porridge (Zosui) cooked with miso. Ruiju Meibutsuko, Shakuso orai. (42). Shosei. Hishio with flavor. (43). Shotsui. Hishio pot. (45). Chiang fang. Miso and/or shoyu shop. See (35). (46). Shobutsu Hishio. (47). Hishio no kame. Hishio vat. (48). Chiang-yu. Chinese soy sauce. Cooked soybeans, roasted barley and salt are fermented. The liquid is extracted; a salty seasoning, also called shitaji or murasaki.

1062. Yokoyama, Yoshikuni; Takahashi, J.; Miura, K.; Kawarai, H. 1955. Miso oyobi shōyū no bitamin B-12 ganryō ni tsuite [Studies on vitamin B-12 in miso (fermented bean paste) and soy (sauce)]. *Utsunomiya Daigaku Nogakubu Gakujutsu Hokoku (Bulletin of the*

College of Agriculture, Utsunomiya University) 2(3):411-12. [5 ref. Jap; eng]

• **Summary:** The vitamin B-12 content of miso and soy sauce was biologically tested using the microorganism *Euglena cracilis* var. *bacillaris*. The content differs by product type. Miso ranged from 83-316 m gamma% (probably 0.083-0.316 micrograms/100 gm) and shoyu averaged 450 m gamma% (probably 0.450 micrograms per 100 gm). In miso, the highest level was found in salty Edomiso (316) and the lowest level (83) in Sendai miso made at Utsunomiya University. Address: Utsunomiya Univ.

1063. Griffin, Stuart. 1955. Japanese food and cooking. Rutland, Vermont, and Tokyo, Japan: Charles E. Tuttle Co. 167 p. Illust. No index. 19 cm.

• **Summary:** This basic introduction by an American contains about 70 Japanese recipes. The best known of these in the USA is Sukiyaki. The chapter titled “Ingredients” states (p. 3-4) that ingredients available in the USA include “*fu*, or wheat gluten; *tofu*, or bean curd; *yuba* or dried bean curd [sic]; and *udon*, or macaroni... sugared red beans [azuki],... bean paste squares and jellies, seaweed rice-cakes, pained with *shoyu* sauce.” Sauces and flavorings are very important to Japanese cookery. “Foremost among these is *shoyu*, or soy sauce, made from wheat or barley, soybeans, salt, and water A dark, inky, thirst-provoking liquid, it is similar to that found in Chinese restaurants. The wheat is grilled in a big iron pan until burnt-brown in hue. It is then crushed. [Soy] Beans are boiled in an adjacent cauldron, with a heavy weight on the lid. Boiling lasts three to five hours, then the fire is put out, and the beans are kept in the kettle overnight. Steaming may be used as a method of bean preparation. This process lasts for five or six hours. The grilled wheat and boiled beans are mixed and placed in a malt-room [sic, koji room] where malt seed [sic, koji starter] are added The mixture turns to malt [koji] in a few days. Salt water is put over the malt and left for a few more days, being stirred occasionally until fermentation takes place. This over-all mixture is pressed, and the [soy] sauce obtained is bottled.

“*Miso* is another necessity. This is a mixture of malt [koji], salt, and mashed soybeans, the liquor of which is drained off in tubs and allowed to ferment. *Miso* will be discussed later in the soup chapter” (see p. 64). Soy sauce and Aji-no-Moto are frequently mentioned. Soy-related recipes: Chirashi-zushi (with beancurd, p. 31-34). Sashimi (with shoyu, p. 36-41). Miso soups (p. 49, 64-69). Bean curd soup (p. 52-53). Roasted on a plough (sukiyaki with bean curd, p. 70-81). Vegetables, white sesame & vinegar (salad, with “1 *aburaage*, a kind of fried Japanese bean curd,” p. 1124-25). Shoyu spinach (salad, p. 134). Turnips in shoyu (p. 134-35). Sweet soy beans (a festival dish at New Year’s, p. 154-55).

Also mentions: Red rice (with azuki beans and glutinous rice, p. 17-18). Norimaki-zushi (sushi wrapped with nori, p. 27-30). Red bean cake (*yokan*, with bean paste, made from red kidney beans, and agar-agar, p. 145-46). Red kidney bean soup cake (*shiruko* [with azuki beans and mochi], p. 148-49). Bean & jam cake (*kuzumanju*, [with azuki bean paste and kuzu], p. 150-51). Address: [Japan].

1064. Ichiyama, Morio. ed. 1955. *Noda Shōyu keizai shiryō shūsei* [Economic and statistical data about the Noda Shoyu Co.]. Noda, Japan: Noda Shoyu Research Dept. 126 p. No index. 21 cm. [Jap; dut; eng+]

• **Summary:** Much of this information describes the development of Kikkoman and its predecessors during the Edo period. Pages 61-63 give information on early Dutch exports of shoyu from Japan. Bibliographic references are given for shoyu export documents, all written in old Indonesian Dutch (which is quite different from old Dutch of the same period), from 1668 to 1776 (Kanbun 8 to Anei 5) located at the Waran Bunsho-kan (Japanese-Dutch Document House at The Hague, Netherlands).

1. Copy of a letter dated 17 Dec. 1668, written by the governor, Balthasar Bort, and the Council of the Moluccas [Malacca? Malaccas?] near Ceylon to Ryklof van Goens. To: India, Southeast Coromandel area. To Coromandel: Sake 30 kegs (*taru*) and shoyu 12 kegs.

2. Copy of a letter dated 13 Feb. 1670 (Kanbun 10), written by the governor Antehong Pavilioen and the Council of Negapatonam. This is an order form for goods needed by the company, plus some other things. India, East Coast Ceylon island, northwest of opposite shore. Order from Japan: Sake 30 kegs, shoyu 12 kegs, miso 6 kegs.

3. Original general letter dated 13 Feb. 1677 by the Governor General and the Council of the Dutch East Indies from Batavia [today's Jakarta] (Northern part of India, east Coast Madras). To Coromandel: Palliacatta, Various types of Japanese shoyu 17 kegs.

4. Original general letter dated 13 Feb. 1679 (Enhō 7) by the Governor General and the Council of the Dutch East Indies. (India west north corner Surat). To Surat: Shoyu 4 kegs.

5. Original general letter dated 11 Dec. 1679 by the Governor General and the Council of the Dutch East Indies, from Batavia. To Coromandel: Miso 1 keg, shoyu 10 kegs, oil 8 kegs. To Ceylon: Shoyu 20 kegs, sake 2 layered kegs–6 kegs, miso 2 layered kegs = 20 kegs.

6. Original general letter dated 29 April 1681 (Tenwa 1) by the Governor General and the Council of the Dutch East Indies, from Batavia. Coromandel: Shoyu large keg(s) (ōdaru)–half kegs (handaru). Ceylon: Shoyu large keg(s) (ōdaru)–three-quarter kegs.

7. Memorandum, dated 8 Jan. 1681, concerning a list of merchandise imported by ship [from Japan] on Chinese junks and ships from other foreign countries in Tonkin.

Offerings to the former king: Sake 5 kegs, shoyu 10 kegs. Offerings to the assistant king (fuku-ō): sake 5 kegs, shoyu 10 kegs.

8. Copy of a letter dated 14 March 1683 (Tenwa 3) from the Governor and Commissioner, Jacob Joris Pitch, and the Council of Palliacatta near Batavia. Sake: large keg(s), half keg(s). Shoyu: large keg(s), half keg(s). Miso: 6 kegs.

9. Copy of a letter dated 20 Jan. 1699 from governor Govert van Hoorn and the Council of Malacca. Ceylon: Sake 2-layer kegs–6 kegs. Shoyu 2-layer kegs–8 kegs. Miso 2-layer kegs–2 kegs. Bengal: Shoyu 5 kegs, miso 5 kegs. Nagapatnam [probably Nagapatinam, a seaport town in southeast Tamil Nadu, in south India, on the Coromandel Coast 160 miles south of Madras]: Sake 2-layer kegs–3 kegs. Shoyu 3 kegs.

10. Thunberg's *Travels in Japan (Nihon Kiko)* published in 1796 noted in 1776 (Anei 5) that the Japanese do not export much tea to the surrounding countries since Japanese tea is quite inferior in quality to tea from China. However the Japanese make shoyu that is far better than Chinese shoyu, and many kegs of shoyu have been shipped to Batavia [Jakarta], India, and Europe. The Dutch in Japan discovered how to use heat to prevent over-fermentation of shoyu. They boiled the shoyu in an iron cauldron, then bottled it and sealed the mouth with painting pitch (*rekisei*). Shoyu heat-treated in this way will retain its strength and can then be used in making various sauces.

Note: In various of the above reports, shoyu was written as Zoya or Soya; sake was written as Saky with an umlaut (2 dots) over the “y,” and miso was written as Miso. These products were listed along with other Japanese goods. It is clear that these things were exported from Japan ports in India.

Also includes: Regulations of the Tokyo Shoyu Company (1881), p. 89-91. Address: Noda Shoyu, Noda, Japan.

1065. Jelliffe, D.B. 1955. Infant nutrition in the subtropics and tropics. *World Health Organization Monograph Series (Geneva)* No. 29. 237 p. [313 ref]

• **Summary:** Contents: Introduction. 1. Evolution of infant feeding in the Western world. 2. Present infant-feeding practices in the subtropics and tropics. 3. Present status of nutritional disease among infants in the subtropics and tropics. 4. Methods of improving infant feeding in the subtropics and tropics. 5. Prevention of kwashiorkor. Acknowledgements. Annexes: 1. Summary of suggested methods of infant feeding in the subtropics and tropics. 2. Questionnaire for use in investigating methods of infant feeding. Illustrations. References. Index.

In the chapter titled “Prevention of kwashiorkor,” pages 160-62 review and discuss the use of the soya bean to prevent protein deficiency in infant nutrition: (1) Soya-bean emulsion is “also known as soya ‘milk.’” Work in the USA,

Philippines, Hong Kong, Thailand, and Indonesia is discussed. (2) Soya-bean curd, “also known as soya ‘cheese’” [tofu], is rich in calcium but is lacking in the vitamin-B complex. “Nevertheless, it can be an extremely valuable food, and, according to Platt (personal communication) is far superior to other soya products in infant feeding.” (3) Fungus-digested soya beans or tempeh from Indonesia contains vitamin B-12 and is not expensive. It is very digestible and can be ground up and added to steamed rice for feeding older infants. (4) “Miscellaneous. Various other prepared soya products are of great nutritional value, but are probably unsuitable for infants.” These include miso and soy sauce. “A simple method of preparation which requires further investigation is that of grinding the roasted beans into a flour, which can be added to gruels or soups. The roasted bean is certainly palatable but its digestibility for children is unknown, as is the effect of roasting on the trypsin inhibitor and on the amino-acid composition.” Address: WHO Visiting Prof. of Paediatrics, All-India Inst. of Hygiene and Public Health, Calcutta. Formerly, Senior Lecturer in Pediatrics, University College of the West Indies, Jamaica. Nutrition Consultant, World Health Organization.

1066. Noda Shoyu K.K. 1955. Noda Shōyu Kabushiki Kaisha Sanjugonen-shi [Thirty-five-year history of Noda Shoyu, Inc.]. Noda, Japan: Noda Shoyu K.K. 865 p. Illust. No index. 28 cm. [Jap]

• **Summary:** This is the second major history of Kikkoman, written largely by Mr. Morio Ichiyama. Concerning the Mogi Saheiji family line (p. 107): The third generation Mogi in this line started a shoyu brewing business in 1782. The trademark, first used in 1784, is identical to the Kikkoman trademark used today; it was designed by Manbei SARANUMA, who was a grain merchant. Earlier in 1784 another trade mark named Kikko-dai was used briefly.

In the section on exports (p. 560), subsection “Development of exports,” it is written that shoyu was allowed to be exported during the period of Japanese isolation (*sakoku*) that started in the early 1600s (early Tokugawa period). According to Dr. Iwao, whose source of information was the Hague Library in the Netherlands (*Waran Haagu Bunshokan*; probably Nederlandse Vereniging van Bibliotheecarissen, Documentalisten en Literatuuronderzoekers (NVB)), in 1668 the Japanese sent 12 kegs of shoyu to Coromandel, India (a coast region of southeast India on the Bay of Bengal), in 1670 to the island of Ceylon, in 1677 to Coromandel again, in 1679 and 1681 to Surat in northwest India and to Coromandel, in 1681 to Tonkin (part of French Indochina from 1887, today in North Vietnam) where 10 kegs of shoyu were offered to both the ex-king and the vice-king, and in 1699 shoyu was shipped [by Dutch merchants] (together with sake and miso) to Ceylon, Bengal, and Nagapattinam (a seaport town in

southeast Tamil Nadu, south India, on the Coromandel coast, 160 miles south of Madras). Shoyu was written as “Zoya” or “Soya.” Sake was written as “Saky” with two dots over the “y.” And miso was written as “miso.” These exported products were sold at various places in India.

Pages 453-56 discusses the *Mankin Sangyotai* or *Bankin Sugiwai Fukuro* (1731 or 1732), noting that koji starter (*moyashi*) was now being made specifically for shoyu. Sake is made mostly during the cold season (*kanzukuri*). Shoyu should be fermented during the summer (*dōyo shikomu*) and pressed at the end of fall.

Pages 529-30 discuss the size of the wooden kegs *taru* in which shoyu was shipped and retailed. During the Tokugawa or Edo period (1600-1868) the kegs typically had a capacity 8 *sho*; since 1 *sho* = 1.80 liters or 0.476 gallons, a typical shoyu keg had a capacity of 14.40 liters or 8.568 gallons. And they typically contained 7.5 *sho* of high-class shoyu or 7 *sho* or regular/low-class shoyu. Starting in the year Meiji 1 (1868), a keg with 9 *sho* capacity was introduced. Then in Meiji 33 (1900) a larger size keg (called the *ō-dara-zumé*) was introduced; its capacity is not given. A keg of half this capacity (called the *ō-dara no handaru*) was also introduced. Contains many photos and illustrations.

Note 1. *Webster's New Geographical Dictionary* (1988) defines Coromandel Coast as a coast of southeast India from Point Calimere north to the mouths of the Krishna River. It has a low shoreline with no good harbors. The chief ports are Nellore, Madras, Pondicherry, Cuddalore, Tranquebar, and Nagapattinam.

Note 2. This document contains the earliest clear date seen (Jan. 2001) for soybean products (Japanese shoyu) in Ceylon (today's Sri Lanka; 1670), or Tonkin (today's North Vietnam; 1681); soybeans as such had not yet been reported. Address: Noda, Japan.

1067. Takahashi, Jusaku. 1955. [Some sources of vitamin B-12]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 8(2):49-51. (Chem. Abst. 54:18813. 1960). [Jap]*

1068. Strayer, George M. 1956. We must remember, U.S. soybeans are food for the Japanese. *Soybean Digest*. Jan. p. 8-10.

• **Summary:** This is the first in a series of reports by the editor covering his recent marketing study for the USDA in East Asia. Above all, Japan wants clean soybeans from the U.S., with less foreign material. New U.S. standards allow No. 2 soybeans to contain up to 2% foreign material. U.S. standards classify all particles of soybeans which go through a 8/64-inch round hole screen as foreign material. Manchurian standards classify such broken particles of soybeans as unsound soybeans but not as foreign material. An estimated half of U.S. foreign material is these broken

particles—which still end up making adequate soy products. “Because Manchurian [soy] beans have for years arrived with a foreign material content of ½% or less, the approximately 3,000 oil mills, 6,000 soy sauce plants, 5,000 soy paste [miso] plants and the 50,000 tofu or soybean curd plants in most cases do not have cleaning facilities... The role played by milk, meat, and eggs in the diets of America is taken by soybeans in the diets of Japan.” The industries that uses soybeans are well organized, and each has its own trade association.

Photos show Strayer with the heads of the Yokkaichi oil mill and the Japan Oil and Fats Manufacturers Assoc., the plant of the Hohnen Oil Co. at Shimizu which processes only soybeans into edible oil, glue, flour, and flakes for miso and tofu production (capacity 300,000 tons/year), K. Sugiyama, chairman of the board of Hohnen Oil Co. receiving a medal, and examining soybeans at Takeya miso plant.

1069. Baens-Arcega, Luz; Marañon, Joaquin; Palo, Macario A. 1956. Proteolytic enzyme from a Philippine strain of *Aspergillus oryzae* (Ahlburg) Cohn. *Philippine J. of Science* 85(2):189-201. June. [7 ref. Eng]

• **Summary:** Strains of the mold *Aspergillus oryzae* are used in Japan to make shoyu, miso, mizuame [rice syrup], and sake, and used in the manufacture of commercial enzymes such as Takadiastase, Polyzyme, Digestin, Oryzyme, and Kasiwagidiastase.

The authors isolated several protease-forming yellow-green molds. By repeatedly culturing the isolates in copra meal and rice bran media, one was found to produce protease of excellent digestive potency as evaluated by the Oshima and Church method. Optimum temperatures for protease production was 27°C in copra meal and 22 to 27°C in rice bran.

“The potency produced by the Philippine strain of *A. oryzae* in copra meal is 3 times that of the most efficient *A. oryzae* and 2 times that of the *Aspergillus effusus* type cultured in wheat bran by Oshima and Church.” Address: Inst. of Science & Technol, Manila, Philippines.

1070. Walley, Ersel. 1956. The Japanese-American Soybean Institute: Soybean marketing development program project No. 2. *Soybean Digest*. July. p. 12-13.

• **Summary:** Under agreement with the USDA’s Foreign Agricultural Service, the American Soybean Association is charged with carrying out a year-round soybean marketing development program in Japan. This is the first such project to be conducted by an American commodity group in foreign sales promotion—so there were few guidelines or examples of how to proceed.

Walley went to Japan and initiated the first project, the soybean exhibit at the Osaka Trade Fair. The next project was the formation of this institute [JASI]. Mr. Shizuka

Hayashi was hired as managing director. He “enjoys unusual respect and prestige throughout the entire Japanese soybean industry. He speaks and writes English excellently.” He has devoted most of his life to oils and fats, and has visited the United States.

The Japanese members are the manufacturers of oil and fat, miso, tofu, and shoyu, plus the fat and oil importers-exporter associations.

Photos show: (1) Walley and Hayashi. (2) Signs above the American soybean exhibit at the Osaka Trade Fair. A large round sign shows two pods filled with soybeans plus soybean leaves at the top. Two rectangular signs read “Soybeans” in Japanese and English.

Note: According to a report titled “The Evolution of the Market Development Programs and the Public / Private Partnerships,” by the U.S. Agricultural Export Development Council (USAEDC) concerning the cooperator program: “The first cooperative agreement was signed with the National Cotton Council in 1955, followed quickly by one with the Oregon Wheat Council. Soon the agreements expanded to include tobacco, soybeans, dairy, millers, poultry and rice in 1956, followed by prunes, raisins, Florida citrus, Sunkist (California / Arizona), canned peaches, red meat, tallow and grease, hides and skins in 1957 and Northwest apples and pears and a small feed grains project in 1958.” Address: Special Representative and Past President of the American Soybean Assoc.

1071. *Chicago Daily Tribune*. 1956. Have you heard? For housewives only. Sept. 9. p. K12.

• **Summary:** The House of Eng is one of four local Cantonese restaurants owned and operated by Mr. Eng. The barbecued ribs he serves as appetizers are delicately flavored. “Those ribs, Mr. Eng tells me, are marinated overnight in black bean paste, flavored with a touch of garlic and a bit of Chinese liquor.”

Note: This is the earliest document seen (Sept. 2008) in all major U.S. newspapers digitized by ProQuest that uses the term “black bean paste.” It probably refers to what we call “black jiang” (*hei jiang* or *hei douban jiang* in pinyin). Apparently this paste is thicker than the popular “black bean sauce.” The new term appears in about 40 documents between 1956 and the present, including this one in 1956, none in the 1960s, about 9 in the 1970s etc.

1072. Takahashi, Jūsaku. 1956. Bitamin B-12 kyōka shokuhin ni kansuru kenkyū. I. Shokuhin-chū bitamin B-12 no anteido ni tsuite [Studies on the fortification of some foods [incl. miso and soy sauce] with vitamin B-12. I. On the stability of vitamin B-12 in foods]. *Bitamin (Vitamins, Kyoto)* 11(4):385-88. Oct. 25. (Chem. Abst. 51:15816i). [11 ref. Jap; eng]

• **Summary:** The change of vitamin B-12 content in enriched miso, soy sauce, jam, and cream during storage

and heating was tested by a microbiological method using *Euglena gracilis* var. *bacillaris*.

Vitamin B-12 added to miso was relative stable during storage for 30 days; 89% remained at 3-5°C and 35-59% remained at 30°C. However vitamin B-12 added to soy sauce was relatively unstable during storage; only 75% remained at 30°C.

Vitamin B-12 added to miso was relative stable during heating; only 6% was degraded after 30 minutes at 100°C. However vitamin B-12 added to soy sauce was so unstable on heating that 28-54% was degraded after heating for 12-30 minutes at 100°C. In short, the enrichment of soy sauce with vitamin B-12 seems unsuitable. Address: Faculty of Agriculture, Utsunomiya Univ., Utsunomiya, Japan.

1073. Ebine, Hideo; Nakajima, Michie; Nakano, Masahiro. 1956. Eiyō kyōka miso no kenkyū. V. Misoshiru kanetsu ni saishite bitamin-rui no sonshitsu ni tsuite [On the manufacture of enriched miso. V. Loss of vitamins during preparation of miso soup]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 11. p. 111-12. Oct. [5 ref. Jap]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1074. *Los Angeles Times*. 1956. Diet clue to cause of heart disease. Nov. 11. p. C2.

• **Summary:** In the last 25 years in Hawaii, there has been a large increase in the incidence of fatal heart attacks. After studying the hearts of persons who have come to autopsy, Dr. Nils P. Larsen of Honolulu suspects that this is because Hawaiians, whose income has risen significantly during this time, have been consuming much more “butter, cream, eggs, and milk” than before.

In Japan, the village of Narusawa, at the foot of Mt. Fuji, had the lowest rate of rejection of military conscripts during World War II; the villagers there lived largely on “soybean soup.” Note: Probably miso soup.

In Mukojima, another village, the people have the greatest longevity of any village in Japan. About 8.4% of the population are over 70 years of age. The diet of Mukojima, which is described, includes noodles made from sweet potatoes, azuki beans, small fish, seaweed, carrots, and pumpkins.

1075. Hayashi, Shizuka. 1956. The work of the Japanese-American Soybean Institute. *Soybean Digest*. Nov. p. 20.
• **Summary:** This Institute was established in May 1956. The initial work has concentrated on a study of the condition of soybean from the USA and other countries when they arrive in Japan. Additional studies have been made of the shoyu and miso industries in Japan.

The Japanese soybean crop this season has been a poor one, estimated now at about 170,000 tons, far below the

earlier estimate of 220,000 tons. These domestic soybeans are preferred by makers of miso, shoyu, tofu, glue, and feeds. To make up the total requirements of 954,130 tons, some 784,130 tons must be imported. This includes 10,000 tons of Brazilian soybeans and at least 86,000 tons of Chinese soybeans—both depending on the price.

New-crop U.S. soybeans purchased by Japan are estimated as follows: 60,000 tons for October shipment, 110,000 tons for November shipment, and 30,000 tons for December shipment. Total: 200,000 tons. The average price is about \$112 to \$113/ton, C&F Japanese ports. A small photo shows Shizuka Hayashi. Address: Managing Director, JASI, Tokyo.

1076. Lee, T.Y.; Chung, K.S. 1956. [Research on soybean paste. II. Effect of moisture content on quality of soybean paste during its storage]. *Bulletin of the Scientific Research Institute (Seoul, Korea)* 2:67-72. [Kor]*

• **Summary:** The soybean paste should contain less than 30% moisture. Address: Section of Food and Nutrition, The Scientific Research Institute M.N.D. Korea, Seoul, Korea.

1077. Park, T.W.; Kim, S.C. 1956. [Research on soybean paste. I. On the optimum drying conditions of soybean paste]. *Bulletin of the Scientific Research Institute (Seoul, Korea)* 2:65-67? [Kor]*

• **Summary:** Soybean paste is one of the main Korean foodstuffs. Address: Section of Food Engineering, The Scientific Research Institute M.N.D. Korea, Seoul, Korea.

1078. Yoshii, H. 1956. [Symposia on miso manufacture]. All Japan Miso Industrial Assoc. 14-9. [Jap]*

1079. Fukai, Yoshie. 1956. Shōyu dokuhon [The shoyu reading book]. Tokyo: 128 p. [Jap]

• **Summary:** The section on shoyu exports from Japan notes that on 25 April 1868, 153 Japanese emigrated to Hawaii on the ship Scioto (called *Shioto-go*, *Scioto-go*, or *Saioto-go* in Japanese). They took with them several hundred kegs of miso and shoyu, marking the beginning of large scale exports of these products from Japan. In 1879 Mr. Komoto started to sell shoyu under the Kikkoman shoyu brand in California.

Note: This document contains the earliest date seen for soybean products (miso and shoyu) in Hawaii (1868); soybeans as such had not yet been reported by that date.

1080. Matsushita, Ayako; Yamada, Akira. 1956. Miso no jukusei ni ni tomonau yūri amino-san no henka ni kansuru kenkyū. II. Bitamin B-2 oyobi karushiumu tenka no eikyō ni tsuite [Studies on the free amino acids in the “miso” and the variation of their contents in the ripening periods. II. On the effects of vitamin B-2 and calcium]. *Eiyō to Shokuryo*

(*J. of Japanese Society of Food and Nutrition*) 9(3):123-30. [11 ref. Jap]

1081. Ohsawa, G. 1956. Guide pratique de la médecine macrobiotique d'Extrême-Orient: Pour ceux qui ont bien étudié la philosophie dialectique pratique [Practical guide to the macrobiotic medicine of the Far East: For those who have studied well the philosophy of practical dialectics]. Centre Ignoramus, 26 rue Lamartine, Paris 9^{eme}, France. 82 leaves. 28 cm. [Fre]

• **Summary:** After Ohsawa arrived in France (Feb. 1956) he published this work in a stenciled edition. It was only sold or given as a present to students who had obtained “the fifth level (dan) of practicing the U.P. (Universal Principle).” On page 17, under the heading “Macrobiotic Pharmaceutical Preparations,” we find No. 9: Miso and fried miso. And on page 80 is a 1-page explanation about miso. This book was translated into English and first published in August 1973 as a part of “Practical Guide to Far Eastern Macrobiotic Medicine.”

Note: This is the earliest document seen (Jan. 2009) in which George Ohsawa mentions miso—or any other soyfood product. Address: Paris.

1082. Ohsawa, George. 1956. The philosophy of Oriental medicine (The book of judgment). New York, NY: Ohsawa Foundation. 171 p. 19 cm. 2nd ed. 1960. [7 ref]

• **Summary:** Ohsawa is trying to express a nondualistic worldview, its many forms of practice or application, and its manifestation in the field of time as pairs of opposites. The Preface begins: “I wrote this book from the beginning of November until the end of November, 1955, in French Equatorial Africa in Dr. Schweitzer’s hospital at Lambarene [Gabon], and from January 1 to January 13, 1956, at the Protestant Mission Station at Andende, in that old house where Dr. Schweitzer began his work in the year 1913...”

“The aims of this book: 1. To point out the dialectical, universal, simple and useful Unique Principle of science and philosophy, of all the great religions and of all Far-Eastern civilization. 2. To show the biological, physiological, medical, educational, sociological and logical application of the Unique Principle. 3. To present especially Far-Eastern medicine in the light of the Unique Principle. 4. To reveal the Unique Principle in all its glory as the principle of infinite freedom and eternal peace.

“The Unique Principle of the Far-East is exceedingly simple and extraordinarily practical... It is the ‘conception-constitution’ of Life and the Universe” (p. 3). It “is a manifestation of universal love, or the supreme judgment, embracing all the antagonisms and transforming them into oneness, and distributing the eternal joy of life to all, forever” (p. 4).

“Since the publication of my first book in French, *Le Principe Unique de la Science et de la Philosophie*

l'Extrême-Orient (at Vrin’s, Paris, 26 years ago [1931]), I have always worked in the same direction—for universal understanding. I left Japan forever about the end of my sixtieth year (October, 1953) to see my friends and the great man of the world, whom I believed would understand the Unique Principle, and the practical dialectics thereof. Note: The order of words in the title of Ohsawa’s first book in French was actually *Principe Unique de la Philosophie et de la Science d'Extrême-Orient*.

“I hope the Unique Principle will become as well known as the art of flower arrangement, Chinese medicine, ‘Acupuncture,’ Bonsai, Bobkei, Zen Buddhism, and the theory of Judo-Aiki” [Aikido] (p. 4).

“Until the end of my life I shall always be traveling with my wife, showing how to master this practical dialectics, universal logic, and order of the universe; the very key to the Kingdom of Heaven that will establish infinite freedom, eternal happiness, and absolute justice everywhere.” “I live in Europe, chiefly in France, six months of each year, and the rest of the time I shall visit other countries on this planet” (p. 5).

Contents: Preface. Introduction: The physics and metaphysics of yin and yang. 1. Medicine or faith? 2. The Unique Principle—a practical and dialectical classification: Yin (centrifugal) and Yang (centripetal) are always relative, the form, the weight, the color, about water, the chemical composition, the geographical point of view, the taste, conclusion, Dente, Yin and Yang classification.

3. The Unique Principle of the science and philosophy of the Far East. 4. Man’s origin. 5. Far Eastern medicine. 6. Order of the Universe and man’s constitution. 7. Supreme judging ability. Appendixes.

“In the Far East, thousands of years ago, medicine evolved from perfect symptomatic medicine to prophylactic [preventive] medicine; then from prophylactic to the yogic (or religious) art of health...” (p. 13). Western medicine is analytical, empirical medicine; it is a modern superstition (p. 19). “I am going to show you the identity of faith (realization of the order of the universe, or Oneness, the absolute—infinite—eternal) and the highest medicine” (p. 20).

Soy paste [miso] is a very Yang “vegetable paste, prepared with a 20 to 30% volume of salt, which will keep for at least three years” (p. 35).

“How can one, having two new-born twin dogs, make one become very vicious, restless, aggressive, and the other easy, friendly, quiet and patient? Answer: I will feed one with a diet including 20 to 30% of meat or fish, and the other a vegetarian diet with 60% or more cereals... If racing together, the non-vegetarian would lead for the first mile or so, but afterwards, the vegetarian would forge ahead” (p. 36).

“Vegetarian peoples are rather of philosophical and religious mind, inclined to meditation, aesthetics, literature and poetry. The non-vegetarian ones, on the contrary, are

strongly inclined to so-called mechanical and industrial progress, and to colonization too. There have been no vegetarian people in world history who colonized other people by force (militarily or economically). From the beginning, the Japanese people were vegetarian until the introduction of Occidental civilization fifty years ago at the time of the Russian-Japanese war" [1904-05]. After that they "became utterly uprooted. The Japanese spirit was lost, as well as the whole of its tradition. To some degree they have allowed themselves to be colonized, spiritually and physiologically" (p. 37).

There are 7 stages of Yin-Yang classification of food. The 7th or highest is "all-embracing supreme judgment. All food products must be free of chemical fertilizer and insecticides (both very Yin), since they destroy not only the natural quality of the food, but also, sooner or later, those who eat it." The key complementary antagonism between Na [sodium] and K [potassium] was discovered by a Japanese doctor, Sagen Isiduka [Ishizuka], 70 years ago." He cured hundreds of thousands of incurable people. "When he died his funeral escort was over two miles long" (p. 38-39).

The greatest master of the Unique Principle was Lao-Tse [Laozi]. It is a polarizable monism (p. 41). "Everything is composed of two fundamental forces, Yin and Yang. They are seemingly antagonistic, but actually they are complementary" (p. 43).

"Every year about July or August, for almost twenty years, I have organized a 'New School' where the students learn the theory and practice of the method to establish good health following the tenets of the Unique Principle" (p. 44).

"But what is education? Present-day education, so-called, is nothing but phonographic remembrances of the mass production of professionals, technicians, engineers or teachers. In short it is a preparation for slavery" (p. 47). It is really indoctrination. There are two important types of education: pre-natal and post-natal. But a real teacher is able to make men free and happy forever (p. 48-50). Knowledge of the Unique Principle is called *Do* in Japan and *Tao* in China; it is the Great Way, and following it is called *gyo* [spiritual practice] (p. 50-52).

All food is of vegetal origin; it ultimately comes from plants (p. 62). "Cow's milk is intended for the nourishment of calves... There is no reason for man to live upon the milk of the animal, which is biologically and intellectually inferior to him" (p. 67).

Illness is an alarm, sent by the Infinite to tell us that we are violating the Order of the Universe (p. 77). "The world is dialectical. Quality is influenced by quantity. The world of materiality and relativity is very complex in its expression and phenomena. It appears like an anarchic chaos, but a dialectical law rules it: the 'Unique Principle' or Yin-Yang law." Man is the masterpiece of creation. He is

happy who has made up his mind to live in accordance with the Unique Principle (p. 82).

"About thirty years ago, I brought acupuncture to Europe and was the first practitioner of it there." "I was at the same time, the first importer of the art of flower arrangement and of the theory (or spirit) of Judo (Juzutsu [Jujutsu])." Both have become popular in today's Europe. "But few people are interested in the *Do [Tao]* of Judo and Kado, which is their philosophy" or "Unique Principle." The *Do* of Judo has also been forgotten in Japan (p. 88-89).

"The individual soul and the universal soul are one and the same thing, the infinite" (p. 156). On the last 2 pages of the book are important addresses in New York City (Ginza, Azuma) and Japan (Nippon C.I. in Tokyo), and Centers in Europe (France, Belgium).

Note: This is the earliest English-language document seen (June 2000) written by Ohsawa, who lived 1893-1966. Address: 1. Lambarene, French Equatorial Africa [Gabon]; 2. Ohsawa Foundation, 331 Riverside Dr., New York City, New York (Secretary Aihara, 44, W. 96th St., New York City, USA).

1083. Soetan, Sanif. 1956. Kedelai [Soybeans]. Jakarta: Dinas Penerbitan Pustaka. 23 p. [Ind]

• **Summary:** Contains descriptions of the preparation of tempeh, tautjo (Indonesian-style miso), ketjap (soy sauce), and tahu (tako; tofu).

Note: This is the earliest English-language document seen (Feb. 2009) that uses the word "tautjo" to refer to Indonesian-style miso. Address: Indonesia.

1084. Tomoda, Yoshinori; Sakaguchi, Kinichiro. eds. 1956. Hakkô shokuhin [Fermented foods]. Tokyo: Kyoritsu Shuppan K.K. 359 p. Series: Bisei-butsu kôgaku koza (Microbial technology course), no. 8. [Jap]

• **Summary:** Contains long sections on miso (p. 1-92), shoyu (p. 93-248), HVP shoyu (p. 225-50), pickles (p. 251-74), vinegar (p. 275-304), Japanese-type "sauce" and Worcester sauce (p. 307-329), and fermented dairy milk products (p. 331-59; incl. acidophilus milk, kefir, and koumis).

1085. Raper, Kenneth B. 1957. Charles Thom: 1872-1956. *Mycologia* 49(1):134-50. Jan/Feb. [114 ref]

1086. *Lettre Ignoramus (Paris)*. 1957. "Miso" fabrication française [French miso making]. No. 1. p. 6. March. [Fre]

• **Summary:** *Lettre Ignoramus* was George Ohsawa's first French macrobiotic magazine. Note: This is the earliest periodical article seen related to macrobiotics and soyfoods. Address: Paris.

1087. Ebine, Hideo; Ito, H.; Koiso, Kenji; Nakano, M. 1957. Miso no hyômen chakushoku ni kansuru kenkyû

[Studies on browning of the miso surface]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 12. p. 37-42. Aug. [8 ref. Jap]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan (Hakko Shokuhin-bu, Sogo Shokuryo Kenkyujo).

1088. Ebine, Hideo; Ito, H.; Koiso, K.; Nakano, M. 1957. Enka aruminiumu no miso chakushoku bōshi kōka ni tsuite [The effect of aluminum chloride in preventing browning of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 12. p. 43-47. Aug. [6 ref. Jap]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1089. Hayashi, Shizuka. 1957. Tofu takes large volume of soybeans. *Soybean Digest*. Aug. p. 26-27.

• **Summary:** “There are approximately 45,000 tofu manufacturers in Japan, of which about 23,000 are members of the Tofu Association. There is one large factory in Osaka, the largest in Japan, which consumes 2 tons of soybeans a day.” In 1957 Japan will use 1,070,000 tons of soybeans, including approximately 350,000 tons for shoyu, 230,000 tons for miso, 160,000 tons for tofu, and 120,000 tons for other foods. But the Tofu Association says 308,000 tons will be used for tofu.

Note: This is the earliest English-language document seen that gives the number of tofu manufacturers in Japan, and statistics on the amount of soybeans used for making tofu in Japan. Address: Japanese-American Soybean Inst., Tokyo, Japan.

1090. United States Department of Agriculture. 1957. USDA announces study to promote wider use of U.S. soybeans in Japan (News release). Washington, DC. 1 p. Sept. 12. USDA 2775-57.

• **Summary:** “The U.S. Department of Agriculture announced today that it will send a specialist to Japan to work with private trade groups and Government officials there to promote wider and more direct use of United States soybeans in Japanese diets.

“Although this country has been exporting about 20 million bushels of soybeans annually to Japan in recent years, only a relatively small quantity of the beans have been used in making such food products as ‘tofu’ and ‘miso,’ which utilize the whole soybean and not just the oil or the meal.

“Tofu and miso are a primary source of protein in the Japanese diet. The former is a custard-like curd eaten in soups, and the latter is a paste eaten in many food preparations.

“Dr. A.K. Smith of USDA’s Northern Utilization and Development Division Peoria, Illinois, will go to Japan to study the reasons for the Japanese preference for their own

and Chinese soybeans in the manufacture of products such as tofu and miso. His purpose will be to determine what differences exist between Japanese and Chinese soybeans and American soybeans, and why they occur. He also will seek to determine how foods can be made from United States soybeans which will be more acceptable to the Japanese.

“Success in his investigation can mean a broader market for United States soybeans in Japan.

“USDA’s Foreign Agricultural Service and the American Soybean Association of Hudson, Iowa, for some time have been conducting an overall program to promote the market for United States soybeans in Japan. That program has been expanded to include USDA’s Agricultural Research Service, which has made Dr. Smith’s services available.” Address: Washington, DC.

1091. *Cotton Gin and Oil Mill Press*. 1957. Study will promote U.S. soybeans. Sept. 21.

• **Summary:** About A.K. Smith’s upcoming trip to Japan.

1092. *Southwestern Miller*. 1957. U.S. seeks soy food uses: Dr. A.K. Smith of Department of Agriculture goes to Japan to discover reasons for preference for other beans. 36(30):56. Sept. 24.

• **Summary:** About Dr. A.K. Smith’s upcoming trip to Japan.

1093. Hayashi, Shizuka. 1957. The Japanese-American Soybean Institute. *Soybean Digest*. Sept. p. 33-34, 36.

• **Summary:** Subtitle: “The Japanese know the quality of U.S. soybeans is improving. Mr. Hayashi expects every Japanese family to include soybeans in the daily diet as a result of the Institute campaign.”

“Membership in the Japanese-American Soybean Institute [JASI] is made up of the Japanese Oil Processors Association, the Japan Soy Sauce Association, the Japan Miso Industry Association, the Japan Tofu Association, and the Oil and Fat Importers and Exporters Association—in other words all groups connected with the soybean industry in Japan. The American Soybean Association is also a member of the Institute.

The Institute carries out a variety of research and educational programs. Under the initial agreement, JASI was established in April 1956 for a period of 1 year with a total budget of \$75,000; it began functioning on 1 May 1956. Each of the Institute’s main projects and contracts signed during the first year is described. The production of a movie film, approved by USDA’s Foreign Agricultural Service (FAS), is now in progress. “This will be a documentary colored film in three rolls of about 24,000 feet long. The theme of this film involves grammar school children working on a special subject of soybeans in their practical science room.”

Before JASI was established, most Japanese did not realize that soybeans were grown in the U.S.—except on a small scale. “Before the war [World War II] we knew that Manchuria, China, was the only major soybean growing country. I was in Manchuria for more than 10 years before the war as an exporter of soybeans to Europe and Japan. We [Japan] imported about 1.5 millions tons of soybeans annually from China. Production in China was then around 6 million tons. In 1948 I visited this country [USA] and was surprised to learn for the first time of America’s huge production of soybeans. After the war when Japan was still under the SCAP’s [Supreme Commander Allied Powers = General Douglas MacArthur] control, soybeans were not available from China. It was then that Japan received soybeans from America for the first time in history. It is since then that Japan has gradually become familiar with American [U.S.] soybeans.

“However, soybeans coming into Japan right after the war were very bad. They contained enormous amounts of foreign material, worm-eaten damaged beans, broken beans; besides sizes were irregular and color was bad. The quality of American beans was so bad that it gave Japanese users the impression that U.S. soybeans were not comparable with Chinese soybeans. Everywhere we went we received complaints of foreign material.” No makers of miso or tofu wanted to buy them.

Now, a year after JASI was established, the situation has improved. Everybody in the soybean industry now knows about U.S. soybeans, and knows their quality is improving. JASI sends these people a newsletter, the *Soybean Digest Late News*, translated into Japanese. A photo shows Shizuka Hayashi. Address: Managing Director, JASI, Tokyo.

1094. Ito, Kiyoe; Kinase, Michiko. 1957. Misoshiru no chōri ni tsuite. I. [On the preparation of miso soup]. *Kaseigaku Zasshi (J. of Home Economics of Japan)* 8(4):209-12. (Chem. Abst. 52:18934a). [5 ref. Jap]
 • **Summary:** Discusses the relationship between the properties of miso soup and the brand of miso from which it is prepared. Address: Tokyo Univ. of Education (Tokyo Gakugei Daigaku).

1095. *Soybean Digest*. 1957. USDA sending soy specialist to Japan. Oct. p. 16-17.
 • **Summary:** About Dr. Allan K. Smith’s upcoming trip to Japan. A portrait photo shows Dr. Smith.

1096. Hayashi, Shizuka. 1957. Miso maker switches to U.S. beans. *Soybean Digest*. Nov. p. 24-25.
 • **Summary:** A week-long soybean promotional program was held in the city of Sendai in September. The Institute participated in the name of the “Food Life Improvement Association.” The speaker was J. Sasaki [probably of Sendai Miso Shoyu], vice president of the All Japan Miso

Assoc. The biggest miso maker in the district and one of the largest in Japan, he also manufactures shoyu, and he has been using U.S. soybeans only since the early part of this season. Why? More uniform and consistent quality, less purple colored beans, lower price, larger quantities of the same variety available. Address: Managing Director, Japanese-American Soybean Inst., Tokyo, Japan.

1097. Shi, Shenghan. 1957-1958. *Qimin yaoshu jinshi* [Modern Chinese edition of the *Qimin Yaoshu* (Ch’i-min yao-shu)]. Peking, China: Science (Kexue) Press. 4 volumes. [Chi]*

• **Summary:** A key modern edition of this classic. Going chapter by chapter, Shi Shenghan first gives the original classical text, followed by his translation and interpretation of it into modern Chinese, so that it can be read and understood today. In addition to these parallel texts, he has added extensive bibliographic commentaries and technical discussion.

This edition is extremely useful for the reader (like most scholars today) who is not competent in classical Chinese. However, it is not as scholarly or as up to date as the 1982 edition by Miao Qiyu (W.-G. Miao Ch’i-Yu). Address: China.

1098. **Product Name:** [Kikko Miso—Japanese Style Sweet White Miso and Barley Miso].

Foreign Name: Miso Kikko (Shiro Miso and Aka Mugi Miso).

Manufacturer’s Name: Fabrica de Siyau Kikko Sociedad de Responsabilidad Limitada.

Manufacturer’s Address: Av. Colombia 171, Pueblo Libre, Lima, Peru. Phone: 32-3754.

Date of Introduction: 1957.

How Stored: Shelf stable.

New Product—Documentation: Company history form filled out by Marco Kamego, a present owner of Kikko Corporation S.A. 1997. Dec. 29. Miso Kikko (both *shiro miso* {sweet white miso made with rice} and *aka miso* {red miso made with barley}) were both introduced in 1957. These products may have been the world’s first miso made with common beans (*Phaseolus vulgaris*) instead of soybeans. In 1960 the company first began using soybeans instead of common beans. They still make *shiro miso* (sweet white miso) fermented for 5 months, but have discontinued red miso due to lack of demand.

1099. Lee, T.Y. 1957. [A study on carotene. II. Variation in carotene content of red pepper and its processed foods (kochojang) during storage]. *Bulletin of the Scientific Research Institute (Seoul, Korea)* 2:15-22. [Kor]*

• **Summary:** Red pepper sauce can retain as much as 90% of their carotene content after one year storage. This may be due to the presence of antioxidants in the sauces. Address:

Section of Food and Nutrition, The Scientific Research Institute M.N.D. Korea, Seoul, Korea.

1100. Mogi, M.; Iguchi, N. 1957. [Soy sauce and miso in 1956]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 52:109-16. (Chem. Abst. 51:17080g). [87 ref. Jap]

Address: Noda Inst. of Scientific Research Lab., Chiba.

1101. Mogi, Masatoshi. 1957. [Some problems of making miso]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 31(6):A72-A74. [29 ref. Jap]

Address: Noda Inst. of Scientific Research, Noda, Japan.

1102. Onishi, Hiroshi. 1957. Studies on osmophilic yeasts. III. Classification of osmophilic shoyu and miso yeasts. *Noda Sangyo Kagaku Kenkyusho (Report of the Noda Institute for Scientific Research, Japan)* 1:30-35. Reprinted from Bulletin of the Agricultural Chemical Society of Japan 21(3). [13 ref. Eng]

• **Summary:** Most of the salt-tolerant yeasts isolated from soy sauce and miso belonged to *Saccharomyces rouxii*. Some of them produced luxuriant pellicles (surface films) on culture media containing sodium chloride, but pellicles were not formed on salt-free media. A new variety was isolated from these yeast species: *Saccharomyces rouxii* Boutroux var. *halomembranis* nov. var. A few strains were identified as *Saccharomyces acidifaciens* (Nickerson) Lodder et Kreger-van Rij. Two new species were also described: *Torulopsis halophilus* nov. sp. and *Torulopsis nodansis* nov. sp. These two species showed high salt tolerance, especially the former, which was a facultative halophile.

In a 1952 monograph titled *The Yeasts: A Taxonomic Study*, by J. Lodder and N.J.W. Kreger-van Rij, the subgenera *Zygosaccharomyces* is no longer recognized. In this classification almost all of the *Zygosaccharomyces* known as the osmophilic yeasts were included in only two species and one variety, *Saccharomyces rouxii* Boutroux, *Saccharomyces rouxii* Boutroux var. *polymorphus* Lodder and Kreger-van Rij, and *Saccharomyces mellis* (Fabian et Quinet) Lodder and Kreger-van Rij. For example, *Zygosaccharomyces major*, *Z. soya*, *Z. salus*, and *Z. japonicus*, known as soy yeasts, were all included in one species, *Saccharomyces rouxii*. Address: Japan.

1103. Onishi, Hiroshi. 1957. Studies on osmophilic yeasts. III. Classification of osmophilic soy and miso yeasts. *Bulletin of the Agricultural Chemical Society of Japan* 21:151. Bound in the back of *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)*. [Eng]*

Address: Japan.

1104. Segi, M.; Fukushima, I.; Fujisaku, S.; Kurihara, M.; Saito, S.; et al. 1957. An epidemiological study on cancer in Japan. *GANN* 48(Supplement):1-63. *

• **Summary:** Concerning stomach cancer: Consumption of miso soup or miso was associated with a decreased risk of stomach cancer.

Note: This is the earliest document seen that suggests there may be cancer-preventing substances in soybeans.

1105. Miyamoto, Kazuo. 1957. A nisei discovers Japan. Tokyo: Japan Times. [x] + 282 + [4] p. See p. 181. Illust. Port. No index. 20 cm.

• **Summary:** The author, a physician and American citizen, lived with his wife and two children for two years in Japan between 1937 and 1939 “just after the beginning of the China Incident.” He spoke and wrote Japanese fluently.

Page 7: On 29 Sept. 1937, after just arriving in Japan, they enter Tokyo. He notes that prices are high, protein consumption is therefore insufficient, and the general population seems undernourished. Beans, including soya beans, ought to be used more extensively. Except for misoshiru [miso soup] and natto, they are apparently not widely used. He suggests that the government welfare department develop and publish soy recipes for the health of the people.

Page 48: On 8 Feb. 1938 on a trip into Yusawa, Niigata, in northeastern Japan, he went skiing. For lunch at a inn he had “natto with lots of onions to erase the odor.”

On a train from Ueno station, Tokyo, he has breakfast in the diner of miso-shiru [miso soup], tsukemono [pickled vegetables], and rice for 25 *sen*.

Page 129: In Aomori at the hotel for breakfast they enjoy delicious eggplant fried in butter with shoyu, pepper, and pieces of chiso [beefsteak leaves].

Page 171: At Aoyama hot springs in Hokkaido, caught in a blizzard, he has a bento [Japanese box lunch] from the hotel that includes miso-shiru.

Page 181: On 21 March 1938 they are at the port of Shimonoseki, Japan (in southwestern Honshu, just north of Kyushu, in Yamaguchi prefecture, facing the Tsushima Strait). He notes that many people pass through this port on their way to Chosen [Korea] and Manchukuo [Manchuria].

Shimonoseki is known for its *fugu* or balloonfish (also called globefish or swellfish) for it is here that the largest catch in Japan is taken each year.

They found an eating place, Fujitomo, that served the delicacy. The raw sliced meat was arranged on a huge platter in three rows of semi-circles, so thinly sliced that it was transparent. “The above were dipped in a sauce prepared with murasaki, lime and onions. Tai, considered the king of fishes, must be allotted second place to this delicacy...”

Note 1. The word “murasaki” means purple in Japanese, and is still used in sushi shops and other specialty eating

places to refer to soy sauce.

Note 2: This is the earliest English-language document seen (March 2008) that uses the word “murasaki” to refer to soy sauce.

The balloonfish is so poisonous it can kill a person; the toxin is contained in the ovaries. “At Shimonoseki, the season comes to an end at the end of March for then the spawning season begins and the danger of poisoning becomes greater.”

Page 201: On a trip to Korea he enjoys *manul zany*, garlic pickled in shoyu.

In April 1955, the family returned to Japan to visit new relatives. Near Furukawa, in northeastern Japan, they inspected a “miso and shoyu factory.”

Also discusses: Nori (p. 128). Wakame (seaweed, near Idzu / Izu) (p. 276). Address: Honolulu, Hawaii.

1106. Yamada, S. 1957. [Manual of the fermented food industries of Japan]. Tokyo. [Jap]*

1107. Tsukada, Toyoaki; Yamada, Yasuo. 1957? Frozen tofu (dehydrated tofu). Japan. 4 p. Undated. 28 cm. [Eng]

• **Summary:** This is a report on the Misuzu plant in Nagano City and the Daiya plant in Suwa City, Nagano prefecture, Japan. “The name ‘frozen tofu’ is somewhat misleading as the final product is a dried cake with the approximate dimensions of 2½ x 2 x ¾ inches. The freezing of the tofu is a step in the process which develops certain desirable elastic property to the wet cake. It becomes like a sponge.

“The frozen tofu plants at Nagano and Suwa had essentially the same process but the Suwa plant was the more modern of the two in respect to engineering equipment. The Suwa plant had two completely separate units for making tofu, each one approximately the size of the Nagano plant.

“The Nagano plant reported they had used quite a few American soybeans until two years ago when they changed to Chinese soybeans. In his opinion the best frozen tofu is made from Nagano beans but Nagano raises insufficient soybeans to supply the demand. The qualities desired in this product are good color and smoothness (including gloss) and bland flavor. In his process the American soybeans give equal color and smoothness but not flavor to the Chinese beans. American soybeans process as well as other beans. Some soybeans have a soft smooth taste whereas others leave a taste on the tongue. They described Brazilian soybeans as good for making tofu but not for miso. American soybeans give a high yield.

“The owner of the Suwa Plant said they could use up to 20% American soybeans in their process without loss of quality in their product.

“These frozen tofu plants operate on a large scale, of the order of 5-10 tons of beans per day. The frozen tofu process is much more readily adaptable to large scale operation than

fresh tofu. All fresh tofu plants are small and usually process in the range of 100 to 200 pounds of beans per day. Because of the wide difference in scale of operation the retail price of frozen tofu is the same or even a little less than fresh tofu. While the frozen tofu plants have adopted more modern equipment than any of the other food processing plants, there is still much room for further modernization and improvement in efficiency of operation.

“The owner of the Suwa Plant recognizes the need for further research and development and made the following suggestions in the order indicated.

“1. Improve the freezing process—to produce an elastic type material in less time.

“2. Use of centrifuges for classification of original extract and also perhaps to concentrate the curd. Dorr thickener should be considered at the stage.

“3. Mechanization of trimming the tofu cakes to size and shape. Common problem to all frozen tofu makers.

“He did not make any suggestions on where research should be done, but mentioned of a certain person in Osaka Prefectural Institute of Industrial Promotion, Dr. K. Nakajima, who specializes in frozen tofu chemistry. Also mentioned Irie Co. of Osaka, which he suggested as a place for developing trimming and packing equipment. Following is a flow diagram of the process for making frozen tofu.” Address: 1. Director, Misuzu Co., Nagano City; 2. Director, Daiya Co., Suwa City. Both: Nagano prefecture, Japan.

1108. Black, H. 1958. Die Sojabohne—Ein Hauptnahrungsmittel der Zukunft [The soybean—A major food for the future]. *Ernaehrungs-Umschau* 5(2):33-34. March/April. [Ger] Address: Bonn, West Germany.

1109. Smith, Allan K. 1958. Use of United States soybeans in Japan. *USDA Agricultural Research Service*. ARS-71-12. iii + 36 p. April. April. Illust. 28 cm. Typewritten.

• **Summary:** An extremely well researched, interesting document based on a survey conducted in 1957 in Japan. Contents: Definitions of Japanese food products.

Introduction. 1. Problems of Japanese food processors in using U.S. soybeans: Food production problems, foreign material, broken and dark-colored soybeans in exports. 2. Analysis of the problems. 3. Research proposals. 4. Miso: Processing, uses, production, composition. 5. Tofu and its modifications: Processing fresh tofu and frozen tofu, aburage. 6. Natto. 7. Hamanatto. 8. Kinako. 9. New products research: Soybean “milk,” fermented cheese, soybean flour and isolated protein for foods, isolated soybean protein. Acknowledgments.

A graph on the front cover (and on p. 6) shows soybean production in the USA from 1938 to 1957 (in millions of acres harvested). Photos show: (1) Drying soybeans before threshing in Japan. (2) Manually operated threshing

machine. (3) Power operated threshing machine. (4) Modern small-scale equipment for cleaning soybeans and grading for size. (5) Straw weaving equipment. Straw bags are used for soybeans, rice, and other farm products. (6) Cooling roasted soybeans and hand cleaning for making kinako. (7) Soybean varieties: Lincoln, White Hilum Iwate, and Acadian (six photos, showing each variety wet and dry). (8) Wooden vats used for fermenting miso; each stands a little taller than a man, and is bound with 4 bamboo hoops. (9) Miso in wooden tubs [kegs] ready for market. (10) Hand assembly of wooden tubs for shipping miso and shoyu. (11) Stone mill for wet grinding of soybeans to make tofu. (12) A modern tofu shop, with boiler, pressure cooker, filter, and precipitation vat. Photos 11 and 12 courtesy of Sugiyama Chemical Research Inst., Tokyo. (13) Deep fat frying of tofu for making aburage. (14) Wooden kegs used for fermenting hamanatto. Stone weights are used to compact the beans during fermentation.

Other figures: (1) Flow diagram of the miso manufacturing process (incl. koji). (2) Table showing total production of miso in Japan (about 1957) as reported by All Japan Miso Industrial Association. Factory made miso consists of: Rice miso 379,000 tonnes (metric tons), barley miso 146,000 tonnes, soybean miso 58,000 tonnes, total factory made 583,000 tonnes. Homemade miso of all types is 391,000 tonnes (67% of factory made). Total factory and home made: 974,000 tonnes. Ingredients used in this grand total: Soybeans 361,000 tonnes, rice 115,000 tonnes, barley 58,000 tonnes, salt 159,000 tonnes. (3) Table showing nutritional composition of rice miso, barley miso, and soybean miso. (4) Table showing composition of sweet miso, salty miso, and enriched miso. (5) Diagrammatic sketch of equipment used in making fresh tofu. (6) Flow diagram of a frozen tofu factory.

Note: The author was in Japan from Oct. 24 to Dec. 24, 1957. The principal localities visited were: Tokyo, Yokohama, Tochigi City, Nagano, Matsumoto, Suwa, Hamamatsu, Nagoya, Kyoto, Osaka, Fukuoka, Kumamoto, Nagasaki, and Sendai. His trip was sponsored by the Agricultural Research Service and the Foreign Agricultural Service of the USDA, and the American Soybean Association (Hudson, Iowa).

Note: This is the earliest document seen (July 2000) that mentions “barley miso”—a type of miso made with barley koji, soybeans, and salt. Address: Head of Meal Products Investigations, Oilseed Crops Lab., NRRL, Peoria, Illinois.

1110. *Journal Star (Peoria, Illinois)*. 1958. Two Japanese scientists here to study soybean processing. Oct. 30. p. A-5. • **Summary:** A large photo shows C.W. Hesseltine and A.K. Smith of the USDA Northern Utilization Research and Development Division [NRRL], and visiting Japanese scientists Tokuji Watanabe and Kazuo Shibasaki. The two Japanese scientists have arrived in Peoria to start a year’s

search for ways to increase the use of U.S. soybeans in Japanese foods—especially tofu and miso. The studies will be conducted under an agreement between the Agricultural Research Service (ARS), the USDA’s Foreign Agricultural Service, and the American Soybean Association. The research is part of USDA’s research and development program to find new outlets for U.S. farm crops.

Dr. A.K. Smith of the Northern Division spent several months in Japan last year studying soybean utilization. He found that Japanese prefer U.S. soybeans for oil-mill processing, which accounts for about half of all Japanese soybeans. The other half is used to make traditional foods, and only a limited quantity of U.S. soybeans are used in this way.

“Dr. Shibasaki is an associate professor in the department of agriculture chemistry at Tohoku University, Sendai, Japan, and an adviser of Miyagi Prefecture Miso and Shoyu Industry Association.

“Mr. Watanabe is chief of the grain processing section of the Food Research Institute, Ministry of Agriculture and Forestry.”

Note: Soyfoods Center owns a copy of this black-and-white photo (8½ by 11 inches); it was a gift of the USDA National Center for Agricultural Utilization Research (Peoria, Illinois), which owns the photo.

1111. Hayashi, Shizuka. 1958. U.S. study by Japanese scientists [Kazuo Shibasaki and Tokuji Watanabe]. *Soybean Digest*. Nov. p. 23.

• **Summary:** Two Japanese scientists are now at USDA’s Northern Utilization Research and Development Division at Peoria, Illinois, where they are investigating the use of soybeans from the USA and other countries in making tofu and miso in Japan.

The two men are: (1) Kazuo Shibasaki, age 41, associate professor at the department of agricultural chemistry, Tohoku University. (2) Tokuji Watanabe, age 41, chief of section of grain processing, Food Research Institute, Japanese Ministry of Agriculture and Forestry. They arrive in Peoria Oct. 18.

“They are working under the joint soybean market development project of USDA’s Foreign Agricultural Service and Agricultural Research Service, and the American Soybean Association” [ASA]. Their living expenses during their 9 months stay in the USA will be paid by ASA. “And their traveling expenses to the United States and back will be paid by the Japanese American Soybean Institute from funds allocated under the market development project.” Address: Japanese-American Soybean Inst., Tokyo.

1112. Inoue, Takashi. 1958. Tamari jōzō-yō kokei kōji ni kansuru kenkyū. II. Miso-dama ni tsuite [Studies on the use of solid koji for making tamari. II. On “Miso-dama” (1)].

Hakko Kogaku Zasshi (J. of Fermentation Technology)

36(11):458-62. Nov. English-language summary at start of issue, p. 42. [4 ref. Jap; eng]

• **Summary:** Miso-dama are balls made of cooked soybeans. The size of each ball has a great influence on the fermentation. Address: Nagoya Miso and Tamari Co., Ltd. (Nagoya Miso Tamari K.K.), Japan.

1113. Cowan, John C. 1958. Soybean utilization research. *Cotton Gin and Oil Mill Press* 59(25):7, 27-28. Dec. 13.

• **Summary:** Discussion of new industrial uses, and food and feed uses for oil, meal, and whole beans. Photos show J.C. Cowan, H.M. Teeter, C.W. Hesseltine, A.K. Smith, Tokuji Watanabe, and Kazuo Shibasaki. Address: Head, Oilseed Crops Lab.

1114. *Soybean Digest*. 1958. Japanese scientists start work at Peoria. Dec. p. 21.

• **Summary:** “Two Japanese scientists, Kazuo Shibasaki and Tokuji Watanabe, have arrived at the Northern Utilization Research and Development Division, Peoria, Illinois, to start a year’s search for ways to increase the use of U.S. soybeans in Japanese foods...”

“Dr. Shibasaki and Mr. Watanabe will study the use of U.S. whole soybeans in making tofu and miso, traditional Japanese foods... Dr. Shibasaki is an associate professor in the department of agricultural chemistry at Tohoku University, Sendai, Japan, and an adviser of Miyagi Prefecture Miso and Shoyu Industry Association. Mr. Watanabe is chief of the grain processing section of the Food Research Institute, Ministry of Agriculture and Forestry.”

1115. Shigeno, Y.; Sotome, S. 1958. Nyûfu no seikagakuteki kenkyû. I. Nyûfu seizô ni kansuru Mukoru rui kinkabu to nyûfu no seibun ni tsuite [The biochemical study of fermented tofu (*chian toufu*). I. The biochemical study of mucor chian, and the chemical contents of chian tofu].

Utsunomiya Daigaku Nogakubu Gakujutsu Hokoku (Bulletin of the College of Agriculture, Utsunomiya University) 4(1):125-28. [4 ref. Jap; eng]

Address: Utsunomiya Univ., Japan.

1116. Asai, Toshinobu; Arima, Kei. 1958. Summaries of papers presented by Prof. Teizo Takahashi and Prof. Kin-ichiro Sakaguchi. Tokyo: Kasai Publishing. 206 p. The lengthy front matter is unnumbered. [584 ref. Eng; jap]

• **Summary:** This work was compiled and published by “The Committee of Commemorative Meeting of 35 Year’s Anniversary of Professor Kin-Ichiro Sakaguchi.” Contents: Foreword, by T. Asai. Chronology of the professional career of Teizo Takahashi (1875-1952; he was Prof. Sakaguchi’s teacher). Chronology of the professional career of Kin-ichiro Sakaguchi (1897-1958). A brief review of the

researches of Prof. Teizo Takahashi (mainly with saké). A brief review of the researches of Prof. Kin-ichiro Sakaguchi. Prof. Takahashi has 190 references, and Sakaguchi has 394 references. Address: Tokyo, Japan.

1117. Chicago Shimpō, Inc. 1958. Chicago Japanese American directory. Chicago, Illinois: The Chicago Shimpō, Inc. 30 cm. [Eng; jap]

• **Summary:** In Japanese characters at the top left of the cover: *Nikkei-jin Shikago Jushoroku*. This directory, which sells for \$1.00, also contains many space ads. On the cover is a photo of the Chicago skyline behind a public park in which there is a white band shell (a bandstand having at the rear a sounding board shaped like a huge concave seashell) and in the distance a fountain.

Page 14: Half-page ad for: “Pacific Trading Co. General importer and exporter. 884 W. Erie St., Chicago 22, Illinois. They also have offices in Los Angeles (119 S. Central Ave.) and New York City (57-10 38th Ave.). Items they import include Kikkoman shoyu, Ajinomoto, and rice.

Page 15: Half page ad for Aji-no-moto (Tokyo, Japan) titled “Mother knows best.” “When it comes to cooking food with hearty, old-fashioned flavor, mother knows best—she always seasons with Aji-no-Moto.” “99+% pure monosodium glutamate.”

Page 19: 1/8 page ad for: “Tanaka Tofu Mfg. Co., 1358 N. Clark (rear). WH 4-3938.” The top 30% of the ad is in English; the rest is in Japanese. Same page: ¼ page ad for Fujimoto & Company, 302 South 4th West, Salt Lake City, Utah. Tel. EMpire 4-8279. Illustrations show: (1) The company’s Kanesho brand; (2) A Japanese woman kneeling behind a porcelain mortar (*suribachi*), holding a wooden pestle (*surikogi*), and using it to grind miso until it is smooth. The top 25% of the ad is in English; the rest is in Japanese. The company also makes and sells koji.

Page 46: Under “Food manufacturers” and again under “Food markets and groceries” are listings (entirely in English) for Tanaka Tofu Mfg. Co. at the address and phone shown above. Plus: “After 2 pm call DI 8-9703.”

Talk with Karl Matsushita, director, Japanese-American National Library in San Francisco. 2008. Feb. 1. He thinks these directories were first published after World War II. His library has only one volume of this periodical published in 1985; he does not know when the first volume was published. The War Relocation Authority (WRA), after World War II, pushed Japanese to relocate in Chicago and the Midwest, where they felt there would be less anti-Japanese sentiment. Address: 1310 N. Wells St., Chicago 10, Illinois. Phone: Whitehall 3-2326.

1118. Dean, R.F.A. 1958. Use of processed plant proteins as human food. In: A.M. Altschul, ed. 1958. *Processed Plant Protein Foodstuffs*. New York: Academic Press. xv + 955 p. See p. 205-47. Chap. 9. [99* ref]

• **Summary:** Contents: General considerations: Early sources of protein for human food, competition for food between man and his domestic animals, vegetarianism and vitamin B-12, protein requirements (of children, of adults). Plant proteins now in use: Foods that can be prepared in the home (cereals, legumes {incl. groundnuts, soybean}, sunflower seed, sesame), plant foods used after factory processing (cereals, legumes, sunflower seed meal, cottonseed meal). Other forms of plant food: Plankton, algae, food yeast, leaf proteins (p. 237-38). Future extensions of the use of plant proteins: The theoretical basis of selection, assessment of the value of foods intended for human consumption, practical measures for the future.

In 1957 some 160,000 tons of soybeans were used to make tofu in Japan. "Magnesium or calcium salts are the precipitants of the curd from the soybean milk; the product is eaten by nearly every family in Japan with its breakfast miso-soup."

During World War II, the attempt was made to introduce soya as a food crop to Uganda. But "no instruction was given in the necessary details of preparation, with the result that the crop was very reasonably declared inedible by the Africans. They retain a violent prejudice against it and are suspicious that it has been added to any food, such as yellow corn meal, that they find distasteful.

"One of the most interesting methods for making soya edible has evolved in Indonesia and was described in full by Van Veen and Schaeffer (1950). It takes advantage of the ability of the mold *Rhizopus oryzae* to grow on the bean and alter its constituents... The product made from soya is called *tempeh kedele* (kedele = soybean)." Details of the production process are given. A description of natto and its composition is also given (p. 218).

The section on algae gives detailed information on chlorella, a type photosynthetic single-cell protein. As early as 1954, Morimura and Tamiya in Japan were experimenting with the used of powdered *Chlorella ellipsoidea* in foods. Note: This is the earliest document seen (Aug. 1997—one of two documents) that mentions the use of algae or other photosynthetic single-cell protein as food.

The section on leaf proteins (p. 237-39) begins: "Protein synthesis is one of the chief activities of the leaf, and proteins are comparable to animal proteins in their amino acid composition (Lugg 1949). The young leaf is especially rich in protein..." Pirie (1953) has suggested a process for recovering the leaf protein from the fibrous residue left after mechanical separation; the protein is usually very difficult to free. Pirie (1953) has also described the likely structure of an efficient plant. "There are also obvious possibilities in such abundant and little-used material as the leaves of sugarcane, cassava, and bananas" (p. 238-39).

The section titled "Sesame" (p. 219-20) states that the Zande people of southwestern Sudan steep the seeds in

water for a few minutes, then pound them lightly to loosen the outer coat. They then dry the seeds and the outer coat is sieved or winnowed away. The seeds are then roasted and ground to a paste, which is sometimes used to make a sauce (Culwick 1950). "The use of sesame as a sweetmeat or condiment is fairly widespread in the Near East. A sweetmeat called *tahinya* or *tahina* is made in the Gezira [Sudan] by cooking the roasted seeds in sugar; sometimes the seeds are crushed before the cooking, and sometimes not" (Culwick 1951). Describes how to make the condiment. Address: Medical Research Council, Mulago Hospital, Kampala, Uganda.

1119. Kawamura, Wataru. 1958. Miso enkaku-shi [History of miso]. Tokyo: Zenkoku Miso Kogyo Kumiai. 817 p. Illust. 22 cm. [96 ref. Jap]

• **Summary:** The definitive work on the subject. Pages 187-213 list all early Japanese books mentioning miso, with a summary of what each says about it. Contents: Preface. Part 1. Tradition of miso (p. 1-228). Chronological table of miso history. Introduction (p. 1). Outline (p. 9). 1. Transportation in China and Japan in ancient times (p. 19). 2. Jiang in China (p. 29). 3. Jiang in the *Ch'i-min yao-shu* (p. 37). 4. Ancient Japan (p. 50). 5. The *Kojiki*, the *Nihonshoki* and miso (p. 55). 6. The Asuka and Hakuho periods (p. 66). 7. The Nara period (710-784 A.D., p. 72). 8. The Heian period (794-1160, p. 85). 9. The Kamakura period (1185-1333, p. 106). 10. The Muromachi period (1338-1573, p. 125). 11. The Momoyama period (1568-1600, p. 148). 12. The Edo period (1600-1868, p. 158). Appendix 1. Collections of old miso information (p. 187-213). Appendix 2. Old miso cookery (p. 215-228; recipes names and general descriptions of how to prepare them but with no amounts given).

Part 2. Local folk records of miso (miso in various prefectures from Hokkaido to Kagoshima-ken, p. 229-461).

Part 3. History of miso regulation (p. 463-815). 1. Early history of regulation (p. 463). 2. Intensification of regulation during World War II (p. 468). 3. National Miso Industry Association (p. 477). 4. Economic regulations and the new economic systems (p.494). 5. Regulatory activities of the Federation (p. 520). 6. Enforcing the *ichigen-teki* regulation (p. 543). 7. Organizing the system of production and supply (p. 555). 8. Methods of doing business (p. 567). 9. Regulation guidelines for processing miso (p. 582). 10. Consolidation of businesses (p. 622). 11. The Emperor's visit (p. 638). 12. Regulation of the controlled companies (p. 641). 13. Management after the war (p. 665). 14. Pressing conditions of miso and food (p. 694). 15. Discontinuance of *kokka sodo in ho* (national order of total mobilization, p. 723). 16. Start of the public organization for food rationing (p. 729). 17. Effect of food rationing on miso (p. 747). 18. Discontinuance of the public organization ("Kodan," p. 765). 19. National Miso Industry Association

(p. 728). 20. Today's miso fermenting technology (p. 798).

21. Conclusion.

Note: A translation of this book into English would yield many heretofore hidden treasures for English speakers.

Address: Miso teacher, 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan.

1120. Koyanagi, Tatsuo; Sato, Mitsuko. 1958. Miso no eiyô zôkyô ni kansuru kenkyû. I. Soruburu tenka miso-chû no B-12 oyobi mechionin ganryô [Studies on the enrichment of "miso". I. Vitamin B-12 and methionine contents of "miso" fortified with viscera solubles]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 10(6):269-71. [4 ref. Jap; eng]

• **Summary:** The fish viscera solubles were added before fermentation. If less than 2% by weight, no fishy smell appeared in the final product.

1121. Motoyama, Tekishu. 1958. Inshoku jiten [Encyclopedia of food and drink]. Tokyo: Heibonsha. 604 p. Illust. 27 cm. [Jap]

• **Summary:** Includes listings for the following soy-related terms: Aburage (deep-fried tofu pouches), aemono (Japanese-style salads), agedashi-dofu, daizu (soybeans), dengaku, fu (wheat gluten; but the term "seitan" is not listed in this book), ganmodoki (tofu burgers), gisei-dofu, goma-dofu (sesame tofu), goma-miso (sesame miso), inari-zushi, iri-dofu (scrambled tofu), kenchin-jiru, miso, namemiso, natto, oboro-dofu (soymilk curds), oden (stew), okara, shira-ae (tofu salad), shoyu, sukiyaki, tekka, teriyaki, tofu, tonyu (soymilk), tsuto-dofu, unohana (okara), yakimiso (broiled miso), yuba.

Separate entries, with detailed information, are given for some of the above word or terms.

1122. Motoyama, Tekishu. 1958. Inshoku jiten: Tekka miso [Encyclopedia of food and drink: Tekka miso (Document part)]. Tokyo: Heibonsha. 604 p. See p. 396. [Jap]

• **Summary:** Tekka miso is a type of finger-licking-miso (*name miso*). Ingredients (like roasted soybeans, chopped burdock root, etc.) are mixed into a regular red miso, then add to your own taste, gingerroot, sugar, and/or barely malt syrup (*ame*). Finally everything is sautéed / cooked [often for quite a while] in sesame oil.

Some gourmets love to have this special miso made with added minced red chili peppers to make it a little spicy.

1123. Richards, Janet; Richards, Charles. 1958. Basic Chinese and Japanese recipes. 3rd ed. rev. and expanded. San Francisco, California: City Lights Books. 75 p. Index of recipes. 17 cm.

• **Summary:** Contents: Introduction (General. For epicures, vegetarians, and dieters). Chinese recipes. Japanese recipes. General information: Buffet, party foods & hors d'oeuvres.

To brew tea. Special imported ingredients. Where to get ingredients & equipment.

Introduction: "Most of the recipes in this book appear constantly on the menus of the Chinese and Japanese restaurants of San Francisco, New York, and a few other cities that have a population segment with Chinese or Japanese ancestry." Many recipes call for "soy sauce" and up to 1 teaspoon "MSG powder."

The section "For epicures, vegetarians, and dieters" states: "Of the special foods of the Orient, the most versatile is the soy bean. The number of widely differing foods made from soy beans is very large, including bean thread, noodles, soy sauce, soy milk with its derivatives such as dofu, the fermented nam yu and fu yu of China and miso of Japan. Western food technology has also added to the list."

Soy-related recipes—Chinese: Lo han chai (with dofu and seaweed, p. 19-21). Dofu with oyster sauce ("1 block of Japanese tofu, or 2 cakes of Chinese tofu," p. 22). Steamed fish with dofu (p. 29-30). Chicken in soy (with 1 cup soy sauce, p. 31-32). Chinese sauce [commercial]: Foo yü (sharp thick sauce [fermented tofu]). Jeung yow (soy sauce).

Note: This is the earliest English-language document seen (Feb. 2007) that uses the terms "nam yu" or "fermented nam yu" or "Foo yü" to refer to fermented tofu.

Japanese recipes: Miso soup (with tofu. Miso is "fermented soy beans," p. 48). Konbu salad (with soy sauce, p. 49). Egg plant with miso (p. 50). Turnips in soy (soy sauce, p. 50). Misoyaki (p. 54-55). Joints of chicken teriyaki (with Teriyaki sauce, p. 56). Beef sukiyaki (with tofu, p. 59-60). Beef teriyaki (cook on a hibachi, p. 60). Teriyaki sauce (p. 61; Ingredients: ½ cup table syrup {light cane molasses}, 1 quart shoyu {high quality Japanese soy sauce}, 3/4 lb. sugar, 2 pieces dashi konbu {dried kelp} 6 inches long, ½ teaspoon MSG powder, 2 tablespoons sake). Quick teriyaki sauce (p. 61; Ingredients: 3/4 cup soy sauce, 3 tablespoons sake {or sherry}, ¼ cup sugar, 1 teaspoon grated ginger, ½ tsp. MSG powder). Buta dofu (with "soy bean curd," p. 63).

Special imported ingredients (p. 68-71): Japanese—Canned foods: Bean curd, prepared black soy beans. Packaged foods: Miso (the light variety, fermented soy bean paste). Bottled foods: Fuyü (Chinese bean cake; Order top quality such as Quong Hop brand). Shoyu (soy sauce; Order top quality such as Kikkoman, Higeita, or Marukin). Chinese—Bottled foods: Soy sauce. Black beans (Dow Shee; for black bean sauce).

1124. Shih, Shêng-han. 1958. A preliminary survey of the book *Ch'i Min Yao Shu*: An agricultural encyclopaedia of the 6th century. Peking, China: Science Press. iv + ii + 107 p. No index. 21 cm. 2nd ed. 1962. [Eng]

• **Summary:** A discussion in English of the contents and significance of this key Chinese agricultural work. Contents: Preface. The Book *Ch'i Min Yao Shu*. Analysis of its source books. Part I: Original material in the *Ch'i Min*

Yao Shu. Realisation of the importance of proper choice of season and soil. Cultivation of cereals. Culinary vegetables (Chiang ts'ai or soya hydrolysate conserves, p. 53-54). Fruit trees. Timber woods. Other economic plants (fiber crops, tinctorial plants). Animal husbandry. Domestic economy: Food processing (refining table salt by recrystallization, preparation of fine starch from cereal, saccharification of starch to prepare "barley sugar," fermentation [alcoholic fermentation, acetic fermentation, chiang {incl. soybean chiang; protein hydrolysates, p. 84-87}, shih {soy nuggets, interrupted and melanised protein hydrolysates, p. 87-88}, tsü {pickles, lactic fermentations from intrinsic carbohydrate}, cha {pickles, lactic fermentation from added carbohydrates}, lo {cheese lactic fermentation with casein}], fu and lah [jerked and salted meat]), other technical instructions for commodities of daily life (detergents {saponins}, extraction of pigments from bastard-saffron, dyeing with vegetable pigments, heating to accelerate "drying" of oils, glue-making, preparation of cosmetics). Part II: The influence of the *Ch'i Min Yao Shu* on agricultural science in China. Epilogue. Address: PhD (London), Prof. of Plant Physiology, Northwestern College of Agriculture [Wukung, Shensi], China.

1125. Tamiya, Hiroshi. 1958. The koji, an important source of enzymes in Japan. In: Proceedings of the International Symposium on Enzyme Chemistry; Tokyo and Kyoto. Tokyo: Maruzen Co. Ltd. 541 p. Held 15-23 Oct. 1957 in Tokyo and Kyoto, Japan. See p. 21-24. [17 ref]

• **Summary:** "Etymologically the word Koji is an abbreviation of Kabi-tachi meaning something like 'Bloom of Mold,' and, as a matter of fact, the essential part of Koji is the mold *Aspergillus oryzae*, which is grown on steamed rice or other cereals and sometimes on steamed pulses. In the brewing of the Japanese rice-wine saké, Koji has long been used as the 'malting' agent to convert rice starch into fermentable sugar."

It is "no exaggeration to say that the dietary life of Japan cannot exist without Koji or the mold *A. oryzae*. At present the foods and drinks processed with this agent are being consumed at the rate of about 1,000 million U.S. dollars each year, and the taxes taken from it run up to more than 500 million U.S. dollars each year, which is as much as 20 per cent of the total national budget of our country [Japan; Sakaguchi 1957].

"Historical documents show that Japan learned the use of Koji from China more than 1700 years ago... But the real understanding of the nature and the mode of action of Koji became possible only in the latter half of the 19th century when our country opened her door to Western civilization. It was with the initiation of scientific studies of Koji at this dawn of a new age that enzymology in Japan made its start.

"Soon after the Meiji Restoration in 1868, some governmental colleges were established for conducting

higher education of western science and technology. As the teaching staff of these colleges a number of scientists were invited from Western countries. The mold *A. oryzae* was first isolated from Koji in 1878 by a teacher of natural history from Germany, Dr. Ahlburg*, and the fact that the mold has a strong diastatic activity was first made clear in 1881 by a teacher of applied chemistry from England, Dr. Atkinson **. (Footnote: *Ahlburg, H., and Matsubara, S., *Tokyo Iji-Shinshi* 24, 12 [1878].) (Footnote: **Atkinson, R. W., *Tokyo Imp. Univ., Sci. Dept.* 6,1 [1881]; *Proc. Roy. Soc.* (London) 32,299 [1881].)"

The first Japanese scientist to become deeply interested in Koji was Jokichi Takamine. He "eventually succeeded in increasing considerably the diastatic activity of the mold. Having heard that the malting process using mold activity had never been practiced in occidental countries, an ambitious idea occurred to him, the idea of introducing the method into those countries, and with this idea he went to America in 1890. The demonstration he made there was a successful one, but unfortunately his project could not be realized due to the strong opposition of the manufacturers of malt. Undeterred by this failure he soon started an entirely new project, again using Koji-mold, but this time preparing from it a drug having a strong digestive activity*. The procedure he adopted was to grow Koji-mold on [wheat] bran, and to extract the mixture with water, from which the enzymes were precipitated with alcohol. The drug was named Takadiastase after his name Jokichi Takamine, the name which gained world-wide fame not only from this brilliant invention, but also through his later discovery of the adrenal hormone, adrenaline. (Footnote: *Takamine, J., U.S. Patent, 525823, 525825 [1894].)

"As Takadiastase gradually found a larger market, this commercial preparation or its origin *A. oryzae* also became a popular material for the study of enzymes in biochemical laboratories. The more it was investigated, the more varieties of enzymes were found in it. Since the early twentieth century it thus became one of the most popular research objects used in the study of enzymology*. (Footnote: *Tamiya, H., and Morita, S., *Bibliographie von Aspergillus*, *Botan. Mag.* (Tokyo) 43, No. 506 [1929] to 44, No. 524 [1930].)" Address: The Inst. of Applied Microbiology, Univ. of Tokyo and Tokugawa Inst. for Biological Research, Tokyo, Japan.

1126. Zain, Sutan Muhammad. 1958. *Djalan bahasa Indonesia*. 7th ed [Indonesian style]. Jakarta / Djakarta, Indonesia: Grafica. 148 p. See p. 8. 21 cm. [Ind]*

• **Summary:** Page 10: tautjo [Indonesian-style miso], tauge [soy sprouts].

1127. Hayashi, Shizuka. 1959. Seek suitable U.S. food varieties [of soybeans]. *Soybean Digest*. Jan. p. 25-26.

• **Summary:** “Nagano prefecture with about 320 miso manufacturers is the largest miso producing area in Japan. Its annual output is approximately 140,000 tons, more than one-fourth of the total Japanese production. Nagano miso is popularly known as ‘Shinshu miso.’ It is lighter in color than the miso produced in other areas.”

Miso made from U.S. soybeans sells for a lower price than that made from Japanese or Chinese soybeans. “The biggest objections to U.S. soybeans were that they contained morning glory seeds, corn and other foreign material not found in beans of other origin. U.S. soybeans take much longer time in cooking to obtain the required softness. Due to the extra time required in steaming the color of the miso produced becomes darker. Further, the irregularity in size of the U.S. soybeans causes unevenness in softness when they are cooked. Broken beans are objectionable for this reason. Above all, the ‘taste’ of the soybeans after they are cooked is claimed to be unsatisfactory as compared with other beans, and this affects the sweetness or flavor of the miso produced.”

Japanese miso makers used to import significant amounts of soybeans from China, but since the breakoff in trade between Japan and China last April, Chinese beans are no longer imported to Japan. So manufacturers of miso and tofu will have to rely more on U.S. soybeans. “Even the largest frozen (dried) tofu makers in the Nagano area are using U.S. soybeans.” They met recently in Nagano city to discuss ways of getting better quality soybeans from America. A photo shows Mr. Hayashi speaking at this meeting. Address: Managing Director, Japanese American Soybean Inst., Nikkatsu International Building, No. 1, 1-Chome, Yuraku-cho, Chiyoda-ku, Tokyo, Japan.

1128. Nakano, Masahiro. 1959. Miso to shōyu [Miso and shoyu]. *Shokuhin Kogyo (Food Industry)*. Feb. p. 45-57. [19 ref. Jap]

• **Summary:** One graph shows miso production in Japanese factories from 1930 to 1955, and total and total supply in Japan from 1950-55. The difference between factory production and total supply would be accounted for by home production or imports. Factory production was about 590,000 tonnes (metric tons) from 1930 to 1940. It dropped during World War II, reaching a low of 200,000 tonnes in 1947. By 1955 it had recovered to about 500,000, but total supply was about 900,000 tonnes.

A second graph shows shoyu production in Japanese factories from 1930 to 1955 and total supply in Japan from 1950 to 1955. Factory production was about 1,040,000 tonnes from 1930 to 1940. It dropped during World War II, hitting a low of about 400,000 tons in 1947. By 1955 it had risen to about 1,180,000, surpassing the pre-war high of about 1,080,000. Total supply in 1955 was about 1,350,000. Thus in 1955 total miso supply was about 180% of factory production, whereas total shoyu supply was about 14%

more than factory production. Miso factory production never surpassed its pre-war high. After the war, 35% of the miso and 15% of the shoyu was homemade, but thereafter it has decreased steadily. The rest of this article is mostly about the nutritional benefits of miso and shoyu.

Miso and shoyu were developed because of our need for salt. In the West, salt was also important. The Latin word for salt is salsa [actually, sal], and this word is the origin of the word salary, the payment for workers. The word sauce also stemmed from sal. Address: Shokuryo Kenkyujo Hakko Shokuhin Bucho.

1129. Nakano, Masahiro. 1959. Miso [Miso]. *Shokuhin Kogyo (Food Industry)*. Feb. p. 5-7. [Jap]
Address: Shokuryo Kenkyujo Hakko Shokuhin Bucho.

1130. Ohsawa, George. 1959. La philosophie de la médecine de l'Extrême-Orient: Le livre de jugement suprême [The philosophy of East Asian medicine: The book of supreme judgment]. Paris: Librairie Philosophique J. Vrin. 207 p. Feb. 16. No index. 20 cm. [Fre]

• **Summary:** The author's name on the title page is given as “Nyoiti Sakurazawa (Ohsawa).” Contents: Foreword. Dedication: To my dear Dr. A. Schweitzer. Preface (written by G. Ohsawa on 18 Jan. 1956 at the station of the Protestant Mission at Andéndé, French Equatorial Africa (A.E.F.)). 1. Introduction: Medicine or faith? 2. A practical and dialectical classification. 3. The unique principal of science and the philosophy of East Asia. 4. The origin of man. 5. The medicine of East Asia. 6. The order of the universe and the constitution of man. 7. The supreme faculty of judgment. Appendixes: I and II. Practical guide to East Asian medicine: Gives addresses in France, Germany, Switzerland, Belgium, USA (Michio Kushi, 420 W. 119th St., New York 27, New York), Brazil (Tomio Kikuchi, rua Fugandes, 154, Liberdade Centro, Sao-Paulo), Japan (Nippon C.I., 8 Kasumi-cho, Minato-ku, Tokyo).

On p. 46 Ohsawa mentions miso (*la pâte de soya, de blé ou de riz, pâte tout-à-fait végétale,...*).

Note 1. This is the earliest document seen (Jan. 2009) concerning the soyfoods movement in Latin America; Tomio Kikuchi was a pioneer in Brazil.

Note 2. This is the earliest document seen (Oct. 2005) that mentions Michio Kushi.

1131. Yoshii, Hisao; Ishihara, Akiyoshi. 1959. [Studies on soybean koji. I. On the protease activities of miso-dama koji]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 37(3):110-13. English-language summary on p. 12 of this issue. [9 ref. Jap; eng]
Address: Inst. of Food Technology, Aichi prefecture, Japan.

1132. Kalnay, Francis. 1959. Soybean has all the answers (or nearly all). *House Beautiful* 101:174-75, 207-12. May.

• **Summary:** The opening 2-page spread contains photos of many commercial soyfood products available in America at the time: Dr. Fearn's Soy-O pancake flour (one with whole wheat and soya, and the other with just wheat and soya), Pure soya bean powder, and Soya bean granules, Wuest's soya-protein bread, Wuest's cookies, Wel-Pac kinako [roasted soy flour], Yamasa shoyu, Kikkoman shoyu, Oliver Tonkatsu Sauce (Tonkatsu are breaded pork cutlets), Hain soy oil (cold pressed), Amoy soy sauce, Prosperity soy sauce, Golden Sang Chan soy sauce, Madison Zoy-Koff, Hime aka-miso (Pacific Trading Co.), Hime yakidofu, Hime frozen bean curds, Delicious Edamame (Packed by Tokai Kanzume Co. Ltd., Nagoya, Japan), Quong Hop & Co. bean cake [tofu], Schiff soy lecithin, Oriental food shop black soybeans, Climax wheat and soy pure egg noodles (The Pfaffman Co., Cleveland, Ohio), and Prince Veta-Roni (Mezzani or Spaghetti; Prince Macaroni Co.).

The subtitle reads: It's a choice gourmet food. It's as nutritious as vitamin pills. It comes in a dozen forms and makes a hundred dishes.

The author uses soy-related words in a very modern way: "Have you ever noticed the way people who know food pronounce the simple word 'soy'? Their facial expression changes instantly, and their tone of voice turns positively lyric. There are two serious reasons for their extraordinary respect for a bean so little and so innocent. The soybean is enormously rich in protein. This wealth of protein is apparent in both quality and quantity... And because soy oil is high in unsaturated fatty acids, it fits well into today's popular low-cholesterol diets.

"In our country soy is relatively new... Soy is the most versatile legume imaginable... The glittering star in soy's troupe of players is soy sauce (also called soya and shoyu)... The soy food industry is still in its infancy in the U.S. Yet the variety of soy products available is impressive."

Note 1. This is the earliest publication seen (April 2001) that mentions Quong Hop & Co. in connection with tofu.

Note 2. This is the earliest English-language document seen (Aug. 2003) that contains the term "soya-protein" (or "soya-proteins").

1133. **Product Name:** Hime Brand Aka-Miso.

Manufacturer's Name: Pacific Trading Co. (Importer, Distributor). Made in Japan.

Manufacturer's Address: San Francisco, Los Angeles, New York.

Date of Introduction: 1959. May.

New Product–Documentation: Francis Kalnay. 1959. House Beautiful. May. p. 174-75. "Soybean has all the answers." Photo of the label.

1134. Claiborne, Craig. 1959. Food: Oriental fare. Another Chinese restaurant opens—Menu lists cellophane-wrapped fowl. *New York Times*. June 19. p. 16.

• **Summary:** This is a review of the Chinese restaurant Esther Eng (1085 Second Ave., near 57th St., Manhattan, New York City). One appetizer is listed on the menu "as cellophane wrapped chicken. To prepare it, small bits of chicken are marinated in a mixture of hoisin sauce and peanut butter, wrapped in cellophane and deep-fried. Hoisin sauce is an inscrutable mixture of spices and plums."

Note: This is the earliest document seen (Sept. 2008) in all major U.S. newspapers digitized by ProQuest that uses the term "hoisin sauce," which is typically sold in bottles or cans and has soybeans as its main ingredient. The new term appears in 805 documents between 1959 and the present, including this three in 1939, 17 in the 1960s, etc.

1135. Hayashi, Shizuka. 1959. Miso makers protest F.M. in U.S. beans. *Soybean Digest*. June. p. 26.

• **Summary:** On May 9, all 49 directors of the All Japan Miso Industry Association signed a petition protesting the unacceptably high levels of foreign material [F.M.] in U.S. soybeans exported to Japan. The greatest problems are with corn, morning glory seeds, and split beans. Morning glory seeds must be picked out (usually by hand) and burned in accordance with Japanese food and hygiene laws. Address: Japanese American Soybean Inst., Nikkatsu International Building, No. 1, 1-Chome Yurakucho, Chiyoda-Ku, Tokyo, Japan.

1136. Williams, Robert R.; McGanity, William J.; Combs, Gerald F.; Kertesz, Z.I. 1959. A nutrition survey of the armed forces of the Republic of Korea. *J. of Nutrition* 68(Supplement 1):1-80. June. See p. 12-13. [42 ref]

• **Summary:** An endless variety of soups (which are thick like U.S. stews) are served, mostly in winter; they usually contain some soy products. Seaweed is a delicacy, used in cooking or served with soy sauce. A recent survey based on food disappearance, conducted by the USDA Foreign Agricultural Service, calculated average civilian calorie intake at about 2,058 per day, of which 81% comes from cereals, 5% from meat, fish, eggs, and milk, 4% from oilseeds, oils and fats, 4% from white and sweet potatoes, 2% from fruits and nuts, 1.6% from vegetables and seaweed, and 1% from sugar (p. 8).

The typical formula for Korean Army soup, in grams per man for one meal, is: Cabbage 70, soybean curd [tofu] 30, soybean mash [probably soybean paste, doen jang] 30, large white radishes [*daikon*, *Raphanus sativus*] 30, red pepper mash [kochu jang] 10, salt 10, onion 3, melchi (small dried fish) 2, and red pepper powder 1 (p. 9).

The section titled "Soybeans and soybean products" (p. 12-13) states: "Soybean products are extensively used in the Korean diet and by the ROK Armed Forces." Soybean curd (Japanese: tofu), which is precipitated with calcium or magnesium salts, is used almost daily in making thick soups. It is also "fried in deep fat and used in a composite

ROK Army food called 'seasoned vegetable and bean curd' containing small fish (12%), soy sauce (23%), bean curd (25%), seaweed (16%), dry radish (14%), and red pepper, sugar, and cottonseed oil. This latter product was observed in one ROK Army mess only."

Soybean sprouts are a favorite and very nutritious civilian food in Korea, but their "use in troop feeding is limited, presumably because of the low germination of the soybeans available at the time of our visit."

Fermented soybean sauce is a widely used and nutritious seasoning.

"Seasoned soybeans are a delicacy much liked by Koreans and obtained by boiling soybeans in sweetened soybean sauce. The weight proportions used in the preparation are said to be cooked and roasted soybeans 70%, soybean sauce 25%, and sugar 5%.

"Soybean mash [doen jang] and pepper mash [kochu jang] are fermented foods popular in this part of East Asia." First barley koji is made. "The barley is then milled together with cooked soybeans and salt, and fermented in concrete tanks for about 3 months. The finished paste-like product is rich in Amino acids and protein and is extensively used directly and in cooking. Pepper mash is a similar preparation which contains in addition 10% powdered red pepper." Address: National Institutes of Health, Bethesda, Maryland.

1137. Iwashita, Seishichi. 1959. [Studies on the spoilage by acid increase (sampai) of miso. III. Composition of the volatile acids of sampai miso and normal miso]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 37(7):264-67. July. English-language summary on p. 25 of this issue. [3 ref. Jap; eng]

Address: Asahi Chemical Indust. Co., Japan.

1138. Claiborne, Craig. 1959. Fit for a Kentucky colonel. *New York Times*. Aug. 2. p. SM35.

• **Summary:** Bourbon is so named because it was first distilled from corn in Bourbon County, Kentucky. Contains five recipes that call for Bourbon as an ingredient. One of the recipes, titled "Lamb kebabs hoisin" calls for "½ cup hoisin sauce,... 1 teaspoon soy sauce," etc. The two sauces are used in a marinade for the meat.

1139. Hayashi, Shizuka. 1959. Japanese users react to U.S. beans. *Soybean Digest*. Aug. p. 34.

• **Summary:** "The fact that soybean in Japan are used 100% as food should by now be well realized by those in the soybean industry as well as by the growers. It has been repeatedly emphasized that soybean trade between the United States and Japan is to be based on the complete understanding of this fact."

One of the first projects of JASI "was to find out the causes of the unpopularity of U.S. soybeans among the

Japanese users, especially the manufacturers of soybean products." The major complaints concern excessive "foreign material, broken beans, irregularity of sizes, and mixture of different varieties received. All these problems have been time and again called to the attention of interested parties in the United States." Considerable improvement has been made but there is still work to do. "The writer believes in the very near future specific varieties can be chosen for different food manufacturers and business will be done on the basis of [those] specific varieties.

A list gives the specifications for soybeans desired by Japanese oil processors (6 specs), miso manufacturers (3 specs), shoyu makers (3), tofu makers (2), frozen tofu makers (1), kinako makers (3), and natto makers (3). For example, for miso: (1) Soybeans with white hilum with rich protein content and of big size are preferred. (2) Soybeans should be stored separately by varieties. (3) Foreign material, especially seeds of other plants, sand and stones should be eliminated.

And for tofu: (1) Soybeans should be rich in protein content with thin seedcoat. (2) Soybeans should be free from foreign material, especially that of poisonous seeds of other plants.

A photo shows Shizuka Hayashi tasting miso made from the U.S. soybean varieties Dorman, Mamloxi, and Jackson at the Inamari miso factory in Shizuoka city. Arthur Rollefson, U.S. assistant agricultural attache, is also shown. Address: Japanese-American Soybean Inst., Tokyo.

1140. Nakano, Masahiro. 1959. Traditional methods of food processing. Paper presented at Regional Seminar on Food Technology for Asia and the Far East. 15 p. Held 1-8 Aug. 1959 at Mysore, India. [Eng]

• **Summary:** Contents: General. Soybean foods: Miso, soyu (soy sauce), aspects on the miso and soyu, natto, tofu, kori-dofu. Technological methods of food processing: Koji, miso, soyu [shoyu] (soy sauce), natto, tofu. Conclusion.

Note: This paper was sent as a gift, with note and autograph, to Dr. A.K. Smith of the Northern Regional Research Lab., Peoria, Illinois. Address: Food Research Inst., Ministry of Agriculture and Forestry, Tokyo, Japan.

1141. Sapin, P. 1959. Le soja dans le monde [Soybeans around the world]. *Bulletin Agricole du Congo Belge et du Ruanda-Urundi* 50(4):897-948. Aug. [39 ref. Fre; dut]

• **Summary:** This articles focus on soya at Yangambi in the Belgian Congo. Content: Introduction. Climatic adaptation: Comparison of the climates in Harbin (central Manchuria) and Yangambi (near the equator), photoperiodic and thermal characteristics of soybeans, comparative study of the behavior of soya at Yangambi and its main zones of cultivation, eco-climatic chart of soya, classification of soybeans (*des sojas*) into fundamental climatic types and

directives for the realization of their introduction to Yangambi. Selection: Classification of the soybean varieties, genetics, and selection. The cultivation of soya. Characteristics of the seed and its utilization: Composition of the seed, Oriental preparations based on soya (soy sprouts, soymilk, tofu, natto, Hamanatto, yuba, miso, soy sauce or shoyu), soy oil and by-products, soybean cake, use of soya in the West. A glance at soybean production. The situation in the Belgian Congo.

The author identified a number of soybean varieties adapted to different ecological zones in the tropics, which helped soybeans spread to tropical countries, especially in Africa. Address: Assistant à la Division des Plantes Vivrières de l'INÉAC, à Yangambi [Belgian Congo].

1142. Smith, Allan K. 1959. Research on the increasing use of U.S. soybeans in Japan. *Soybean Digest*. Sept. p. 62-65.

• **Summary:** "In 1956 the American Soybean Association in collaboration with the Foreign Agricultural Service of the U.S. Department of Agriculture started a market development program on soybeans in Japan."

Late in 1957 Dr. Smith "spent 2 months in Japan studying the products and processes where U.S. soybeans are competing with Japanese and communist Chinese beans." He found that the traditional foods of Japan are processed from whole soybeans, whereas in the USA the use of whole soybeans has, until recently, "received no commercial recognition for food, feed, or industrial application. Also the traditional food processors of Japan value the protein more highly than the oil which is the reverse of the emphasis in this country."

The results of Dr. Smith's investigations were published in April 1958 under the title "Use of United States soybeans in Japan." "The problems raised by the Japanese are briefly summarized as follows: 1-Composition: It was generally stated that Japanese soybeans are higher in protein than our soybeans. 2-U.S. soybeans are slower to absorb water than Japanese beans and absorb water unevenly. 3-Our soybeans cook unevenly and consequently they may not support uniform fermentation. 4-Products from U.S. soybeans are darker in color than those made from Japanese soybeans. 5-Food products from U.S. beans do not have as good a flavor as from Japanese soybeans. 6-The Japanese do not like the amount of foreign matter, split and broken beans, and other crop material in U.S. soybeans.

Following Dr. Smith's investigation in Japan, a research project was initiated at the Northern Regional Research Laboratory in Peoria, Illinois. The immediate objectives of the project are: 1-To investigate the reported differences between U.S. and Japanese soybeans and to evaluate their significance. 2-To compare approximately 30 U.S. and 6 Japanese soybean varieties in miso and tofu, two most important Japanese foods, and to determine which U.S. varieties are suitable for making these foods. 3-To study the

processing methods used by the Japanese and to modify their processes for better adaption [adaptation] of our soybeans to their use...

"Two Japanese scientists, Tokuji Watanabe and Kazuo Shibasaki, accepted invitations to come to the Northern Laboratory to work on these projects."

In the 9 months that Dr. Shibasaki and Mr. Watanabe spent at the NRRL they made progress on all the 6 problems listed, though the project is still underway. They found two U.S. soybean varieties, Jackson and Lee, that make tofu very similar to that made from Japanese soybeans. Other promising varieties are Blackhawk, Comet, Dorman, Ottawa, Mandarin, and Acme.

"Composition: It was reported, and generally assumed to be true, that Japanese soybeans were higher in protein and lower in oil than U.S. soybeans. We have accumulated data (all on a moisture-free basis) to determine whether this report is true. Table 1 shows the protein and oil content of eight Japanese soybean varieties grown in various parts of Japan during 1957 or 1958. The name often indicates the area grown: Aomori, Hokkaido Akita, Kumamoto, Miyagi, Nagano, Hagi-Dani, Hokuho, and White Hilum Iwate. These 8 Japanese varieties contained an average of 40.5% protein and 17.2% oil in 1957 and 42.3% protein and 16.8% oil in 1959.

Table 2 shows the protein and oil content of 15 U.S. [and Canadian] soybean varieties grown in various parts of the USA during 1956, 1957 or 1958: Acme, Adams, Blackhawk, Chippewa, Clark, Comet-1, Comet-2, Dorman, Dortchsoy, Harosoy, Hawkeye, Jackson, Lee, Lincoln, and Norchief. These 15 U.S. varieties contained, on average, 41.8% protein in 1956, 40.1% in 1957, and 40.7% protein and 20.2% oil in 1958. Comparing these two tables, Dr. Smith concludes that U.S. and Japanese soybeans contain about the same amount of protein, but that U.S. field-type soybeans contain about 3.7% more oil than Japanese soybeans.

Table 3 shows the maturity group, protein and oil content, and weight in grams of 100 seeds for 33 recommended U.S. and Canadian varieties. This data is based on Cooperative Uniform Soybean Tests. These 33 varieties are grown in all the major soybean growing areas of the USA; Groups 00 to IV inclusive are grown in the North Central States, approximately north of Cairo, Illinois, to northern Minnesota; groups V to VIII inclusive are grown south of Cairo. The 33 varieties, sorted by ascending maturity group, and within each group alphabetically by varietal name are: Acme (00, Canadian), Crest, Flambeau, Capital (0), Comet, Grant, Mandarin, Norchief, Blackhawk (I), Chippewa, Adams (II), Harosoy, Hawkeye, Lindarin, Ford (III), Lincoln, Shelby, Clark (IV), Perry, Scott, Wabash, Dorman (V), Dortchsoy, S-100, Hood (VI), Ogden, CNS-4 (VII), Jackson, Lee, Bienville (VIII), Improved Pelican, J.E.W. 45 [Wannamaker], and Yelanda. This table

shows that the oil content increases slightly as one moves from north to south

Smith then discusses garden- or vegetable-type soybeans. “U.S. vegetable soybeans: There is no clear definition for distinguishing the field-type from the garden-type beans. The distinctive features of the garden beans are in their superiority in flavor, texture, and ease of cooking—properties that make them preferred for food use... Most of our so-called vegetable-type soybeans we are growing in this country are Japanese garden varieties that came directly from that country; the Kim and Kanrich were developed in this country. Serious disadvantages of garden-type beans which restrict production are the tendency to shatter from the pods when ripe and the consequent large loss with mechanical harvesting... the yields of some varieties are also lower than for field beans. It has been stated frequently that the garden-type bean is higher in protein and lower in oil than the field type.

Table 4 shows the protein, oil, weight of 100 seeds in grams and hilum color for 14 “garden-type soybeans” on a dry basis. The source of the data for all the varieties except Kanrich, Kim, and Easycook is the University of Illinois Bulletin 453 by J.W. Lloyd and W.L. Burlison 1939 [“Eighteen varieties of edible soybeans: Their adaptability, acceptability, culture and characteristics”]. “For these data the protein values are no higher than for present-day field types and the oil values are only 0.77% lower” than typical field types soybeans shown in table 3. The weight in grams of 100 seeds, in descending order of seed weight and size, is as follows: Hokkaido 31.9, Funk Delicious 31.7, Willomi 31.1, Jogun 29.9, Emperor 29.7, Giant Green 29.4, Kim 28.7, Imperial 28.4, Kanrich 27.3, Fuji 25.9, Illington 25.9, Higan 23.4, Bansei 21.2, and Easycook 16.2.

Conclusion: It “appears that claims for high protein values for garden type soybeans may be exaggerated.” A portrait photo shows A.K. Smith.

Note 1. This is the earliest document seen (Dec. 1998) concerning the breeding or selection of soybean varieties for food use—in this case tofu for Japan.

Note 2. This is the earliest English-language document seen (Oct. 2001) that mentions “garden-type soybeans” or “vegetable-type soybeans.” The two terms as synonyms. Address: NRRL, Peoria, Illinois.

1143. *New York Times*. 1959. Food news: No tipping allowed in Red China. Oct. 26. p. 32.

• **Summary:** Mr. Gerald Clark, a Canadian, and author, and a correspondent for the Montreal Star, has just returned from China. He said that his favorite dish was Peking duck, a specialty of that city.

“It’s really something,” he said. The ducks are specially fed and spend the latter part of their short lives tethered. It seems cruel, but the result is an unusually tender and succulent dish. After roasting, the duck is carved into very

thin slices covered with wonderfully crisp skin. The pieces are wrapped pancake fashion in a ‘doily’ made of wheat flour, and dipped in hoisin sauce and scallions.”

1144. Richard, C. 1959. Le chao: Fromage de soja fermenté, salé et alcoolisé [Chao: A fermented soy cheese, containing salt and alcohol]. *Societe des Etudes Indochinoises, Bulletin (Saigon)* 34(3):317-24. Oct. [14 ref. Fre]

• **Summary:** Contents: Introduction and types of soyfoods in Vietnam. Preparation of Chao. Chemical composition. Culinary uses of Chao: In vegetarian diets, in regular diets. Summary.

Chao, a “cheese analog,” is widely consumed in Vietnam. It is prepared as follows: Coagulate soymilk with vinegar or nigari. Press the tofu well, cut it into cubes or parallelepipeds from 2 to 4 cm on a side, and let it dry on mats for 20-24 hours. Salt it and leave it for 24-48 hours. Then wash the tofu cubes to remove the excess salt. Put the cubes in pots of glazed stoneware with rice wine; leave for 20 days. Photos show: (1) Tofu in its earthenware pot. (2) Overhead view of the cubes of chao surrounded by the brining liquor. Note: The author makes no mention of fermentation, but it probably happened while the tofu.

A table gives the chemical composition of five samples of Chao sold in South Vietnam. They contain on average: moisture 76%, salt 11%, alcohol 5%, protein 7%, oil 3.5%.

Culinary uses: In Vietnam, Chao—a true food condiment—serves to season various dishes and to aromatize or perfume (*aromatiser*) certain sauces. Because of its slightly tart and salty taste, it is much prized by vegetarians, for this soya cheese (*fromage de soja*) contains only vegetable proteins (*protéines végétales*). In vegetarian diets, it is incorporated into rice dishes and rice-based soups, and often accompanies various vegetables—such as cucumbers. Because of its low price, it is often used in place of *tuong* sauces—which are also made by enzymatic fermentation of soybeans. Among the upper classes in Vietnamese society, Chao is mixed with pimento, vinegar, sugar, and oil to make a tasty condiment called *Chao tói ớt*, which is used to enhance the taste of dishes that contain no meat or fish. On the 1st and 15th days of each month, when Buddhists eat no meat, garlic, or onions, they enjoy this tasty condiment.

In regular diets, one usually adds sugar, salt, oil, and pimento. The condiment thus obtained is used to add aroma to roasted or broiled meats, rice noodles, and various legumes. Sometimes it is used as a basting sauce for small pieces of chicken or pork. Address: Docteur en Pharmacie, Chef de Laboratoire, Institut Pasteur de Saigon.

1145. Toyoshima, Haruo; Ueda, Ryûzô. 1959. Miso no yûki-san ni kansuru kenkyû. I. Shihan miso no yûki-san sosei [Studies on the organic acids in miso. I. On the composition of organic acids in commercial miso]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 37(10):431-

35. English-language summary on p. 41 of this issue. [10 ref. Jap; eng]

Address: 1. Mori Women's Junior College, Kobe (Kobe Mori Joshi Tanki Daigaku); 2. Osaka Univ. (Handai Kôgaku-bu Hakko Kôgaku Kyoshitsu), Japan.

1146. Toyoshima, Haruo; Ueda, Ryûzô. 1959. Miso no yûki-san ni kansuru kenkyû. II. Miso no shurui-betsu yûki-san sosei [Studies on the organic acids in miso. II. On the composition of organic acids in various types of commercial miso]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 37(10):436-39. English-language summary on p. 41 of this issue. [7 ref. Jap; eng]

Address: 1. Mori Women's Junior College, Kobe (Kobe Mori Joshi Tanki Daigaku); 2. Osaka Univ. (Handai Kôgaku-bu Hakko Kôgaku Kyoshitsu), Japan.

1147. *FAO Nutrition Meetings Report Series*. 1959. Report of the FAO/UNICEF Regional School Feeding Seminar for Asia and the Far East. No. 22. 53 p. Held 10-19 Nov. 1958 at Tokyo, Japan. [5 soy ref]

• **Summary:** UNICEF stands for the United Nations International Children's Emergency Fund. Appendix 3 (p. 48-51) titled "Data on some nutritious food products that have been developed in Asia and the Far East," discusses Saridele, groundnut extract curd [tofu made from peanut milk], Indian Multipurpose Food (MPF, developed by CFTRI), miso, natto, and tempeh.

"Saridele" is the name that has been given to a spray-dried soybean extract combined with an extract of sesame, or peanut, with or without the addition of malt. Vitamins and calcium are added to saridele in order to make its nutritive value similar to that of cow's milk or to enhance its nutritive value. Flavorings such as vanilla or chocolate are also used, which make the product highly acceptable.

"A plant having a capacity of about 800 kg./day has been erected in Indonesia with the financial assistance of UNICEF and the technical assistance of FAO. Saridele is manufactured from a mixture of soybeans and decorticated sesame in the proportion of 4:1. Malt extract from maize may be used to replace 50% of the cane sugar used. Soybean and sesame are soaked for about six hours and then disintegrated finely, together with 7 volumes of hot water. The slurry is stirred vigorously and then filtered. The filtered liquid is heated under pressure for 10 minutes at 120°C., then flashcooled and formulated with Vitamin A, in oil solution, and malt, if desired. The formulated liquid is homogenized, concentrated in a vacuum evaporator to about 22% solids, then spray-dried. The powder finally is sifted and blended with finely ground cane sugar, and calcium carbonate, riboflavin, ascorbic acid and Vitamin B₁₂ added; the mixture may be flavored with vanilla or chocolate." A table compares the nutritional composition of whole dried

cow's milk and Saridele (based on a leaflet from Saridele Ltd., Indonesia). Address: FAO, Rome.

1148. Kamada, Hidemoto; Sakurai, Yoshito. 1959. Daizu seihin no chakushoku ni kansuru kenkyû. I. [Browning reaction of soybean products. I. Effects of steaming on the color of soybean meal (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 14. p. 123. Dec. [1 ref. Jap]

• **Summary:** Reprinted from *Nosan Kako Gijutsu Kenkyu Kaishi (J. for the Utilization of Agricultural Products)* 5(2):50+ (1958). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1149. Kamada, Hidemoto; Sakurai, Yoshito. 1959. Daizu seihin no chakushoku ni kansuru kenkyû. II. [Browning reaction of soybean products. II. Relationship between the color of steamed soybean meal and the color of miso (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 14. p. 124. Dec. [1 ref. Jap]

• **Summary:** Reprinted from *Nosan Kako Gijutsu Kenkyu Kaishi (J. for the Utilization of Agricultural Products)* 5(2):52+ (1958). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1150. Kamada, Hidemoto; Sakurai, Yoshito. 1959. Daizu seihin no chakushoku ni kansuru kenkyû. III. [Browning reaction of soybean products. III. Significance of soybean water-insoluble carbohydrates in the color formation of miso (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 14. p. 125. Dec. [1 ref. Jap]

• **Summary:** Reprinted from *Nosan Kako Gijutsu Kenkyu Kaishi (J. for the Utilization of Agricultural Products)* 5(3):99+ (1958). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1151. Kamada, Hidemoto; Sakurai, Yoshito. 1959. Daizu seihin no chakushoku ni kansuru kenkyû. IV. [Browning reaction of soybean products. IV. Relationship between amino-carbonyl reaction and the color formation of miso or shoyu (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 14. p. 126. Dec. [1 ref. Jap]

• **Summary:** Reprinted from *Nosan Kako Gijutsu Kenkyu Kaishi (J. for the Utilization of Agricultural Products)* 6(3):104+ (1958). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1152. Nakano, Masahiro. 1959. FAO Ajia chiiki shokuhin kakô kaigi ni shusseki shite [Attending the FAO Asian food processing conference]. *Nosan Kako Gijutsu Kenkyu*

Kaishi (J. for the Utilization of Agricultural Products) 6(6):292-302. Dec. [Jap]

• **Summary:** Discusses Korean meju and soy sauce, Indonesian tempeh (tenpe), ontyom (onchom) and pongrek [sic, bongkrek], and Vietnamese nuoc-mam. Address: National Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1153. *Soybean Digest*. 1959. Soybean recipe book issued by Institute. Dec. p. 25.

• **Summary:** The Japanese-American Soybean Institute (JASI) recently issued a “Book of Recipes Using Soybeans.” Edited by the Japan Nutrition Association (JNA), this booklet includes 108 recipes which have been introduced by the JNA at 2,200 “short courses in dietary improvement” held last year at the 800 Japanese health centers. Attendance at these courses (which were partly sponsored by JASI) was 220,000 people! The booklet, which is available at the health centers, contains articles on frozen and bagged tofu, shoyu, miso, natto, and “golden ajinomoto” (a seasoning made by the Ajinomoto Company).

1154. Ebine, Hideo; Oguri, Y. 1959. Shinku kansô-hô ni yoru kansô miso no shisaku [Preparation of dehydrated miso by vacuum drying]. *Miso Gijutsu (Miso Technology)* No. 64. p. 1-4. [7 ref. Jap]
Address: Shokuryo Kenkyujo.

1155. **Product Name:** [Barley Miso].

Manufacturer's Name: Lima Foods.

Manufacturer's Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.

Date of Introduction: 1959.

New Product–Documentation: Letter from Pierre Gevaert. 1981. Nov. 19; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 233. Probably the first commercial miso company in Europe, they made natural barley miso from 1959-1966, then restarted in Jan. 1981. In late 1981 they were making 1,200 kg/month at plants in Belgium and France.

Note 1. This is the earliest record seen (Jan. 2009) for Lima Foods of Belgium.

Note 2. This is the earliest known commercial soy product made in Belgium, or made by a major European soyfoods company that was still active in Europe during the 1990s.

1156. Miura, T. 1959. [Influence of natto and miso on growth and nitrogen metabolism in normal rats. (I) (II)]. *Nippon Shonika Gakkai Zasshi (Acta Paediatrica Japonica)* 63:2241-54. [Jap; eng]*

1157. Bush, Lewis William. 1959. *Land of the dragonfly*. London: Robert Hale. 224 p. Illust. Index. 23 cm.

• **Summary:** Chapter 20, titled “Mainly About Food,” notes (p. 162-63) that sukiyaki is “cooked with soy, water, sugar, vegetables, bean curd...” And sashimi is “dipped in soy...”

“Miso is indispensable in Japanese cookery and is a paste made from beans and fermented rice, used for soups—particularly at breakfast, for preserving, and also as a condiment.”

Buddhism was well established in China and Korea by the fourth century and was introduced into Japan between A.D. 500 and 600. Note: It may very well be that the cultivation of soybeans and their use in food, including fermented foods, were then introduced into Japan.

1158. Egami, Tomi. 1959. *Typical Japanese cooking*. 1st ed. Translated by V.A. McKenzie Skillman. Tokyo: Shibata Publishing Co. Ltd. Exclusive distributors: Japan Publications Trading Co., Ltd (Tokyo). [viii] + 146 p. Illust. (incl. color photos by Yoshikatsu Saeki). Index. 27 cm.

• **Summary:** Foods marked with an asterisk (*) are exported from Japan to the USA. Many recipes include “soy sauce” and monosodium glutamate (Ajinomoto). Soy related recipes include: Aburage * (“fried soy bean curd”—4 recipes). Broiled soy bean curd [*yakidofu*] (3 recipes). Suki-yaki, Yasainabe, Osechi). Chu-miso paste * (“made from soy beans, salt and rice malt [koji], seasoning for miso soup”—2 recipes). Ganmodoki * (“fried soy bean curd and vegetables”—Nikomi oden). Nama-age (“half fried soy bean curd”—Boiled vegetables). Okara (“soy bean curd leftovers”—Yoshino sushi). Red miso paste * (“made from soy beans, salt and rice malt [koji], seasoning for miso soup”—2 recipes). Soy bean (3 recipes). Soy bean curd * (14 recipes, incl. Gizeidofu / Gisei-dofu, p. 39). Soy bean powder * [kinako] (2 recipes; Kinakomochi, Kushi dango). Soy sauce (“Kikkoman”). White miso paste (“made from soy bean, salt and rice malt [koji], seasoning for miso soup”—2 recipes). Worcestershire sauce (Skewer nibblers).

Other interesting recipes include: Amazake. Azuki-sarashian (“red bean powder”—7 recipes). Black sesame seed (in Sekihan). Mochi rice. Red bean [azuki] (Sekihan). Rice cake (“made of mochi rice”). Seaweeds (kanten / agar-agar, kombu / konbu, nori / green laver & purple laver, wakame). White sesame seed. Yamaimo (“Japanese yam”). Tomi Egami was born in 1899. Address: [Japan].

1159. Ogata, Sohaku. 1959. *Zen for the West*. London: Ryder, for the Buddhist Society. 182 p. Illust. Index. 22 cm. [2 ref]

• **Summary:** In the chapter titled “Life in a Zen monastery,” the section on “Food” states that the meals are very simple. Breakfast consists of gruel and pickles. Lunch is rice mixed with barley, miso soup, and pickles. The evening meal is the same as breakfast. On special occasions, an extra dish will be added. Note: The monastery diet is free of animal products (vegan).

Sôhaku Ogata lived 1901-1973. In Japan, he was professor of Zen Buddhism at Hanazono University. During 1956-57 (during President Dwight Eisenhower's second term) he was invited by the U.S. government to be a Fulbright exchange professor and to deliver lectures on Zen Buddhism at Washington University (St. Louis, Missouri) and at the University of Michigan (Ann Arbor). Before returning to Japan, he visited England, The Netherlands, Belgium, Switzerland, France, Germany, Italy, and Monaco; he gave lectures on Zen and Japanese culture in many cities and towns. Address: Shokokuji Zen Monastery, Kyoto, Japan.

1160. Prescott, Samuel Cate; Dunn, Cecil Gordon. ed. 1959. Industrial microbiology. 3rd ed. Revised by Cecil Gordon Dunn. New York, NY: McGraw-Hill Book Co., Inc. 942 p. Illust. Index. 23 cm.

• **Summary:** Chap. 41, titled "Mold enzyme preparations: Uses and products" (p. 666-83) discusses: Mold enzymes: Submerged culture method, continuous tray method for producing mold enzymes, rotating drum method for producing mold enzymes (described by Underkofler et al. 1947), glucose oxidase, uses of mold enzymes (proteases, fungal enzymes). Some mold products: Use in Japan and China, soy sauce (koji from *Aspergillus flavus-oryzae*, Chinese soy sauce, preparation of the "kojies," chemical soy sauce), soy sauce yeasts, tamari, miso, koji. The section on patents (p. 682) cites 15 patents by J. Takamine yet (amazingly) Takamine's name does not appear in the extensive index at the end of the book—though he is considered by some to be the father of industrial microbiology.

The amylo process and a modified amylo process are discussed on pages 864-66. The amylo process is used primarily for converting starch to sugar by the use of selected molds (*Mucor*, *Rhizopus*), some of which have the ability to produce small quantities of alcohol from sugar.

Soy is also discussed on the following pages: Soybean oil and meal are used in the production of vitamin B-12 by *Streptomyces olivaceus* (p. 485-86). In the production of pentonic acids, several drops of soybean oil were used as an antifoam agent (p. 508). In the production of sodium gluconate, small amounts of soybean oil could be used as an antifoam agent, though they decreased the sugar utilization to an impractical value. (p. 594). L-Glutamic acid can be produced in a number of ways. One is by the hydrolysis of wheat gluten, soybean cake, or other protein-rich food material (p. 713-16). The commercial process now being used in Japan employs sweet potatoes as the chief raw material in a one-stage fermentation process with a strain of *Micrococcus* (p. 712-13).

In the chapter on Saccharifying Agents, Takamine is discussed in the section on "Mold bran" (p. 844). "Takamine, in 1914, advocated the use of mold enzymes

(from *A. oryzae*) in the distilling industry. Studies were carried out in distilleries in Canada using his mold-bran preparation (*Taka-koji*) in place of malt to saccharify grains. Although the yields of alcohol obtained through the use of mold bran were reported to be higher than those obtained through the use of malt, the process was not adopted."

A table (p. 857) lists 19 sources of microbial amylase, including Taka-Diastase, made by Parke, Davis & Co., and Alase, made by Takamine Lab. Also in this chapter, in the section on submerged culture of mold amylases, a table (p. 859) shows that soybean meal is used as a protein source in the production of dextrinizing enzyme by *Aspergillus niger* NRRL 337. Address: 1. Sc.D., Prof. of Industrial Biology (Emeritus), Former Head of the Dep. of Biology and Public Health and Dean of the School of Science, MIT; 2. Assoc. Prof. of Industrial Microbiology in the Dep. of Food Technology, MIT (Massachusetts).

1161. Tsuji, Kaichi. 1959. Misoshiru sanbyaku rokujû-go nichi [Miso soup 365 days a year]. Tokyo: Fujin Gaho-sha. 157 p. Illust. 26 cm. [Jap]*

• **Summary:** The author was born in 1907. Address: Japan.

1162. *Soybean Digest*. 1960. USDA research may put more U.S. soybeans in Japanese foods. Feb. p. 20-21.

• **Summary:** Photos show: (1) A.K. Smith, NRRL chemist, and Tokuji Watanabe, visiting Japanese scientist, examining a cake of tofu. (2) Watanabe wet-grinding soybeans to be used in making tofu.

In 1959 Japan imported an estimated 35 million bushels of U.S. soybeans, almost 10 times the quantity imported in 1950. "About half the soybeans used in Japan are eaten as traditional foods, most of which are made in processes that begin with whole soybeans... Recognizing that Japanese whole-bean processors use limited amounts of our soybeans, Dr. Smith recommended studies of U.S. beans in Japanese food processes. The work began at the Northern Utilization Research and Development Division [NRRL] in Peoria, Illinois. Research on miso was performed by Dr. Hesseltine, NRRL microbiologist, working with Kazuo Shibasaki, on leave from Tohoku University, Sendai, Japan. Research on tofu was conducted by Dr. Smith and A.M. Nash of Peoria, working with Tokuji Watanabe, on leave from the Japanese Ministry of Agriculture and Forestry.

"Japanese processors say our beans absorb water, cook, and ferment more unevenly than their own. They also object to foreign matter, split and broken beans, and other crop material in our beans and to the color and 'beany' flavor of products made from them... U.S. soybeans, introduced from the Orient, have for 25 years been bred for yield, oil content, pest resistance, and similar characteristics but not for food processes that begin with whole beans—about half the total use in Japan."

1163. *Cotton Gin and Oil Mill Press*. 1960. USDA research with Japanese foods shows promise for U.S. soybeans: May mean greater exports. 61(6):65. March 19.

• **Summary:** U.S. soybeans are not widely used in Japanese food processes that start with whole beans—even though total Japanese imports of U.S. soybeans in 1959 were estimated at 35 million bushels—almost ten times as many as imported in 1950. Recognizing this, Dr. A.K. Smith of the Agricultural Research Service, recommended studies of U.S. soybeans in Japanese food processes at the Northern Utilization Research and Development Division, Peoria, Illinois. About half of the soybean used in Japan are eaten as traditional foods, and the other half are crushed to make oil and meal. Most U.S. soybeans are crushed. About 20% of the soybeans are used to make miso.

Dr. Clifford Hesseltine and Dr. Kazuo Shibasaki developed a new miso process in which the soybeans are cracked into grits. A photo shows Dr. Tokuji Watanabe (on leave from Japan's Ministry of Agriculture) and A.M. Nash of the Northern Division as they work with typical Japanese equipment and study the process of making tofu from U.S. soybeans.

1164. Hayashi, Shizuka. 1960. Public relations seminar by JASI. *Soybean Digest*. March. p. 20.

• **Summary:** At this seminar JASI taught Japanese manufacturers of soybean [food] products how sales of these products can be much increased through the use of public relations, including marketing research. "This is particularly true of marketing new products." Previously, these very manufacturers have lacked interest in public relations because they "have been enjoying a reasonably profitable business under the funds allocation system, which has afforded them a sort of protection."

At JASI's first seminar on PR and marketing, held recently in Tokyo, about 40 companies and organizations from various parts of Japan participated. "There were two lectures. The first was by Professor Naoyoshi Horikawa on public relations and top management. The other, by T. Shimizu, was on sales promotion. Never in the history of the soybean industry [in Japan] has there been a gathering like this where the so-called 'big shots' of leading organizations sat side by side at the table."

A table shows estimated consumption of soybeans (S) and soybean meal (SM) during 1961 as planned by the Japanese government (tonnes = metric tons). The totals are 1,467 million tonnes of soybeans and 707,000 tonnes of soybean meal. Details: Oil processing: 928,000 S. Livestock feed: 303,000 SM. Tofu and fried tofu: 280,000 S + 20,000 SM. Shoyu: 29,000 S + 200,000 SM. Miso: 130,000 S + 50,000 SM. MSG: 73,000 SM. Other miscellaneous foods: 20,000 S + 40,000 SM. Frozen tofu: 40,000 S. Natto: 30,000 S. Other uses: 21,000 SM. Kinako: 10,000 S.

A large photo shows about 13 Japanese men seated at a long table at JASI's recent public relations seminar. The name and position of each man is given. They represented the following organizations: Miso Association. Tatsuno Shoyu. Shoyu Association. Frozen Tofu Association. Masuko Miso. Address: Managing Director, Japanese American Soybean Inst., Nikkatsu International Building, No. 1-Chome Yurakucho Chiyoda-Ku, Tokyo, Japan.

1165. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)*. 1960—. Serial/periodical. Shinshu Miso Kenkyusho, 469-6 Nakagosho, Nagano-shi 380, Japan. Vol. 1. March 1960 Annual. [Jap; eng]

• **Summary:** Initially titled *Reports of the Shinshu-Miso Research Institute*. It is now titled *Report of the Shinshu-Miso Research Institute*. It is published in March every year. A 1-year subscription sent by surface mail in 1989 cost \$8.00. Address: Nagano-shi, Japan. Phone: 0262-28-1221.

1166. Hayashi, Uichi. 1960. Nattô ni kansuru kenkyû. XI. [Studies on natto. XI. Manufacture of miso (soybean paste) utilizing natto]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 38:258-60. [7 ref. Jap; eng] Address: Osaka Municipal Hygienic Laboratory, Japan.

1167. McLendon, Winzola. 1960. He steers true culinary course now: Gourmet Marshall. *Washington Post*. July 28. p. C10.

• **Summary:** Vice Admiral William Marshall, who divides his time between New York City and Virginia, loves gourmet cooking. He went to cooking school in Yokohama, and today his favorite recipes have Oriental overtones. "He has learned the culinary value of a dash of soya or a bit of hoisin."

He gives several of his favorite recipes including: "Hoisin sauce, a venison marinade." This recipe for the marinade calls for "½ cup Hoisin sauce (comes from Hong Kong, may be purchased in any oriental specialty shop...),... 1 dash Soy Sauce." Mix all seven ingredients to make the marinade.

"Venison in hoisin sauce: Marinate venison in Hoisin sauce [mixture] for 48 hours, turning occasionally."

1168. Hayashi, Shizuka. 1960. Discuss problems of soybean usage. *Soybean Digest*. July. p. 26.

• **Summary:** Japanese "soy food manufacturers" were addressed by Charles Elkinton, U.S. agricultural attache. During fiscal year 1959 the total quantity of soybeans used by Japanese crushers and food manufacturers amounted to 1.2 million metric tons or 46.7 million bushels, up 12% over the previous year. Japan's total imports during fiscal 1959 were 1,073,477 metric tons of which 1,010,444 metric tons came from the USA.

The total amount of soybeans used by Japanese food manufacturers is as follows, in metric tons. Makers of tofu and frozen tofu used 340,000 tons in 1959/60 rising to 370,000 tons in 1960/61. Shoyu makers used 218,400 tons in 1959/60 rising to 220,537 tons in 1960/61. Miso makers used 186,400 tons in 1959/60 rising to 177,180 tons in 1960/61.

Oil processors crushed 768,870 metric tons or 28,218,000 bushels in 1958/59. A photo shows “Japanese soy food manufacturers,” seated on cushions on tatami mats at two long tables, as they are addressed by Charles Elkinton. Address: Managing Director, Japanese American Soybean Inst., Nikkatsu International Building No. 1, 1-Chome Yurakucho, Chiyoda-ku, Tokyo, Japan.

1169. Smith, Allan K.; Watanabe, Tokuji; Nash, Arlo M. 1960. Tofu from Japanese and United States soybeans. *Food Technology* 14(7):332-36. July. [8 ref]

• **Summary:** Most of the U.S. soybeans exported to Japan are processed for oil and meal that are used for making food products. A survey conducted in 1957 in Japan by A.K. Smith (“Use of U.S. soybeans in Japan,” published April 1958) indicated that at least 25 million bushels of whole soybeans were used in making traditional Japanese foods such as miso, tofu, and natto, and that the Japanese wished to use more.

This paper describes pilot plant investigations comparing U.S. and Japanese soybean varieties to determine which U.S. varieties make the best tofu. Lee and Jackson varieties appeared to make tofu equal in yield, flavor, texture, and color to Japanese soybeans. “When such varieties are known to U.S. exporters and Japanese importers, more soybeans may be exported to Japan ‘identity preserved’ at some increase in cost over the U.S. No. 2 yellow beans” (p. 332-33).

Note: This is the earliest document seen (July 2001) that uses the term “identity preserved” to refer to soybeans. Address: 1. NRRL, Peoria, Illinois; 2. Food Research Inst., Ministry of Agriculture and Forestry, Tokyo, Japan.

1170. *House Beautiful*. 1960. Japan. Aug. Entire issue. *

• **Summary:** This entire issue of *House Beautiful* was devoted to Japan. The editors found Japanese cuisine to be the best of the 29 countries they had visited. Concerning miso they write: “Some ingredients basic to their cuisine we literally have no counterpart for: such a one is miso, a paste made from soy beans that may be sweet or salty or red or white, and can make a dressing for green vegetables, a marinade for meats, or the filling body of a soup. All delicious!”

1171. Hayashi, Shizuka. 1960. The Japanese American Soybean Institute: We can supply the Japanese market with

another 26 million bushels of soybeans if we seriously desire it. *Soybean Digest*. Sept. p. 31-32, 34.

• **Summary:** Contents: Introduction. Severe criticism (of U.S. soybeans by soybean users in Japan, and work to overcome this bad impression). Next on the consumption and import of soybeans. Now about the future outlook. Possibility of cutting down cost of oil prices. Price of soybean oil can be reduced. Soybean meal as a mixed feed has a big potential market. Soy flour expected to increase.

Before World War II “the soybean requirements of Japan were taken care of mostly by soybeans from Manchuria and China. Soybean oil and low-quality soybean meal were imported into Japan from Manchuria for use mostly as fertilizer.” Whole soybeans were used for make shoyu and miso, and for crushing.

“The Japanese soybean industry has stepped into a new era since the war. The crushing industry has been shifted from Manchuria to Japan and it has developed quickly to the present important and prosperous stage. With expanded crushing capacity, the need for soybeans has increased and the major part of the requirements has been supplied by soybeans from the United States, with only a limited quantity from China.”

“The break in trade between China and Japan since 1957 has given a chance for U.S. soybeans” to overcome their bad image in Japan.

“Consumption of various soy foods has shown substantial increase” and so have total soybeans imports into Japan, and the U.S. percentage share of total imports. Table show: (1) Consumption of soybeans and oils in Japan (metric tons), annually from 1955-56 to 1960-61, for tofu and frozen tofu (increased from 319,000 to 370,000), miscellaneous (increased from 167,000 to 214,000), shoyu (increased from 248,000 to 272,000), oil mills (increased from 505,000 to 760,000), and per capita daily (increased from 7.52 gm to 10.80 gm). (2) Imports of soybeans to Japan (metric tons) annually from 1955-56 to 1959-60. In 1955-56: Total 767,099. From USA 571,612. U.S. share of total 74.5%. In 1959-60: Total 1,073,477. From USA 1,010,444. U.S. share of total 94.1%.

“Soybeans have now become the largest item volumewise of all U.S. agricultural products imported into Japan.” They now top cotton, which had been the largest. Of all U.S. imports to Japan, soybeans are the second largest after scrap iron. This shows that the market development for U.S. soybeans in Japan has been successful—even under the present controlled currency allocation system which limits imports.

Four years ago the expression “P.R.” [public relations] was known by very few people and there was little investment in P.R. in Japan. Today almost everyone in Japan knows what P.R. means. As an example of this change among soybean groups, the Miso Association had no budget for P.R. activities 3 years ago. Today its budget for fiscal

year 1960 contains approximately 32 million yen or \$90,000 for this purpose. "The same can be said of shoyu, tofu, and other groups." The "Shoyu Association has decided to send a team of 7 top executives of the leading shoyu makes to the United States in October 1960 to study the soybean industry. They are doing this at their own expense but with the cooperation of American Soybean Association.

The total investment in the soybean market development program in Japan over the past 4 years by Foreign Agricultural Service has been \$425,000 and the contribution by various Japanese groups has been about \$257,000 in cash and services combined.

A 1958 survey showed that the 1,368 oil mills in Japan were operating at 36.8% of capacity. This low percentage is due to the fact that 1,210 oil mills (about 90% of the total) are small factories with a daily processing capacity averaging 10 metric tons; they produce oil mainly from domestic rapeseed at low efficiency.

"If the import of soybean becomes free under the "Automatic Allocation system it is obvious that soybean oil production will be concentrated in the larger oil mills (61 crushers) occupying 85% of the nation's total daily extraction capacity of 8,289 tons. This will bring down the price of edible oil for Japanese consumers. A table shows that 159,000 tons of oil are made in Japan from domestic materials as follows: Rapeseed oil 65%. Fish and whale oil 25%. Rice bran oil 6%. Hog grease 4%. Since Japan has little possibility of increasing oil production from domestic raw materials, it must rely on imports. The price of domestic rapeseed is supported by Japan's government.

Another table shows the rapid growth in production of "concentrated feed" in response to the government's policy to encourage livestock production and the dairy industry. In 1955 it was 509,279 metric tons, rising to 1,310,098 tons in 1958, with 2,000,000 projected for 1960. The percentage of soybean meal used in mixed feeds has been about 4.5% because of the priority given to miso, shoyu and other food industries. However the Livestock Bureau has been requesting an increase in the import of soybeans for feed. Hayashi ends by estimating potential import growth of 700,000 metric tons or 26 million bushels, and by urging U.S. soybean growers to seize the opportunity. "If more funds for market development become available, first preference should be given to soybeans to meet the need for more oil, for more soy flour in bread, and for soybean meal as animal feed."

Photos show Shizuka Hayashi and Hiroshi Nakamura (delivering Hayashi's speech). Address: Managing Director, Japanese American Soybean Inst., Tokyo.

1172. Aljat, -. 1960. Food & utilization of food resources (Indonesia). In: Proceedings of the Fourth Pan Indian Ocean

Science Congress. Section G. Human Ecology. See p. 65-68. Held 14-24 Nov. 1960 at Karachi, Pakistan.

• **Summary:** Gives detailed instructions for making the following soybean products: tempeh (tempe, soya-cake, moulded), tofu (tahu, soya curd, coagulated with gypsum/sakow powder), miso (taotjo), and sweet Indonesian soy sauce (Ketjap, made with black soybeans). Also describes how to make onchom (ontjom) from peanuts, plus krupuk, and lempers. Table 1 compares the nutritional composition of powdered Saridele and cow's milk. Table 2 compares the amino acid composition of various mixtures containing soy.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term "soya curd" or the word "tahu" to refer to tofu. Address: Nutritional Inst. Labs., Djakarta, Indonesia.

1173. Prawiranegara, Dradjat; Ravi, Ihsan el. 1960. Food & utilization of natural food resources (Indonesia). In: Proceedings of the Fourth Pan Indian Ocean Science Congress. Section G. Human Ecology. See p. 55-63. Held 14-24 Nov. 1960 at Karachi, Pakistan.

• **Summary:** This is a relatively early publication by an Indonesian author on soyfoods, especially tempeh. The first author's name is incorrectly listed on the document as simply Dradjat or Dradjet. "Protein rich food. Soya beans: In order to increase the protein consumption of the people more soya bean should be made available, and soya products should be popularized and manufactured on large scale." After praising the nutritional properties of soybeans, the authors continue: "In order to render soya protein utilizable, both destruction of the cell walls and heat treatment are necessary. Crushing the beans such as in the manufacture of soya milk and 'tahu' or the action of fungi which partly digest and break the cell wall such as the case with 'tempeh' are means of improving the nutritional value of soya. All these foods are heat treated both during the manufacture and on preparation for the table, and the enzyme inhibitors are destroyed. Tempeh, tahu [tofu], tautjo [Indonesian-style miso], ontjom, soya milk, etc. [are excellent foods. A meal] which gives the maximum biological value contains soya proteins and rice protein in the ratio of about 2.3. Therefore an adult who receives little or no animal food should get 15 or 20 gm soya protein with his rice. A medium size family should get 75 to 100 gm of soya protein. Unfortunately, soya preparations such as tempeh and tahu are comparatively expensive. For example 100 gm of soya protein in the form of tempeh costs about 5 rupiahs. This is why it is necessary to find a simple way of using unprocessed soya beans. The preparations of 'fried soya' is one such way. Fried soya is simply prepared as follows. Soya is soaked overnight in water with a little salt added, ground to a paste. The stuff is pleasant smelling, and tastes good. It can be used in many different ways, both in adults and in children's food. It costs little, compared to

tempeh or tahu, and its nutritional value is high, specially when mixed with rice or corn. It is certain that the introduction of fried soya to the Indonesian family's daily diet will appreciably improve the nutritional status of the people. Three times as much soya protein can be consumed for the price paid for tempeh or tahu. Recent work on tempeh (which is soya bean product subjected to the action of certain fungus) have shown that the product is of a higher nutritional quality than heat-treated soya bean. Apparently the fungus growth on the soya favourably alters the biological value of its protein. More work is needed on the subject in order to find out the reason for such improvement. It was suggested that tempeh should be investigated as infant food. (P. Gyorgy's recent report to W.H.O. Protein Advisory Group).

Note: This is the earliest English-language document seen (March, 2009) uses the word "tautjo" to refer to Indonesian-style miso.

"'Saridele' is an imitation milk of vegetable origin. It is made from soya sesame combination. It is available as spray-dried powder. The composition is similar to cow milk powder. Animal trials have shown that the protein of the product is somewhat inferior to cow milk, but the biological value improves considerably when mixed with rice. Trials with infants showed that Saridele is well tolerated by older infants and it is a valuable addition to the diet after the age of 6 months. In case of emergency, when no cow milk is available, saridele may be used as food for infants over 4 months of age (will be published by Children Dep. Medical School, Univ. Indonesia)." A table lists gives the nutritional composition of soybeans, tempeh, tofu, fish flour, fresh cassava leaf, and dry cassava leaf. Address: 1. M.D., M.P.H., Director, National Nutrition Inst., Dep. of Health, Djakarta; 2. FAO Food Chemist.

1174. USDA ARS Northern Utilization Research and Development Division, Peoria, Illinois. 1960. Definitions of foreign foods of current interest (Brochure). Peoria, Illinois. 4 p. 28 cm.

• **Summary:** The first section, titled "Japanese foods from soybeans" (p. 1-2) includes: Aburage, frozen tofu, Hamanatto, kinako, koji, kori tofu, miso, monosodium glutamate (a seasoning compound first isolated from soy sauce), nama-age, natto, satsumage, soybean milk or tonyu, soy sauce or shoyu, tofu, yaki-dofu, yuba.

The second section, titled "Indonesian fermented foods" (p. 3-4) includes: Arak, ketjap (soy sauce made with black soybeans), ontjom, ragi, sajur asin, tapé ketan (fermented glutinous rice), tapé katella (fermented arrowroot), tempeh (or témpé or témpé kedelé), tuwak. Address: Peoria, Illinois.

1175. Choe, C.E.; Song, P.S. 1960. [On the biogenesis of riboflavin in soybean fermentation products]. *Kwayon*

Huibo (Bulletin of the Scientific Research Institute, Korea) 5(1):29-35. [Kor]*

1176. Choe, C.E.; Song, P.S. 1960. [Fermented soybeans of Korea]. *Kwayon Huibo (Bulletin of the Scientific Research Institute, Korea)* 5(1):29. [Kor]*

• **Summary:** Mentions *meju*—fermented soybeans of Korea.

1177. **Product Name:** Butterfish Misozuke.

Manufacturer's Name: Hawaiian Miso & Soy Co.

Manufacturer's Address: 1714 Mary St., Honolulu, Oahu, HI 96819. Phone: 808-841-7354.

Date of Introduction: 1960.

New Product—Documentation: Oda. 1983. *Hawaii Herald*. Oct. 7. p. 8, 17. The company produces about 90 tons/year of the miso marinated fish.

1178. Chiang, T'ien-chiang. 1960. Ta tou ying yang yu chia kung [Soybeans and soyfoods?]. China. 183 p. [10+ ref. Chi]

Address: China.

1179. Doi, Tadao. ed. 1960. *Nippo Jisho: Vocabulario da lingua de Iapam [Vocabulary of the language of Japan]*. Tokyo: Iwanami Shoten. 822 p. 22 cm. [Por; Jap]

• **Summary:** This is facsimile edition of the original 1603 edition, the second earliest dictionary of the Japanese language compiled by Europeans.

Soy-related terms in this dictionary include: Abura ague [Abura-agé]. Aburidôfu. Amazaq [Amazake]. Cabe [Tofu]. Côji [Koji]. Daizzu [Daizu]. Dengacu [Dengaku]. Fanben [Hanben]. Icchô. Mame. Graos, ou feijoes de Iapao [Soybeans]. Miso [made with rice]. Misocoxi [Misokoshi, a miso strainer]. Misoya [A shop which sells miso]. Misoyaqijiru [Miso-yaki-jiru, a soup made with grilled miso and diced tofu]. Misôzzu [probably a soup seasoned with miso resembling Zosui]. Nattô. Nattôjiru. Tofu. Tofuya [A shop which makes and sells tofu]. Tamari. Vdondôfu [Udon-dôfu]. Xôyu [Shoyu, or soy sauce]. Yudôfu. Address: Nagasaki College of Japan.

1180. Joya, Mock. 1960. *Things Japanese*. Tokyo: Tokyo News Service, Ltd. 782 + xlv p. Index. 21 cm.

• **Summary:** In Chapter 7, titled "Food, 'Sake' and Tobacco" (p. 275-331) the following may be of interest: Asakusa-nori (includes shoyu), azuki (incl. soybeans, tofu, miso, shoyu, natto), bento and kashi, cattle, chameshi, chawan-mushi ("somewhat similar to Western custards." Make katsuobushi (shaved dried bonito) soup stock, cool, pour into individual *chawan-mushi* bowls (each has a cover). Mix in an equal quantity of beaten eggs. Add additional flavoring ingredients, cover, and steam until set. "One of the few Japanese dishes that resemble Western dishes in taste").

Chazuke, cooking, daikon (incl. miso), drinking cups and customs, eel-eating day (eels are broiled, steamed, then put in a specially prepared shoyu and broiled again), ginnan (ginkgo nuts), gobo (burdock, incl. miso soup and shoyu), gohan (boiled rice), kabayaki (eel), kamaboko, kashi (confections and sugar), katsuo-bushi (incl. shoyu), kawarasebei (incl. miso), konnyaku, manju, matsutake mushrooms, menrui (noodles, incl. soba, udon, shoyu), mikan (mandarin oranges), misoshiru (miso soup, incl. tofu, shoyu, tekka-miso, tai-miso, yuzu-miso, wakame), mochi, mochi-tsuki (pounding), myoga (*Zingiber mioga*), oden (with tofu, miso, and shoyu), one-sided fish, red rice (*sekihan*, made with azuki = red beans), ringo (apples), sakana (fish, incl. shoyu and tofu), sake drinking, sake eating, sashimi (incl. shoyu and mirin), satsuma-imo, seaweeds (sea vegetables), shinja (new tea), shoyu (Japanese-style soy sauce; per capita consumption is nearly 4 gallons a year), snake eaters, soba (incl. shoyu), souvenir cakes, sugar, suimono (clear soup, incl. miso and shoyu), sukiyaki (incl. tofu and shoyu), sushi (incl. Inari-zushi made with fried tofu), sweets in season, tea varieties, tea water, tempura (incl. sesame oil and shoyu), tobacco tradition, tofu (incl. bitter/nigari, yaki-dofu, aburage, ganmodoki, Koyadofu, fried tofu, hiyayakko, sukiyaki, dengaku, miso, misoshiru, shoyu), tokoroten (kanten, tengusa), tsukemono (pickles, incl. miso), umeboshi, wasabi (incl. shoyu), yasai (vegetables), yokan, and yonaki-soba. Note: Different types of yokan (yōkan, a paste made of azuki beans and sugar) include: mizu-yokan (soft azuki-bean jelly) and mushi-yokan (steamed yokan). Yokan-iro is a liver or rusty color.

Other subjects related to soy: Home cures (p. 66-67, for burns, apply the white of an egg or shoyu). Setsubun (p. 119, incl. mame-maki or throwing roasted soybeans). Brother mountains (p. 192, the most loved one, Fudo-iwa, was fed azuki or red beans but the unloved Gongen-yama was fed soya beans). Fox messengers (p. 207-08, aburage or fried tofu). Kuyo (p. 373-74, incl. hari-kuyo or mass for broken needles—but tofu is not mentioned). Azuki (p. 276-77). Red rice (*sekihan*, p. 303). Lunar calendar (p. 400, setsubun and bean throwing). Bamboo (p. 410, incl. bamboo shoots served with shoyu). Hi-no-kami (p. 474, incl. amazake). Sacred rice (p. 504, incl. setsubun and throwing roasted soybeans). Shoulder-chipped Jizo (p. 517, concerns the stone statue of Jozo at the Kiunji Temple, Tozaki-machi, Bunkyo-ku, Tokyo, and foxes and a tofu shop). Inari-san (p. 616-17, Inari-sushi and aburage). Address: Japan.

1181. Korea: Its land, people, and culture of all ages. 1960. Seoul, Korea: Hakwon-Sa. 718 p. See p. 114, 602. Illust. (part color). No index. 26 cm.

• **Summary:** This large book contains a comprehensive view of Korean history and culture, with each chapter written by

one or more Korean specialists and illustrated by hundreds of photos. Unfortunately, the book has no index.

A photo on an unnumbered page inserted 2 pages after p. 112, titled “Jars for food storage” shows a Korean woman with several of these jars. The caption reads: “Every home prepares such various earthenware jars for storing food such as soy-bean-sauce, doenjang (soy-bean-paste), kochujang (pepper sauce) and kimchi.

Note: This is the earliest English-language document seen (March 2009) that uses the word “doenjang” to refer to Korean-style soybean jang (miso).

In the section on “Agricultural products,” table 3 (p. 246), titled “Food supply and demand schedule for Fiscal 1959 throughout South Korea” gives the requirement for “Soybean sauce and cakes” as 768,000 *sok*. Under supplies, the “Bean crops of 1958, estimate, were 1,291,000 *sok*. An Appendix, (p. 714) shows that 1 *sok* (a unit of capacity) = 180.391 liters or 47.600 gallons.

The section titled “Food and dwelling,” under “The main and side dishes states (p. 602): “Other essential foods are bean paste and soybean sauce, both of which are used to make soup and flavor other side dishes of all kinds. The bean paste and the soybean sauce are as a rule prepared at each home. The beans are first cooked, then mashed and rolled into balls about 5 inches in diameter. The balls are then fermented for several days, finally to be immersed in salt water, to turn the salt water into soybean sauce. The residue balls of the fermented beans, on the other hand, become the soybean paste. Being for the most part prepared at home, rather than mass produced in factories on a commercial basis, the soybean sauce and bean paste of each house taste different. Since the two home-made foods find their way into almost all kinds of side-dishes, to be mixed with meat, seafoods, and vegetables, the soybean sauce and [soy] bean paste have a decisive say in the taste of all the foods prepared at each particular home.”

Chapter 17, “Literature: An outline of Korean literature, its heritage,” includes a discussion of many early works.

An excellent “Chronology chart of Korean history compared with world history” appears on pages 715-18. At the rear is a color fold-out map of Korea.

1182. Ma, Nancy Chih. 1960. Mrs. Ma’s Chinese cookbook. Rutland, Vermont; Tokyo, Japan: Charles E. Tuttle, Publishers. 178 p. Illust. 27 cm. [1 ref]

• **Summary:** About the author: Because she was born in a Manchurian banker’s family, she never had the opportunity to prepare even a single Chinese dish while in China. Only after her arrival in Japan did she become enthusiastic about learning how to prepare Chinese dishes. She did most of her study in Hong Kong. In 1957 her first Chinese cookbook, *Chugoku no Katei Ryori* [Chinese Home Cookery] was published in Japan by Fujin no Tomo. This book is a translation of the Japanese edition.

The section “Sizes and amounts of ingredients” (p. 15-16) mentions “Bean curd,” which is called *tou fu* in Chinese and *tôfu* in Japanese.

The section “Spices and flavourings” (p. 17-18) mentions: “Bean paste (*mien chiang* in Chinese, *miso* in Japanese): Thick, syrupy paste made from soy beans and used for added flavor in such dishes as Pancake Rolls.” Monosodium glutamate (and its many names). Soy sauce.

Recipes include: Braised salmon with soy beans (soak 1 cup dry soy beans overnight, p. 49). Fish with bean curd (with 2 cakes bean curd, cut into 1-inch squares, p. 49). Chilled bean curd with shrimp (p. 56). Braised shrimp with bean curd (p. 58). Bean curd with ground beef and chili peppers (and soy sauce, p. 76). Bean curd with sliced pork and chili pepper sauce (and bean paste {*mien chiang*}, p. 85). Molded steamed bean curd (p. 90). Pressed bean curd with assorted meat (p. 112-13). Braised bean curd (p. 116). Bean curd paper sheet rolls (with 3 rolls dried bean curd {*tou fu pei chüan*} in Chinese, dried yuba in Japanese, p. 118). Spiced soy beans (with 3 cups green soy beans, unshelled [edamamé], p. 126). Pancake rolls (with bean paste {*mien chiang* in Chinese, *miso* in Japanese}, p. 133. Note: These rolls are used in many different recipes).

The section titled “Foodstuffs” (p. 171-72) is a glossary of major Chinese ingredients, with the name of each given first in English (they are arranged in alphabetical order), then in Mandarin (Wade-Giles), then in Chinese characters. These foods include: Bean curd, *Tou fu*. Bean paste, sweet, *Tou sa* (“bean + sand.” Note: This appears to be azuki bean paste). Oil, soybean, *Tou yu*. Soy bean paste *Chiang*. Soy beans, green *Mou tou* [*Mao tou*]. Soy beans, dried *Ta tou*. Soy sauce *Chiang yu*. Address: [Japan].

1183. Ohsawa, George. 1960. *Zen macrobiotics*. New York, NY: Ohsawa Foundation. 103 p. Undated.

• **Summary:** The book begins: “Two ways to happiness through health. Happiness is the goal of everyone in the world. But what is happiness?... In the Orient happiness was defined by sages some thousands of years ago as consisting of five factors, as follows: 1. The first fundamental factor of happiness is joyfulness, an amusing, interesting, brilliant and healthy longevity. 2. The second, not to be worried about money. 3. The third, instinctive capacity to avoid accidents and difficulties that would cause premature death. 4. A loving realization of the order of the infinite universe at all levels. 5. Not to become the first as you will become the last. But try to become the last so that you will become the first forever.

“... School education is completely unnecessary, and even detested. All great men are autonomous and self-made...”

“With the conception of Principal Food and that of secondary food clearly distinguished, people of the Orient could live a happy, free and peaceful life from the beginning

up to the importation of the brilliant Occidental civilization, more or less violent, with its industrial and scientific instruments... The Principal Food should occupy at least 60% of your eating.”

There are now Ohsawa Foundations in New York, Paris, Brussels, Tokyo. All recipes in this book are numbered. Soy-related recipes include: 117. Boiled soy beans with miso (the soy beans are first roasted until they pop). 118. Boiled beans (“Boil soy beans until tender. Seasoned with soy sauce and salt. Boil until liquid is gone. Prepare black beans in the same way.” Note 1. Later writings by Ohsawa show that by “black beans” he meant black soy beans, *Kuro mame* in Japanese). 119. Gomoku beans (boiled soy beans with vegetables). 120. Gozu soup (Gôjiru; ground soaked soybeans with vegetables). 121 and 122. “Aduki” beans. 159. Hiziji with age (seasoned with “soyu” [sic, shoyu]). 160. Hiziki and soybean (seasoned with syoyu [shoyu]).

Miso and syoyu preparation. Both miso and syoyu should be of traditional preparation. 201. Sauce miso (miso-tahini sauce). 202. Miso cream. 203. “Muso” (miso and tahini with minced orange peel). 204. “Miso” soup. 205. Carrot and onion au “miso.” 206. Vegetable au miso. 207. “Oden” au miso. 208. Buckwheat “dango” au “miso.” 209. “Miso-ae.” 210. “Tekka” no. 1 (miso with minced yang vegetables—lotus root, burdock root, ginger—fried in sesame oil until very dry. Good for all yin diseases).

Syoyu. Recipes 212-221 are seasoned with “syoyu” (shoyu, traditional fermented soy sauce). “Use the traditional syoyu in all cooking (vegetables and fish). Syoyu diluted with a little water is very good for ‘Sasimi’ [sashimi] and fried oyster, ‘Tempura’, fish ‘Sukiyaki’, ‘Tohu’ ([tofu] vegetable cheese of soya beans), etc.”

803. “‘Tohu’ plaster. Squeeze ‘tohu’ (white soya bean cheese) add 10% of flour; stretch this directly on the front or any part painful with inflammation. All pain or inflammation will go away soon.” Note 2. This book does not use tofu in any recipes, probably because Ohsawa considered it too yin. However Ohsawa was the one person most responsible for introducing the word “tofu” to popular American culture; his later writings and especially his students and admirers spread the word to the four corners of the United States.

Note 3. This is the earliest macrobiotic document seen that mentions tofu.

Note 4. This is the earliest English-language document seen (July 2000) that mentions “Tekka” (spelled that way, which is now the proper romanization) or that gives a recipe for making it.

Note 5. This is the earliest English-language document seen (March 2006) that uses the word “aduki” beans to refer to azuki beans. This spelling was subsequently widely used, but only in macrobiotic publications.

Also discusses: In the section on “Egyptian beans” (p. 30): Pois “chiche” (chickpeas, basic preparation by boiling).

- “Beignet” pois chiche (deep-fried balls of mashed chickpeas mixed with flour). Pois chiche croquette (chickpea croquettes). Address: USA.
1184. Shibasaki, K.; Hesseltine, C.W. 1960. Miso-I. Preparation of soybeans for fermentation. *Bacteriological Proceedings* 60:49-50.
 • **Summary:** This is the first of Dr. Hesseltine’s many important scientific research articles on miso. Address: NRRL, Peoria, Illinois.
1185. Shufu-no-tomo-sha. 1960. Miso: Seiyô, chûka-fu ryôri [Miso: Western and Chinese style recipes]. Tokyo: Zenkoku Miso Kogyo-kai. 52 p. 21 cm. [Jap]
 • **Summary:** Contains many recipes plus black-and-white photos, plus 4 color photos.
1186. Umeda, Isao; Ebine, H.; et al. 1960. Hakkô shokuhin [Fermented foods]. Tokyo: Kyoritsu Shuppan Co., Ltd. Microbiological Industry Series. [Jap]*
1187. Smith, Allan K.; Hesseltine, C.W.; Shibasaki, K. Assignors to the USA as represented by the Secretary of Agriculture. 1961. Preparation of miso. *U.S. Patent* 2,967,108. Jan. 3. 3 p. Application filed 24 July 1959. [1 ref]
 Address: NRRL, Peoria, Illinois.
1188. Ebine, Hideo. 1961. [Determination of crude fat in miso (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 154. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Miso Gijutsu (Miso Technology)*. No. 51. p. 1 (1958). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1189. Ebine, Hideo; Kakeya, Masae; Koiso, Kenji; Ito, Hiroshi. 1961. [Sedimentation rate of miso soup (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 155. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Miso Gijutsu (Miso Technology)*. No. 57. p. 1 (1958). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1190. Ebine, Hideo; Sugiura, Nobuko. 1961. [White granule in miso (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 156. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Miso Gijutsu (Miso Technology)*. No. 62. p. 1 (1959). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1191. Ebine, Hideo; Oguri, Yuichi. 1961. [Trial of manufacturing dehydrated miso by vacuum drying (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 157. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Miso Gijutsu (Miso Technology)*. No. 64. p. 1 (1959). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1192. Ebine, Hideo. 1961. [White scale-like substance in miso packed in plastic bags (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 158. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Miso Gijutsu (Miso Technology)*. No. 64. p. 4 (1959). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1193. Kamada, Hidemoto; Sakurai, Yoshito. 1961. Daizu seihin no chakushoku ni kansuru kenkyû. V. [Browning reaction of soybean products. V. Relationship between color and 2,6-dichlorophenol indophenol reducing substances in miso and shoyu (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 162. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Nosan Kako Gijutsu Kenkyu Kaishi (J. for the Utilization of Agricultural Products)* 7(3):105+ (1960). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1194. Kamada, Hidemoto; Sakurai, Yoshito. 1961. Daizu seihin no chakushoku ni kansuru kenkyû. VI. [Browning reaction of soybean products. VI. Hydrolysis of soybean water-insoluble carbohydrate by Taka-diaxase (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 163. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Nosan Kako Gijutsu Kenkyu Kaishi (J. for the Utilization of Agricultural Products)* 7(3):111+ (1960). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1195. Kamada, Hidemoto; Sakurai, Yoshito. 1961. Daizu seihin no chakushoku ni kansuru kenkyû. VII. [Browning reaction of soybean products. VII. Effects of aluminum on the color formation of miso (Abstract)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 15. p. 164. Feb. [1 ref. Jap]
 • **Summary:** Reprinted from *Nosan Kako Gijutsu Kenkyu Kaishi (J. for the Utilization of Agricultural Products)* 7(3):114+ (1960). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1196. Andreas, Dwayne O. 1961. More jobs, more earnings, better buys and more revenue. *Chemurgic Digest*. Feb/March. p. 12.
 Address: President, Chemurgic Council.

1197. Diser, Gleason M. comp. 1961. Glossary of soybean terms. *Soybean Blue Book*. p. 61-64.

• **Summary:** This is the first glossary with this title in the *Soybean Blue Book*. However in the first *Blue Book* (1947, p. 17-19) there was a somewhat similar section titled “Terminology: Definitions and product descriptions for the soybean industry.”

The following terms are defined in this glossary:

Soybean(s), soybean processor, soybean processing (solvent extraction, mechanical pressing, hydraulic pressing), soybean oil, crude soybean oil, edible crude soybean oil, refined soybean oil, edible refined soybean oil, hydrogenated soybean oil, degummed soybean oil, winterized oil, technical grade refined soybean oil, soybean fatty acids, soybean soapstock, acidulated soybean soapstock, soybean lecithin, break material, sludge.

Soybean products: Ground soybeans, soybean hay meal, soybean flakes, 44% protein soybean oil meal, dehulled soybean flakes, 50% protein solvent extracted soybean oil meal, soybean proteins, soy flour, soy grits, soybean oil meal, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, protein, isolated protein, toasting. Oriental soy foods: Soy sauce (shoyu), soy milk, miso, frozen tofu, aburaage, kinako, namaage, ganmodoki, tempeh, natto, yuba, moyashi (soybean sprouts). Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

1198. Shurpalekar, S.R.; Chandrasekhara, M.R.; Swaminathan, M.; Subrahmanyam, V. 1961. Chemical composition and nutritive value of soyabean and soyabean products. *Food Science (Mysore, India)* 10(3):52-64. March. Published in 1961 as a 32-page book by the Soybean Council of America in Hamburg, Germany. [178 ref]

• **Summary:** Contents: Introduction. Chemical composition and nutritive value. Soyabean oil. Carbohydrate in soyabean. Minerals in soyabean. Vitamins in soyabean. Factors affecting nutritive value: Trypsin and growth inhibitors, heat processing, other factors. Digestibility and biological value: Animal experiments, supplementation with sulphur amino acids, human feeding experiments. Supplementary value to other food proteins. Processed foods from soyabean: Soyabean milk, dried milk substitutes from soyabean, malt foods containing soyabean, soyabean flour, multipurpose food (fortified soyaflour), dehydrated soup mixture, balanced food, soyabean protein isolate. Fermented soyabean products: Soy sauce, tofu or soyabean curd, miso, natto, tempeh. Conclusion.

Note 1. This is the earliest document seen (Jan. 2001) from India that mentions tempeh.

Note 2. This is the earliest English-language document seen (Aug. 2003) that contains the term “soyabean protein” (or “soyabean proteins”).

Note 3. This is the earliest English-language document seen (Aug. 2003) that contains the term “soyabean protein isolate” (or “soyabean protein isolates”). Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1199. Kawakishi, Shunro; Hirano, Susumu; Yoshii, Hisao. 1961. Mamemiso, tamari jōzō ni okeru yūki-san. I. Miso-dama kōji-chū no yūki-san [Organic acids formed in the process of brewing soybean miso and tamari. I. Organic acids of soybean koji (miso-dama)]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 35(4):347-50. April. [11 ref. Jap] Address: Aichi-ken Shokuhin Kogyo Shikenjo.

1200. Yoshii, Hisao; Kawakishi, Shunro; Hirano, Susumu. 1961. Mamemiso, tamari jōzō ni okeru yūki-san. II. Mamemiso jōzō-chū no yūki-san no ugoki [Organic acids formed in the process of brewing soybean miso and tamari. II. Changes in amounts of organic acids during miso brewing]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 35(4):351-54. April. [5 ref. Jap] Address: Aichi-ken Shokuhin Kogyo Shikenjo (Aichi Inst. of Food Technology).

1201. Smith, Allan K.; Wolf, Walter J. 1961. Food uses and properties of soybean protein. I. Food uses. *Food Technology* 15(5):4-6, 8, 10. May. [34 ref]

• **Summary:** Contents: Summary. Introduction. Commercial soybean protein fractions. Soybean foods: Soybean varieties (garden varieties vs. field varieties, main differences between them, U.S. soybean breeding program). Trends in protein requirements (worldwide protein shortage). Soybeans and fractions used in food: Whole soybeans, defatted soybean meal, isolated proteins, protein concentrate (called “protein concentrate 70” in the summary), Gelsoy.

Whole soybeans may be baked or boiled, or used to make sprouts, fresh or dried tofu, vegetable milk (or “soybean milk”), yuba, and many fermented food products, including “miso or soy paste, natto, hamanatto, shoyu (soy sauce), tempeh, and some less important foods.”

“Protein concentrate: Extraction of dehulled and defatted meal with dilute acid (pH 4.5) removes soluble sugars, nonprotein nitrogen, and other low-molecular weight components and a small amount of protein. The flavors are also mostly removed in the extract or in drying. The dried concentrate contains about 70% protein unless soybeans containing above-average protein are used.

“This product, having a manufacturing cost between that of soy flour and isolated protein, has been introduced recently into the food industry. This protein concentrate is a combination of the acid-precipitated protein plus the residue normally obtained in isolating the acid-precipitated protein... A protein concentrate can also be made by

extraction of SOM [soybean oil meal] with about 70% ethanol at 50°C or higher. This type of product is finding its place in the food industry.”

Note: This is the earliest English-language document seen (Dec. 2005) that uses the term “protein concentrate 70” or the term “protein concentrate” to refer to a product containing 70% protein on a dry-weight basis. Address: NRRL, Peoria, Illinois.

1202. Hayashi, Shizuka. 1961. Soybeans in the nutrition of Japan. *Soybean Digest*. June. p. 31.

• **Summary:** “Japan, with a population of 95 million people on a land area smaller than that of the state of California, is confronted with the problem of how best to feed its population. With the population increasing at a rate of 1 million annually, the problem perhaps will become permanent. According to 1959 government statistics, the following amounts of soybeans (in tonnes or metric tons) were used to produce oil and soyfoods in Japan: Crushed for oil 840,583, tofu 318,150, shoyu (soysauce) 217,686, miso 173,933, frozen tofu 40,000, natto 35,000, kinako [roasted soy flour] 13,000.

Japan uses 420,000 tonnes of soybeans that are grown domestically and 1 million tonnes imported from the U.S. Of the 26.7 gm of fats and oils available to each Japanese daily, 7.6 gm (28%) is supplied by soybeans. Of the 67.7 gm of protein available to each Japanese daily, soybeans provide 10.6 gm (15.7%).

“Meat is not only scarce but the price is too high to meet the daily needs of average people. Annual per capita meat consumption in the United States is 237 pounds while in Japan it is only 2.3 pounds.” “The Japanese intake of fats and oils is less than 10 pounds per capita in comparison with about 50 pounds in western countries.”

“The Japanese live too much on carbohydrate foods. Rice eating must be minimized and more protein foods eaten. The obvious conclusion is the increased consumption of soybeans.”

Note: This is the earliest document seen (Dec. 2001) that contains industry or market statistics for natto by geographical region. Address: Managing Director, Japanese American Soybean Inst., Nikkatsu International Building., No. 1-chome Yurakucho, Chiyoda-ku, Tokyo, Japan.

1203. Namiki, Mitsuo; Okazawa, Y.; Matsuyama, A. 1961. Miso oyobi shōyu no gamma-sen shōsha. I. Miso no waki ni taisuru shōsha kōka [Gamma irradiation of miso and soy sauce. I. Radiation effects on “waki” (generation of gasses) of miso]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 35(6):528-33. June. [5 ref. Jap]

• **Summary:** Miso generates gasses during storage at high temperatures. This phenomenon called “Waki” is a disadvantage for commercial packaging. Irradiation reduces this gas generation. Address: 1-2. Inst. of Physical and

Chemical Research; 3. Dep. of Agricultural Chemistry, Faculty of Agriculture, Univ. of Tokyo.

1204. Okazawa, Yoshishige; Namiki, M.; Matsuyama, A. 1961. Miso oyobi shōyu no gamma-sen shōsha. II. Biseibutsu ni taisuru shōsha kōka [Gamma irradiation of miso and soy sauce. II. Radiation effects on microorganisms]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 35(6):533-40. June. [16 ref. Jap]

Address: 1-2. Inst. of Physical and Chemical Research; 3. Dep. of Agricultural Chemistry, Faculty of Agriculture, Univ. of Tokyo.

1205. Nakamura, Hiroshi. 1961. The Japanese soybean market. *Illinois Agricultural Economics* 1(2):7-13. July.

• **Summary:** Contents: Introduction. Soybeans in the Japanese diet. Patterns of soybean consumption. Changes in tastes and preferences. Preferences for types of soybeans. Supply of soybeans to Japanese market. Soybean production in Japan. Future of soybean consumption in Japan. Japanese government import policy.

Table 1 shows “Soybean supply and consumption in Japan, 1934-1936 average and 1950-1959.” Vertical columns show domestic production, imports, crushings, used as whole soybeans, and percent of imports from United States. By 1951, 95% of imports were coming from the USA.

Table 2 shows total and per capita consumption (in kg and lb) of miso, shoyu, and edible oils (all types) in Japan, 1934-1936 average and 1950-1959. In 1957, compared with the 1934-36 average, per capita consumption of miso is 19.62 lb (down 14.4%), shoyu is 30.20 lb (down 0.8%), and edible oils is 7.05 lb (up 350% from 1.98 lb).

“In Japan, soybeans are considered a food grain like rice and wheat and, in fact, serve as an important source of protein supply in the Japanese diet. Total annual consumption exceeds 1,500,000 metric tons; but as production in Japan is only 400,000 tons, more than a million tons of soybeans are imported each year, mostly from the United States. Of all the agricultural exports of the United States to Japan, soybeans today occupy the most important position, amounting to nearly 100 million dollars per year.”

1206. Shibasaki, K.; Hesseltine, C.W. 1961. Miso-I. Preparation of soybeans for fermentation. *J. of Biochemical and Microbiological Technology and Engineering* 3(2):161-74. July. [3 ref]

Address: NRRL, Peoria, Illinois.

1207. Smith, Allan K. 1961. Oriental methods of using soybeans as food. With special attention to fermented products and notes on Oriental farming practices. *USDA*

Agricultural Research Service. ARS-71-17. 65 p. July. Illust. 27 cm.

• **Summary:** Contents: Part I: China. Introduction. Farming conditions in China. Oilseed production. Soy sauce in China. Sweet flour paste—Tien mien chang [chiang]. Soybean or vegetable milk (incl. Willis Miller and the Henningsen Produce Co. in Shanghai). Yuba. Soybean curd or tofu. Soybean cheese [fermented tofu]: Chee-fan (“cheese” + “small cube”), tsüe-fan (“drunken cheese”), hon-fan (“red cheese”). Fen-T’iao from mung beans. Fermented soybeans [soy nuggets]. Vinegar fermentation process.

Part II. China—Chinese Institutions. Henry Lester Institute (in Shanghai; Dr. Bernard Read). Academia Sinica (headquarters in Nanking). China Vegetable Oil Corporation (CVOG, Shanghai). The China Oils and Fat Industries Ltd. (Shanghai). National Bureau of Industrial Research. Catholic University (Fu Jen, at Peiping). Yen Ching University (Peiping). Agriculture Experiment Station (Peiping).

Part III: Japan. Introduction. Production of miso in Japan. Soy sauce in Japan. Trends in soy sauce production. Part IV: With Raymond E. Culbertson. Korea. Introduction. Breeding work. Soybean varieties. Climatic relations. Soils of Korea. Topography. Land use. Cultural practices. Marketing. Soybeans as foodstuff. Soy sauce. Acknowledgment.

Page 19 states: “The China National Government has taken an active interest in soybean milk for use by its army. Mr. Willis Miller, with offices and business connections with the Henningsen Produce Company in the Dollar Building (7th Floor) at 51 Canton Road, Shanghai, had just completed, at the time of my visit, the building of a soybean milk plant for the Chinese Government. The process is patterned after that of the International Nutritional Laboratories at Mt. Vernon, Ohio, for making a powdered or spray-dried milk. Mr. Miller also was supervising the installation of a vegetable canning plant for the same purpose.”

The text of this bulletin was previously published, serially, with slight revisions, in *Soybean Digest*, from Feb. to June 1949. Address: Northern Utilization Research and Development Div., Peoria, Illinois.

1208. Spilsbury, Calvin A. 1961. Japan’s oilseed and fats and oils industry. *USDA Foreign Agricultural Service. FAS M-120. iv + 52 p. Oct. Illust. 28 cm. [9 ref]*

• **Summary:** Contents: Introduction. Summary. The fats and oils industry: Total supply of fats and oils, edible fats and oils industries (oilseed crushing and refining industry, rice bran processing, margarine and shortening, oilseed food industries), industrial fats and oils (the soap industry, paint and protective coating industry). Domestic production of oilseeds and oil-bearing materials: Soybeans (farm income

and management, research), rapeseed, other oilseeds, rice bran, marine oils, including whale, animal fats. Foreign trade: Soybeans, other oilseeds, marine oils, animal fats, oilcake and meal, trade controls. Demand and price: Price supports. Consumption. Marketing and market development: Marketing vegetable oils, marketing oilseeds (storage, inspection, soybeans, rapeseed), market development. Bibliography. No names of Asian crushers are given.

Japan’s margarine and shortening production in 1960 was 88,600 metric tons, nearly 4½ times that of 1950... Margarine production in 1960 was 43,000 tons. Shortening production was only 41,600 tons in 1960. The margarine and shortening industry in Japan consists of 26 manufacturers, but a large percent of plant capacity is found in only a few plants: 4 plants have one-third of the industry capacity, which is around 400 metric tons per 8-hour day... 67% of the oils used to make margarine and shortening in Japan are animal and marine oils, with whale oil being the most widely used (26% of the total) followed by tallow and lard (21%), then fish oil (20.0%). Palm oils comprise 19.0% of the total and vegetable oils 14.0%.

Concerning oilseed food industries (p. 17-20), in 1960 some 532,218 tonnes (metric tons) of soybeans were used directly as foods or manufactured into foods in Japan. Substantial amounts of peanuts and sesame seeds were also so used. “The Japanese American Soybean Institute in Tokyo is actively promoting U.S. soybeans for food uses and has promoted soybeans as the meat of the field because of the excellence of their amino acids.” Note: This is the earliest document seen containing the phrase “the meat of the field.” Notice that it refers to soybeans and was apparently coined by an American organization in Japan.

“More soybeans are used directly for food than are grown in Japan, and the cake and meal from an additional 420,000 tons of soybeans are now used each year. The main soybean foods are: Miso, shoyu, tofu, aburaage (fried tofu), frozen tofu, natto, kinako, monosodium glutamate (extract of fermented soybeans and rice used as a seasoning compound; a low-grade shoyu is a by-product), tonyu (soybean milk, cooked water-extract of soybeans, not widely produced in Japan at the present time).

Miso: There are about 3,200 to 3,800 miso plants in Japan, and a large amount of home-made miso is also produced. “About 117,600 tons of soybeans and 52,300 tons of defatted soybean meal (expeller cake is thought to be the best) are required by this industry. Miso consumption is estimated at 28.9 grams per capita per day.” Domestic Japanese soybeans, such as white hilum soybeans from Aomori are preferred to U.S. beans, which cook unevenly because of their hard seed coats.

Shoyu: There are about 5,000 producers; some have very large plants but many are small. Per capita consumption is about 3 gallons per year. This requires about

18,500 tonnes of soybeans and 155,000 tonnes of defatted soybean meal per year. A small amount of soybean oil (about 1,000 tonnes/year) is skimmed off the top of shoyu and used for a cutting oil. The cake that remains after pressing out the shoyu contains 4% salt, but it is an ideal hog feed as well as a fertilizer. Around 80,000 to 100,000 tonnes a year are produced. A taru (4½ gallons) of shoyu wholesales for about \$3.60. A large volume of soy sauce is now being exported to the USA.

Tofu: There are around 50,000 small tofu plants in Japan. Their demand for soybeans is large and increasing. In 1960 production of tofu and aburaage required 254,800 tonnes of soybeans and 20,000 tonnes of defatted soybean meal. More soybeans and meal are used to make tofu than any other food in Japan, followed by shoyu, then miso. About three-fifths of the soybeans used are imported. In 1960 production of frozen tofu required 27,100 tonnes of soybeans.

In 1960 about 22,800 tonnes of soybeans were required to make natto, 6,200 tonnes to make kinako, 64,800 tonnes of defatted soybean meal were required to make monosodium glutamate, and 10,000 tonnes of soybeans plus 30,000 tonnes of defatted meal were required to make other soybean food products [such as whole soybeans, soybean milk, etc.]. Address: USDA Fats and Oils Div.

1209. Tung, Ta-Cheng; Huang, P-C.; Li, H-C.; Chen, H-L. 1961. [Composition of foods used in Taiwan]. *J. of the Formosan Medical Assoc.* 60(11):973-1005. Nov. 28. [27 ref. Chi; eng]

• **Summary:** Gives the nutritional composition (food calories, moisture, protein, fat, carbohydrate, fiber, ash, calcium, phosphorus, iron, vitamin A, thiamine, riboflavin, niacin, and ascorbic acid) of 384 foods commonly used in Taiwan. In the section on "Legumes, seeds, and nuts," the following soy products are included: Black bean (hei tou, black soybean; 37.1% protein, 15.2% fat), miso, soy bean (huang tou), soy bean curd (toufu), soy bean curd cake (toufu kan), soy bean curd cake, spiced (wu-hsiang toufu kan), soy bean curd cake, strip, soy bean curd, clot (toupai, yuba), soy bean curd, fermented, soy bean curd, fried (yu toufu), soy bean curd, pickled (furu, hu-zu), soy bean, fermented (tou chi), soy bean milk (tou nai), soy bean extracted residue (okara). Address: 1-3. Dep. of Biochemistry, College of Medicine, National Taiwan Univ., Taipei, Taiwan, China; 4. Taiwan Provincial Hygienic Lab.

1210. Hesseltine, C.W.; Shibasaki, K. 1961. Miso. III. Pure culture fermentation with *Saccharomyces rouxii*. *Applied Microbiology* 9(6):515-18. Nov. [6 ref]
Address: 1. NRRL, Peoria, Illinois; 2. College of Agriculture, Tohoku Univ., Sendai, Japan.

1211. *Soybean Digest*. 1961. A.K. Smith of Peoria Lab on trip to Asia. Nov. p. 7.

• **Summary:** Dr. A.K. Smith, head of meal products investigations, oilseed crops laboratory, Northern Regional Research Laboratory (Peoria, Illinois), left Oct. 15 on a 2½ month trip to India, Japan, and Indonesia. "Dr. Smith will survey research laboratories in the countries to determine those that are qualified to do food research and development on soybeans, soybean products, and related agricultural products under the P.L. 480 program." In Japan, he will visit trade associations to encourage the use of U.S. soybeans in Japanese foods.

Research is needed in six areas: Use of soy flour to supplement bread and cereal products. Manufacture of soybean protein. Use of tempeh. Production and nutritional value of soy milk. Production of low-salt miso for feeding babies. Comparison of U.S. soybean varieties in commercial production of tofu. A portrait photo shows Smith.

1212. *Soybean Digest*. 1961. 4-H club girl wins with Japanese meal. Nov. p. 18.

• **Summary:** Joan Ruths, a 17-year-old 4-H club girl from Waterville, Minnesota, won a blue ribbon at the Minnesota State Fair for her demonstration titled "Entree Tofu Steak." She prepared and served a complete Japanese meal. Among the many dishes on her menu made from soybeans were miso soup, aburaage (deep-fried tofu), and soy milk. Joan closed her presentation by saying: "Soybeans for our nation's economy, food for millions, and peace for the world."

1213. Kobayashi, Kojin. 1961. Iida no miso shōyu shi [History of miso and shoyu in Iida City]. Iida: Shinano Kyodo Shuppansha. 120 p. [Jap]

1214. Sano, Tamotsu. 1961. Feeding studies with fermented soy products (natto and miso). *National Academy of Sciences, National Research Council, Publication No. 843*. p. 257-68. Progress in Meeting Protein Needs of Infants and Preschool Children. [31 ref]

• **Summary:** The author developed a natto powder, low-salt miso powder, and an autoclaved soybean powder for use in combatting infant malnutrition in underdeveloped countries. Since 1957 Dr György has been studying these soybean foods in collaboration with the author in hopes of increasing their use in infant diets. The natto powder had a higher content of essential amino acids than the soybean powder. Natto powder gave the best results in growth studies on rats, but the increase in body weight was not as great as when the rats were fed skim milk at the same protein level. The miso powder decomposed into a rancid state and thus was unsuccessful. Address: President, Tohoku Kosai Hospital, 10 Motoyagura-cho, Sendai, Japan.

1215. Shibasaki, K.; Hesseltine, C.W. 1961. Miso. II. Fermentation. *Developments in Industrial Microbiology* 2:205-14. [1 ref]

• **Summary:** “In a search for ways to increase the use of U.S. soybeans in traditional Japanese foods,” uses soy grits from specific soybean varieties to make Shinshu Miso and Sendai Miso. The varieties were Chippewa, Adams, Lincoln, Clark, Harosoy, Hawkeye, Hokkaido-Akita, Iwate, Miyagi, Nagano, Chinese. Address: 1. College of Agriculture, Tohoku Univ., Sendai, Japan; 2. NRRL, Peoria, Illinois.

1216. Shufu-no-tomo-sha. 1961. Ryôri hyakka [Encyclopedia of Japanese cookery]. Tokyo: K.K. Shufu-no-tomo-sha. 768 + 20 p. Illust. Index. 21 cm. [Jap] Address: Tokyo.

1217. *SoyaScan Notes*. 1961. Overview of total miso production in Japan (1934-36, 1952-61). Source: *Shokuhin Kanri Tôkei Nenpo* (Food Industry Statistics Annual Report). [1 ref]

• **Summary:** These statistics are from a bundle of documents found in the Kikkoman *kura* in Noda, Japan. Mark Fruin donated a photocopy of all the documents to Soyfoods Center. Statistics are given each year for miso, vinegar, sauce, tomato ketchup, monosodium glutamate, and mayonnaise (from 1952 -1961).

Miso production grew from 596,996 tonnes (metric tons) in 1934 to a peak of 600,750 tons in both 1935 and 1936. No statistics are given from 1937 to 1951, years of disaster for Japan, ending with defeat in World War II.

Starting again, production grew from 381,713 tonnes in 1952, to a peak of 530,078 in 1956, then decreased slowly to 482,357 tonnes in 1961.

1218. *SoyaScan Notes*. 1961. Overview of factory production of miso in Japan (1930-1961). [1 ref]

• **Summary:** These statistics are from a bundle of documents found in the Kikkoman *kura* in Noda, Japan. Mark Fruin donated a photocopy of all the documents to Soyfoods Center. Statistics are given each year for miso in 1,000 *kan*, where 1,000 *kan* = 3,750 kg. Farmhouse and home production are not included. Miso production grew from 157,196 in 1930 to a peak of 160,200 in both 1935 and 1936, then fell gradually to 150,221 in 1940, 128,60 in 1942, 140,226 in 1943, and 129,679 in 1944. Then, as Japan was clearly losing the war, it plunged to 77,495 in 1945, 69,887 in 1946, and an low of 50,264 in 1947. In the postwar years, as Japan began to recover, it increased to 94,468 in 1948, dropped to 66,510 in 1950, then began steady growth—101,790 in 1952, rising to a peak of 198,779 in 1956. Then it began to decrease slowly to 180,884 in 1961.

1219. Paddleford, Clementine. 1962. Japanese dishes making hit in U.S. *Los Angeles Times*. Feb. 8. p. C12.

• **Summary:** New York–Japanese foods are everywhere in neighborhood and specialty shops throughout America.” This week the writer sampled 50 Oriental delicacies. “The basic Japanese food exports remain with us always the king crab meat, the Mandarin orange, the white tuna fish. Old friends are also the seasonings, Japanese Shoyu sauce, rice wine vinegar, the ajinomoto which is the monosodium glutamate to enhance the natural food flavors of meat, poultry, fish and vegetables.” Also mirin, instant rice with seaweed, and *yuechizuke* which is “egg plant in soya bean paste” [miso].

Note: This is the earliest English-language document seen (March 2009) that uses the term “soya bean paste” to refer to miso.

“The Japanese soy sauce called shoyu is claimed more delicate than the Chinese version. Delicious for gravies and barbecue sauces.” Address: Herald Tribune News Service.

1220. *New York Times*. 1962. Japanese foods are available here. March 29. p. 26.

• **Summary:** Gives five Japanese recipes—most calling for monosodium glutamate. The recipe for “Bean soup” [miso soup] calls for “three tablespoons soy bean paste” [miso] and an unspecified number of “cubes of tofu (bean curd).”

1221. **Product Name:** Chico-San Soybean Puree (Barley Miso).

Manufacturer’s Name: Chico-San Inc. (Importer). Made in Japan.

Manufacturer’s Address: Chico, California.

Date of Introduction: 1962. March.

New Product–Documentation: *Health Food Business Review*. 1968. July. p. 44-45. “Soy bean puree: Miso.” Miso is repeatedly called “Soybean Puree” in this article. A table gives the nutritional composition of “Barley miso” (based on Yamada 1957, p. 44).

Midwest Natural Foods Distributors, Inc. 1972. Catalog and price list. Nov. 1. Ann Arbor, Michigan. 58 p. See p. 7. “Miso Soybean Puree.” 8 oz or 16 oz.

Chico-San Products. 1973. July. p. 13. “Soybean puree (Miso).” This is barley miso. Same publication, 1981. Jan. p. 13. They now import and sell mugi, kome, and hacho miso.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 236. Chico-San was founded in March 1962, in Chico, California. One of their first products was traditional miso, imported from Japan and distributed widely under their label.

Chico-San Cracker Barrel. 1984. Oct. p. 1. Chico-San “was the first natural foods company to import miso into America.”

1222. Shibasaki, K.; Hesseltine, C.W. 1962. Miso fermentation. *Economic Botany* 16(2):180-95. June. [32 ref]
 • **Summary:** The role of miso in the Japanese diet is reported. The *Aspergillus oryzae* strain used for miso and sake has high amyolytic as well as proteolytic action. (That used for soy sauce has high proteolytic action). In miso fermentation, the koji starter is prepared by inoculating trays of cooked rice and vegetable ash. After good growth, the fungus is dried without killing its spores. Cooked soybeans are mixed with rice, salt and the koji starter. Chemical changes during fermentation are reported. Many microorganisms are present in miso. Address: 1. College of Agriculture, Tohoku Univ., Japan; 2. NRRL, Peoria, Illinois.

1223. Herb-Mueller, Lene. 1962. Die Soja und Ernaehrungsfragen in Entwicklungslaendern [The soybean and nutrition problems in developing countries]. *Ernaehrungs-Umschau* 9(5):143-46. July. [Ger]
 • **Summary:** Nutritive value of soybean products. Address: Bonn.

1224. Nagafuge, Emilio. 1962. Los productos alimenticios derivados de la soya [Food products derived from the soybean]. *Tierra (Mexico)* 17(9):678. Sept. [Spa]
 • **Summary:** Contents: Preface. Soymilk. Soy cheese [tofu]. Soy flour. Soy oil. Soy lard and butter (*Manteca y mantequilla de soya*). Soy sprouts (*Los brotes de soya*). Soy sauce. Miso.

Note: This is the earliest Spanish-language document seen that uses the term *mantequilla de soya* to refer to margarine. Address: Mexico.

1225. *Foreign Crops and Markets (USDA Bureau of Agricultural Economics)*. 1962. Japan to implement soybean agreement. 85(26):18. Dec. 24.

• **Summary:** "Japanese importers are preparing to implement the agreement to buy 150,000 metric tons (5.5 million bushels) of soybeans from Communist China for 1963 delivery (*Foreign Crops and Markets*, December 17, 1962). Procurement of the first half of the quantity, or 75,000 tons, was to be committed by December 15, and the other half by January 15.

"The Japan-Communist China Trade Council had sent notices to all principal soybean users asking each to specify the quantity of beans each firm would guarantee to buy. If the total exceeded 75,000 tons for the first portion, there would be pro-rata sharing."

"It was expected that the miso (soybean paste) manufacturers would take as much as they could use, since Chinese beans have traditionally been favored for miso making. However, their annual capacity is only about 100,000 tons (3.7 million bushels). The oil crushers, on the other hand, are reluctant to buy the Chinese beans... As the oil content of the Chinese beans is lower than that of U.S.

beans, the crushers do not want to pay an equal price. The Chinese had refused, at least until recently, to concede (about \$7 per ton differential was requested) on this point. Whether the crushers will 'cooperate' despite this disadvantage is unknown."

1226. Shibasaki, Kazuo; Hesseltine, C.W. 1962. [Miso-I. Preparation of soybeans for fermentation]. *Soybean Res. Technol.* No. 15. p. 1-14. [Jap]*
 Address: NRRL, Peoria, Illinois.

1227. Shibasaki, Kazuo; Hesseltine, C.W. 1962. [Miso. II. Fermentation]. *Soybean Res. Technol.* No. 16. p. 1-12. [Jap]*
 Address: NRRL, Peoria, Illinois.

1228. Doi, Masaru. 1962. The art of Japanese cookery. Tokyo, Japan: Shibata Publishing Co., Ltd. [x] + 110 p. Illust. (some color). No index. 22 cm. [Eng]
 • **Summary:** Soy-related recipes include: Tempura sauce (*Tentsuyu*, with soy sauce, p. 5). Miso soup with soy bean curd (p. 5). *Kuya-mushi* (Egg custard with tofu, p. 13). *Kenchin-mushi of Kodai* (Sea bream steamed with tofu filling, p. 17). *Kayaku-gohan* (With aburaage, fried soy bean curd, p. 24). *Koya-dofu* (Dry frozen bean curd as an ingredient in sushi, p. 39). *Chirashi-sushi* (With Koya-dofu, p. 46). *Sukiyaki* (With tofu, and shoyu in warishita, p. 50-52). *Mizutaki* (With tofu, and shoyu in tsuke-jiru dipping sauce, p. 58-61). *Yudofu* (With tofu, and shoyu in tsuke-jiru, p. 62-63). *Dote-nabe* of oysters with white miso paste (p. 63-64). *Shigiyaki* of eggplants (With tsuke-miso, p. 66-69). *Teri-yaki* (Meat, fish, with *tare* of 2 parts soy sauce and 3 parts mirin, p. 73-73). Miso soup (with akamiso, shiro-miso, soy bean curd, wakame, etc., p. 94, 96-99). Ohagi (with kinako {soy bean powder} and sesame seeds, p. 106). *Shoyu-sashi*—A small soy sauce dispenser (p. 110).

Also discusses: *Sekihan* (Rice with azuki beans and gomashio, p. 24-25). *Sushi with nori* (p. 37). Toasted *fu*—Light wheat gluten cake (p. 77). "How to make red bean paste. Red beans, 1½ c[ups], Sugar, 9 oz." (p. 106).

Note 1. This is the 2nd earliest English-language document seen (May 2001) that contains the word "Teri-yaki" (or "Teriyaki"). The text reads: "In *Teri-yaki* rich sauce which gives a sheen to ingredients is used as seasoning. *Teri-yaki* is preferred for fatty ingredients."

Note 2. This is the earliest English-language document seen (July 2003) that uses the Japanese word "gomashio" to refer to "sesame salt."

Note 3. This is the earliest English-language document seen (March 2006) that uses the term "red bean paste" to refer to sweet azuki bean paste [*azuki-an*].

1229. Hayashi, Shizuka. 1962. Problems involved in increasing world-wide use of soybean products as foods in

Japan. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 200-06.

• **Summary:** Contents: Price. Quality. Margarine and shortening. Mayonnaise. Miso, shoyu, tofu. Soybean meal. Soy flour. Soy milk. Frozen tofu. Food sources of Japan.

The 400,000 tons of soybeans produced in Japan are used for foods. From approximately 1 million tons of imported soybeans, Japan produces 150,000 tons of oil and 700,000 tons of meal. "Japanese oil consumption is the poorest [i.e. lowest = best] among the world nations. We need to consume oil at more than 5 times the present quantity to reach the level of the western countries." In 1952 Japanese consumption of edible oils was 7.52 gm per person per day, increasing to 11.52 gm in 1960. Soybean oil supplies about 30% of Japan's total oil supply. The main obstacles to greater consumption are price and quality (due to flavor reversion). The leading oil is rapeseed oil. The main oils used in margarine and shortening are fish oil (35.8% of total), beef tallow (25.4%), whale oil (10.0%), and coconut oil (8.0%).

New developments with traditional Japanese soy foods include: Dried, powdered miso in instant form is now available. Soybean meal is now the main ingredient in shoyu, rather than whole soybeans. A few soy milk plants have been erected and bottled soy milk is now sold in the market in limited areas. A certain culture is used to eliminate the beany flavor. Today, soybeans and soybean products provide the average Japanese with 10.6 gm/day of protein (16% of total protein consumption of 67.7 gm), and 7.6 gm/day of fat (28% of total fat consumption of 26.7 gm). During the period 1934-38, average Japanese protein consumption was 54.9 gm per person per day and fat consumption was 13.2 gm (less than half what it is today). Address: Managing Director, Japanese American Soybean Inst., Nikkatsu International Building, Room 410, No. 1, 1-Chomo Yurakucho, Chiyoda-Ku, Tokyo, Japan.

1230. Hesseltine, C.W. 1962. Research at Northern Regional Research Laboratory on fermented foods. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 74-82. [9 ref]
Address: Head, ARS Culture Collection Investigations, Fermentation Lab., Northern Utilization R&D Div., Peoria, Illinois.

1231. Hilbert, G.E. 1962. Foreign research program of U.S. Department of Agriculture on soybean protein products under Public Law 480. In: USDA Northern Regional Research Laboratory, ed. 1962. Proceedings of Conference

on Soybean Products for Protein in Human Foods. Peoria, IL: USDA NRRL. iii + 242 p. See p. 93-98.
Address: Director, Foreign Research and Technical Programs Div., USDA, Agricultural Research Service, Washington 25, DC.

1232. Miyashita, Akira. 1962. Kôri-dôfu no rekishi [History of dried-frozen tofu]. Tokyo: Japanese National Frozen Tofu Association (Zenkoku Kori-dofu Kogyo Kyodo Kumiai Rengokai). 591 p. Illust. No index. 28 cm. [Jap]

• **Summary:** This is the most comprehensive work ever published on the subject. Unfortunately there are few references to sources. However on page 48 is a list of early documents (mostly scrolls and books) in which Kori-dofu is mentioned, as follows: 1624-1643 *Ryori Monogatari*, and *Kebukiso*. 1648-1651 *Teitoku Bunshu*. 1688-1703 *Wakan Shojin Ryori-sho*, and *Honcho Shokukan*. 1711-1715 *Toryu Setsuryo Ryori Taizen*. 1716-1735 *Ryori Komoku Chomisho*. 1748-1750 *Ryori Sankai-kyo*. 1772-1780 *Shinsen Ryori Kondate Burui-shu*. 1781-1788 *Tofu Hyakuchi*, and *Tofu Hyakuchin Zokuhen*. 1801 *Ryori Shinan Taizen*, and *Honso Komoku Keimo*. 1804-1817 *Nihon Ryori-ho Taizen*. 1818-1829 *Shojin Ryori-tsu*, *Ryori-tsu*, and *Shojin Ryori Kondate-shu*. 1830-1843 *Toyo Kondate Ryori Hayashikumi*, and *Ryori Dokukeiko*. 1848-1853 Morisada Manko (essays).

Concerning the origin of Shimi-dofu (p. 38-39), there is a legend that Takeda Shingen taught how to make Shimi-dofu as well as miso. The areas where Takeda Shingen lived and where Shimi-dofu is sold are about the same, so it seems likely that there is some connection. In the early Edo period (p. 41), when a money economy became more common among the people, Shimi-dofu became a side business for many farm households in the area. In 1638 in *Kefukiso?* (*Haikai-shu*), there was a mention of *Matsumaekoku Kan-dofu*, which is Shimi-dofu.

Contents: 1. Origin of kori-dofu. 2. Production of kori-dofu in the Edo period. 3. The group of kori-dofu makers in Kuzushiro of Kishu and the monopoly of selling kori-dofu in Hasa Yama-han and Ishikawa-han. 4. The leaping progress of production of kori-dofu during the Meiji period. 5. The great European war [World War I] and the natural koya-dofu industry. 6. Shinshu Koya style kori-dofu marching out to Kansai. 7. The invention of kori-dofu which expands and softens. 8. The height of prosperity of the artificial freezing method and the downfall of natural kori-dofu. 9. Kori-dofu after the Pacific Ocean war [World War II]. 10. The group of kori-dofu production workers from Tajima who work away from home. 11. Present-day kori-dofu production business. Appendix. Postscript.

1233. Ono, Fumie. 1962. Try a Japanese dish. Tokyo: Bokusui Publishing Co. 110 p. Index. 21 cm. *

• **Summary:** Contains about 70 Japanese recipes.

1234. Shih, Shêng-han. 1962. A preliminary survey of the book *Ch'i Min Yao Shu: An agricultural encyclopaedia of the 6th century*. 2nd ed. Peking, China: Science (Kexue) Press. x + 107 p. No index. 21 cm. First ed. 1958. Third ed. 1974. [Eng]

• **Summary:** A discussion in English of the contents and significance of this key Chinese agricultural work. Contents: Preface. The Book *Ch'i Min Yao Shu*. Analysis of its source books. Part I: Original material in the *Ch'i Min Yao Shu*. Realisation of the importance of proper choice of season and soil. Cultivation of cereals. Culinary vegetables (Chiang ts'ai or soya hydrolysate conserves, p. 53-54). Fruit trees. Timber woods. Other economic plants (fiber crops, tinctorial plants). Animal husbandry. Domestic economy: Food processing (refining table salt by recrystallization, preparation of fine starch from cereal, saccharification of starch to prepare "barley sugar," fermentation [alcoholic fermentation, acetic fermentation, chiang {incl. soybean chiang; protein hydrolysates, p. 84-87}, shih {soy nuggets, interrupted and melanised protein hydrolysates, p. 87-88}, tsü {pickles, lactic fermentations from intrinsic carbohydrate}, cha {pickles, lactic fermentation from added carbohydrates}, lo {cheese lactic fermentation with casein}], fu and lah [jerked and salted meat]), other technical instructions for commodities of daily life (detergents {saponins}, extraction of pigments from bastard-saffron, dyeing with vegetable pigments, heating to accelerate "drying" of oils, glue-making, preparation of cosmetics). Part II: The influence of the *Ch'i Min Yao Shu* on agricultural science in China. Epilogue. Address: PhD (London), Prof. of Plant Physiology, Northwestern College of Agriculture [Wukung, Shensi], China.

1235. Shih, Shêng-han. 1962. Chiang (Document part). In: Shih Shêng-han, ed. 1962. A Preliminary Survey of the Book *Ch'i Min Yao Shu: An Agricultural Encyclopedia of the 6th Century*. 2nd ed. Peking, China: Science (Kexue) Press. x + 107 p. See p. 83-86. [Eng]

• **Summary:** The term *jiang* has no equivalent in most European languages. Microorganisms which are alcoholic starters include a number of molds that can hydrolyze various proteins into component amino acids and amides (such as asparagine and glutamine), resulting in a good taste or relish. This hydrolysis of proteins is the basic principle for preparing *jiang*.

The history of *jiang* has been traced back to the *Analects of Confucius (Lunyu)*. By the Han dynasty it was sold commercially together with grain-based wines, vinegar, and other liquids, so it must have been produced on a rather large scale.

For making *jiang*, as for wine, it is important to have good pure cultures of the fermentative microorganisms first. This culture was named *huangyi* (yellow coating), *mai yuan* (wheat-must), or *huangzheng* (yellow mold). Steamed wheat

grains were used as the starting material, culture medium, or substrate; kept in a warm and humid place, they soon served as a good growth medium for spores of the mold floating in the air or attached to the leaves of *Phragmites* or *Xanthium* used to cover the steamed grains.

After about a week (during the hottest month of summer) a yellow coating of sporangia or sporangiophores would appear on the surface, indicating that the starter for making *jiang* (*jiangqu*) was ready. The yellow coating, which also contains spores, is the essential substance for starting the fermentation.

Chapter 70 in the *Qimin Yaoshu* gives descriptions for preparing various kinds of *jiang*, from both animal products (meat, fish, crustaceans) and soybeans. In ancient times, most *jiang* was made from animal products: Brief recipes for making meat *jiang*, fish *jiang*, and soya *jiang* (also called "soya-hydrolysate") are given. Address: Prof. of Plant Physiology, Northwestern College of Agriculture, China.

1236. Sugimura, Keiichiro; Taira, H.; Ebisawa, H.; Sakurai, Y. 1962. Daizu kakô-hin no amino-san in kansuru kenkyû. IV. Mame miso seizô kôtei ni okeru amino-san riyô no henka [Studies on amino acid contents of processed soybean. IV. Variation of total and free amino acid contents in soybean "miso" processing]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 14(5):414-19. [6 ref. Jap; eng]

Address: Shokuhin Sogo Kenkyujo, Tokyo, Japan.

1237. Sugimura, Keiichiro; Taira, H.; Ebisawa, H.; Sakurai, Y. 1962. Daizu kakô-hin no amino-san in kansuru kenkyû. III. Mame miso no amino san [Studies on amino acid contents of processed soybean. III. Total and free amino acids of soybean "miso"]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 14(5):411-13. [13 ref. Jap; eng]

• **Summary:** Eighteen kinds of amino acids were observed in three types of miso. Address: Shokuhin Sogo Kenkyujo, Tokyo, Japan.

1238. Brandemuhl, William. 1963. Soybean history: Aspects of Buddhist influence. Anthropology Dept., University of Wisconsin, Madison. 15 p. Jan. Unpublished manuscript. 28 cm. Summarized as "Early Soybeans Were Spread by Buddhists" in *Soybean Digest*, July 1963, p. 21. [52 ref]

• **Summary:** This research paper (which is not a thesis) was prepared for Anthropology 150a, taught by Dr. R.J. Miller. Contents: Purpose of study. Method of study. Botanical history: Naming the soybean, the *Glycine ussuriensis* case, other genetic evidence, claim on the origin of the soybean. Initial utilization. Botanical dissemination. Soybean history—non-botanical: Legend, recorded Chinese soybean history, concluding notes on soybean origin and cultivation

history. Buddhist influence on the development of the soybean: Soysauce or shōyu, miso, tofu, natto, ancient soybean food products, the soybean grows.

“Another principal concern of this paper is the Buddhist connection to soybean development. The introduction of soybeans, although an approximation at the very best, coincides quite closely with the spread of Buddhism in Japan. As shown later, Buddhism has a very close connection with soybean history and in many product sectors of soybean development, may have created or at least popularized them” (p. 1).

“Contrary to the above statement I submit the following data which I believe can easily be documented: 1. Emperor Sheng-nung is a mythical character (letter from Herbert W. Johnson, Research Agronomist, USDA / ARS Crops Research Div., Beltsville, Maryland, 30 Aug. 1962). 2. Emperor Shen-nung was a legendary character who cannot be pinpointed to a date of 2838 B.C. (letter from Jung-pang Lo, Research Asst. Prof., Far Eastern and Russian Inst., Univ. of Washington, 6 Sept. 1962). 3. Shen-nung is a mythical ruler, never living at the date attributed to him or at any other date (letter from Edward H. Schaefer, Professor of Oriental Languages, Univ. of California, Berkeley, 6 Sept. 1962). 4. A work attributed to Shen-nung is called *Shen nung pen Ts'ao Ching* but since it contains many Han Period facts (around the beginning of the Christian era) it is believed to be a Post-Han work. This work is first mentioned by T'ao Hung-ching (who edited it) early in the 6th century A.D. (Jung-pang Lo). 5-6. The *Pen Ts'ao Kang Mu* was written by L. Shih-chen (1518-1593) in A.D. 1596 or 1597 (Jung-pang Lo, Schaefer)... 9. The word 'Shiyu' cannot be found in Chinese dictionaries. The name for the soybean in China being 'Ta-tou,' meaning big bean (Jung-pang Lo).”

“Concluding notes on soybean origin and cultivation history: *The Book of Poetry* (Shih-ching) mentions boiling shu (pulse) and the *Erh-ya* (a Chou period lexicon, authorship attributed to Confucius or his disciples) mentions Jung-shu. Kao yu, the commentator, remarked that the Jung-shu (pulse of the Hu people) which was also known as Ta-tou (the soybean). Jung was a term used by the Chinese in the Chou period for the non-Chinese people of the North and Ju was a term used by the Chinese people of the North and West. This would seem to indicate that the soybean was introduced to China from the non-Chinese people of the North. Also supporting this is the *Chou-shu* by Hsi meng, in which there is a reference to Shan-jung shu (pulse of the Jung people of the mountains). A commentator explains that the Shan-jung were tribes in the Northeast (Manchuria).

“The Kuang-Tzu contains a passage saying that after Duke Huan of Chi (7 B.C.) defeated the Shan-jung the Jung-shu came to be known throughout China. Chia su-hsieh (5 A.D.) in his book *Ch'i-min Yao-shu* (Ts'tung-shu Chi-ch'eng, editor) quoted the *Shen-nung pen Ts'ao* as

saying that Ta-tou (the big bean) was the Hu-Tou (Hu peoples' bean) which Chang Ch'ien brought back from his exploration of central Asia in the first century B.C., there being two varieties. In the Han period both Ts'ui shih and Fansheng in their books on farming techniques mention cultivation of the Ta-tou and its use in famine relief. The *Pen Ts'ao Kang Mu* (1596), mentioned earlier, has a long discourse on the medical properties of the Ta-tou (Jung-pang Lo).”

“Buddhist influence on the development of the soybean: Although references to the Buddhist influence on soybean development are particularly sparse I believe Buddhism deserves credit for initiating the spectacular expansion of soybean utilization in Japan which triggered utilization in the rest of the world. The Buddhist connection is certainly true if oil utilization is excluded. Below lie the reasons for my belief.

“Buddhism was introduced into Japan around 500-600 A.D. (Bush 1959, p. 28-29). Among the priests the traditional hate of flesh was present and agriculture of the field type was encouraged by the government (Tezuka 1936, p. 13). The introduction of soybeans fits well into this historical development. The recent finding of soybean seed in *Shōso In* (Japan) which was established in the Nara era for the storing of legumes of that era that were introduced from China (Nagata 1960, p. 97) proves as does the record of ceremony and taxation system of the Nara era (Nagata, p. 75) that soybeans did exist in Japan at that time.

“Soysauce or more properly shōyu, the now renowned Japanese flavoring, is said to have originated during the Chou dynasty (1134-246 B.C.) (Komiya 1955, p. 14) and was introduced into Japan when Buddhism was being established although not becoming popular until 1300 (Joya 1951, p. 31-33).

“Miso, soybean paste, is a much used breakfast and soup dish in Japan that was introduced to Japan from China or Korea (Horvath 1927, p. 83). It was definitely used by the priests when they first entered Japan, in fact they popularized it among their new vegetarian converts (Joya, p. 21-23).

“An ancient Chinese book states that the Philosopher Hamintze, a prince of the Han dynasty, was the inventor of Tofu or soybean curd (Horvath, p. 6) while another source attributes the tofu innovation to the Chinese Philosopher Whai Nain Tze (Piper & Morse 1923, p. 234). The manufacture of soybean curd (tofu) was started in China in 164 B.C. during Emperor Hwai Wen's reign by Liu An, duke of Hwai Nan. Liu An was a great friend of the Buddhist monks and it seems quite likely that he made this bean curd to provide a change or delicacy to break the monotony of the monastic ration. Note: Whai Nain = Huainan. Liu An was the duke (*tze*) of Huannan. So all of these people are one and the same person.

Tofu was introduced into Japan from Korea for the first time during the Toyotomi government (Horvath, p. 73) and was undoubtedly introduced into Japan from China by the Buddhists (Piper & Morse, p. 234) being used for their daily food before it was generally used (Horvath, p. 73).

“The true Buddhist monk was carried through the period of childhood growth on a rather heavy diet of bean curd (Horvath, p. 17). Even the naming of soybean curd has its esoteric connotations as the Classical Chinese name for tofu is Li chi which probably means morning prayer (Horvath, p. 72).

“Natto, a sort of vegetable cheese prepared from soybeans has long been used by the Buddhists and is now used extensively by the Japanese (Piper & Morse, p. 224).

“Buddhism seems to have been a major reason for the development of Japan for main soybean products. With the existence of these products Japan opened the world to soybeans.” Address: Univ. of Wisconsin, Madison, Wisconsin.

1239. Senti, F.R. 1963. Soybeans—Their future as a food and feed crop. *Soybean Digest*. Jan. p. 16-20.

• **Summary:** “A thorough survey of the present and potential markets for both the oil and meal fractions of the soybean.” Discusses food uses of soybean oil, fats and oils used in margarine (1946-61; graph), sources of high-protein concentrates or livestock and poultry feeds (1937-61; graph), polyunsaturated fatty acids in the U.S. diet, feed and food uses of soybean meal, growth in oilseed meal consumption, tofu, miso, tempeh, UNICEF’s clinical trial with soy beverage for infants in Taiwan, Public Law 480 and soya. To date 12 projects sponsored by the NRRL and funded by P.L. 480 on various food aspects of soybean utilization have been activated in Italy, Spain, Scotland, Finland, Israel, and Poland.

Figure 1, “Fats and oils used in shortening (1946-61)” is a graph showing that in 1945, soybean oil was the main oil used, followed by cottonseed oil, with animal fats a distant third. In 1961 soybean oil is still the leader (47.6% of total fats used), followed by animal fats (33.3%), then cottonseed oil (16.7%).

Figure 2 is a graph showing that per capita consumption of liquid edible oils increased from about 6.2 lb in 1945 to 11.2 lb in 1961.

Figure 3, “Fats and oils used in margarine (1946-1961)” is a graph showing the total increasing from about 450 million lb in 1946 to about 1,350 million lb in 1961. In 1946 soybean oil and cottonseed oil each accounted for about 50% of the total oil. In 1961 soy oil accounted for about 78% of the total, followed by cottonseed oil and corn oil. Address: Director, NRRL, Peoria, Illinois.

1240. Ebine, Hideo; Furusho, S.; Nakano, M. 1963. Miso no bôyu ni kansuru kenkyû. II. Kobukuro zume mugi miso

no kanetsu shori [Study on the prevention of swelling in miso. II. Heat treatment of miso in plastic bags]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 17. p. 42-48. March. [11 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1241. Ebine, H.; Matsushita, Z.; Sasaki, H.; Hasunuma, T.; Matsumoto, K. 1963. Rikuto o mochiita miso jôzô shiken [Evaluation of upland rice for making miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 17. p. 162-69. March. [4 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1242. Ebine, Hideo; Ito, Hiroshi; Hieda, Harukiyo; Kosaka, Shokichi. 1963. Kansô nyûsan-kin oyobi kôbo o fukumu tane kôji ni yoru miso jôzô shiken [Miso manufacturing employing “tane-koji” (koji starter) including freeze-dried lactic acid bacteria and yeast]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 17. p. 170-78. March. [17 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1243. Ebine, Hideo; Matsushita, Z.; Sasaki, H.; Hasunuma, T.; Otake, T.; Mouri, M. 1963. Dai 3 kai Miso Zenkoku Hinpyo-kai sogo seiseki. I. Sogo seiseki to butsuri kagaku bunseki kekka no kentô [Results of the third annual inspection of miso (1960). I. Relation of organoleptic test and chemical or physical analysis]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 17. p. 179-201. March. [4 ref. Jap; eng]

• **Summary:** Samples of 226 miso varieties, collected from throughout Japan, were subjected to organoleptic tests, and both physical and chemical analysis. Organoleptic tests revealed that miso made from whole soybeans was superior to that made from soybean flakes or from a mixture of whole soybeans and flakes. Miso made from Japanese soybeans was superior to that made from soybeans imported from the USA or China.

Most miso graded as excellent or good conformed to the following formula: $N = 0.1 (5S-R)$ where N is the weight of ordinary salt (NaCl), R is the weight of rice or barley, and S is the weight of soybeans. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1244. Ebine, Hideo; Ito, Hiroshi; Kosaka, Shokichi; Furusho, Shinji; Matsushita, Zenichi; Sasaki, Hirokuni; Hasunuma, Toshiko; Kumai, Keiji. 1963. Dai 4 kai Miso Zenkoku Hinpyo-kai sogo seiseki [Results of the 4th annual inspection of miso (1961)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 17. p. 201-37. March. [6 ref. Jap; eng]

• **Summary:** 257 miso samples, collected from throughout Japan, were subjected to organoleptic tests, chemical analysis (including moisture, sodium chloride, acidity I, acidity II, and glutamic acid), physical analysis (pH and color), and microbiological counts. Seven conclusions are given.

(1) As observed in the 3rd annual inspection, Japanese soybeans showed general superiority to imported soybeans as a raw material for making miso. Note, however, that samples of miso made from U.S. soybeans and graded as excellent or good, increased in number during the past year. Imported soybeans can even be used successfully to make bright colored miso. However, soybean flakes are not yet considered a suitable raw material for making miso of good quality.

(3) Miso of high moisture content was graded as poor in consistency.

Reprinted from *Miso Kagaku (Miso Science)*, No. 9, p. 30. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1245. Ito, Hiroshi; Ebine, H.; Kosaka, S.; Nakano, M. 1963. Miso no bōyu ni kansuru kenkyū. I. Masai kongo ni yoru fukurozume miso no fukure [Study on the prevention of swelling in miso. I. Swelling of blended miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 17. p. 38-41. March. [3 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1246. Kamada, Hideomoto; Ebine, Hideo; Nakano, Masahiro. 1963. Daizu seihin no chakushoku ni kansuru kenkyū. XIII. Miso jōzō-chū no chakushoku seibun no shōchō to iro no seisei [Browning reaction of soybean products. XIII. Color formation of miso during brewing]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 17. p. 158-61. March. [8 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1247. Sugimura, Keiichiro; Taira, Hirokadzu; Ebisawa, Harue; Sakurai, Yoshito. 1963. Daizu kakōhin no amino-san ni kansuru kenkyū. III. [Studies on amino acid contents of processed soybean. III. Total and free amino acids of soybean "miso"]. *Shokuryo Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 17. p. 312-14. March. [13 ref. Jap; eng]

• **Summary:** Reprinted from *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 14:411 (1962). Address: 1-2. Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1248. Sugimura, Keiichiro; Taira, Hirokadzu; Ebisawa, Harue; Sakurai, Yoshito. 1963. Daizu kakōhin no amino-san ni kansuru kenkyū. IV. [Studies on amino acid contents of processed soybean. IV. Variation of total and free amino acid contents in soybean "miso" processing]. *Shokuryo Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 17. p. 315-19. March. [6 ref. Jap; eng]

• **Summary:** Reprinted from *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 14:44 (1962). Address: 1-2. Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1249. *Christian Science Monitor*. 1963. Symphony of sounds tells time in Tokyo: Centuries-old street calls. May 25. p. 15.

1250. McEachern, Margaret. 1963. Symphony of sounds tells time in Tokyo: Centuries-old street calls. *Christian Science Monitor*. May 25. p. 15.

• **Summary:** Tokyo—The Japanese housewife doesn't need a clock to tell the time of day. She only needs to listen to the distinctive calls from her street.

"The day begins with the call, 'Natto... natto... in a high, youthful voice. That's the 'commercial' of the teen-age boy making his rounds with fermented beans. This little delicacy, if you haven't visited Japan, is tasty and nourishing. The housewife uses these beans in soup, flavored with soy sauce, served over rice. The Japanese are probably the only people who like soup in the morning.

"'Misoshiru' [miso soup], the common breakfast food, consists of 'miso,' or fermented [soy] bean soup, with vegetables and fish."

"Late afternoon brings the eerie sound of a horn announcing the bean-curd [tofu] salesman. This vendor carries his produce in wooden buckets attached to a long bamboo pole." A photo shows housewives shopping in Tokyo.

1251. Senti, Frederic R. 1963. Current status of soybean utilization research under P.L. 480. *Soybean Digest*. May. p. 28, 30-34.

• **Summary:** This is the third in a series of USDA research reports under the P.L. 480 program. Discusses progress on active projects: Soybean oil in Seville, Spain; Chemical changes in sterols during refining of soy oil by Prof. H. Niewiadomski in Gdansk, Poland; Flavor stability of soy oil in by Prof. Y. Toyama at Toyo Univ. in Japan; Improving the frying quality of soybean oil by Prof. G. Varela at Univ. of Granada, Spain; Meal constituents.

Oriental foods: Production of shoyu (soy sauce) using U.S. vs. Japanese soybeans, use of dehulled soybean grits for making miso, miso-type food in Israel, use of U.S.

soybeans in making tofu, or soybean curd, by the Japan Tofu Association, Tokyo.

Industrial applications: Polymerization studied in Milan, Italy. Soybean constituents. Oriental foods #2: Dried tofu in Japan, *Saccharomyces rouxii* yeast in shoyu and miso, development of fermented products from soybean milk in Japan, fermented soybean cheese in Taiwan, fermented soyfoods (tempeh, oncom, ragi) in Indonesia.

Domestic research for increasing imports: Work with soy oil, UNICEF trainees from Brazil studying tempeh, projects saponins, protein complexes, and isolated protein quality in Israel.

A small portrait photo shows F.R. Senti. Address: Director, Northern Utilization Research and Development Div. (also known as the Northern Regional Research Lab.), Agricultural Research Service, USDA, Peoria, Illinois.

1252. Smith, Allan K. 1963. Foreign uses of soybean protein foods. *Cereal Science Today* 8(6):196, 198, 200, 210. July. [28 ref]

• **Summary:** Contents: Introduction (world food shortages). Technological assistance (by NRRL). Oriental traditional foods: Tofu, shoyu or soy sauce, miso or soy paste, monosodium glutamate, natto and kinako, soy beverage, tempeh (tempe). Recent food developments. Address: NRRL, Peoria, Illinois.

1253. *Hartford Courant (Connecticut)*, 1963. Today we look for new ideas from the Japanese. Aug. 11. p. 1D.

• **Summary:** A glimpse of home life in postwar Japan, with six photos and an illustration of a mother with a baby on her back and a child standing beside her. A typical day's menu for a middle class family is: "Breakfast: bean paste [miso] soup, rice, pickled vegetables and seaweed, Tofu, which is a bean curd, like custard, and green tea."

The evening meal, usually served Japanese style, includes "cooked or pickled vegetables, tofu bean curd custard, a clear soup and some fresh fruit... washed down with many tiny cups of green tea."

1254. Mitani, Kazuma. 1963. Edo shōbai zu-e [Illustrations of merchants, artisans and peddlers during the Edo period in Japan]. Tokyo: Seiabo. 271 p. Illust. No index. 20 x 27 cm. [Jap]

• **Summary:** A stunning book, filled with large, lovely illustrations (mostly wood-block prints or line drawings) from the Edo period (1600-1867) in Japan. Soy-related illustrations:

(1) A tofu shop (p. 18), showing a man sitting on a wooden lever-press pressing the soymilk out of cloth straining bag while his wife, with a baby on her back, turns a hand-turned stone mill that grinds soaked soybeans into a smooth puree, which falls into a wooden tub. Large blocks of tofu are shown immersed in cold water in a sort of

wooden sink, with a tofu knife on top. In the background, up a step inside the house, an elderly person is deep-frying tofu.

(2) A tofu seller (p. 19), walking in the street with two wooden tubs of tofu at both ends of a shoulder pole. He is wearing getas on his feet and a large round straw hat.

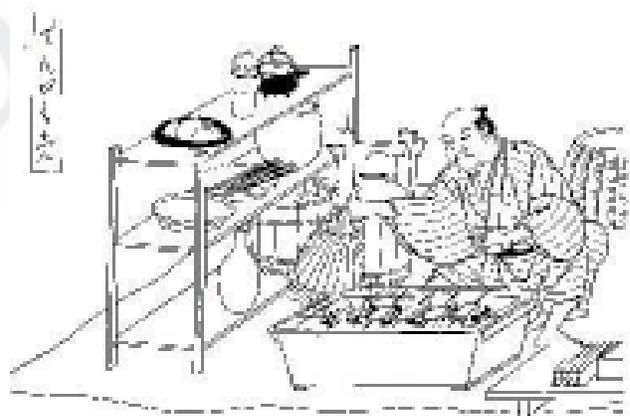
(3) A shoyu seller (p. 23), walking in the street from door to door with several layers of wooden tubs at both ends of a shoulder pole and a kerchief over the head.



(4) A man in a shop with Kinzanji hishio in wooden vats of various sizes, each bound by braided bamboo hoops (p. 26).

(5) A woman in a kimono (p. 26), serving two cups of amazake.

(6) A man selling dengaku (p. 28), skewered tofu above hot coals in a brazier. He is fanning the coals and hunkering behind the brazier.



(7) A seller of oden (p. 29). He is standing, resting on the shoulder pole, which rests atop two tall boxes.

(8) A man making Inari-zushi (p. 49) at a street stall. An illustration below the roof shows a fox running.

(9) A man selling woven bamboo baskets and miso strainers (*zaru ya miso-koshi*) (p. 210).

(10) A woman with a child on her back as she walks (p. 239), selling edamame (green vegetable soybeans) in a basket.

The author collected these illustrations from many sources; the source of each is given in an "accompanying source book"—which we have been unable to locate. He re-drew each of the old originals, but tried to be true to the

original. He eliminated a few things that he felt were not needed in some illustrations and added a few more things to others to make them clearer for today's readers. There are no illustrations that he created. Most of the originals are from the mid-Edo period, especially the Kansei, Bunka, and Bunsei eras (1789-1830), with 2-3 things from the Kyoho period (1716-1735).

To make this book he went to many libraries, archives, and other places where historical documents are kept; he was helped by many other people. He was born on 15 March 1912 (Meiji 45). He graduated from Tokyo Bijutsu Daigaku. Nihon ga-ka (Tokyo Fine-Arts Univ., Japanese Art Dept.). He is a member of the Bijutsu Shuppan Renmei (Art Related Publishing Bureau). He presently lives at Setagaya-ku, Tokyo. The book has a detailed table of contents, but no index. Address: Japan.

1255. *Soybean Digest*. 1963. Japan miso team visits U.S. Nov. p. 22.

1256. Standal, Bluebell R. 1963. Nutritional value of proteins of Oriental soybean foods. *J. of Nutrition* 81(3):279-85. Nov. [18 ref]

• **Summary:** Hawaii imports 680-907 metric tons/year of soybeans from the United States mainland and most of it is used for food. "Oriental soybean products are used daily by all nationalities in Hawaii. They constitute important items in the diet. All soybean products used in these islands, e.g., tofu, natto, miso, shoyu, and sprouts, are prepared from the matured beans by the methods using in Japan and China. A certain amount of the beans is grown locally and picked green for use as will be described later" (p. 279).

The commercial process for making each product is described. Concerning natto: "The preparation had a characteristic cheesy odor which attracted flies and apparently stimulated the appetite of rats. Agar smears of the preparation show that it contained an almost pure culture of gram-positive rods in long chains, without spore formation for 2 days at 31°C. Three brands of natto were available.

The Net Protein Utilization (NPU) values, at 10% protein in the diet for rats, were determined to be: powdered whole egg (control) 90.4, *edamame* (green soybeans; "picked green and used as a vegetable") 72.2 (the highest of any soyfood in this study), tofu 65.0, [soy] bean sprouts 56.0, natto 44.4, and mung bean sprouts (*Phaseolus aureus* Roxb.) 35.6. Address: Dep. of Nutrition, Hawaii Agric. Exp. Station, Univ. of Hawaii, Honolulu.

1257. Keaton, Clyde. 1963. Japan: An expanding market for soybeans. *Foreign Agriculture* 1(51):9. Dec. 23. Address: Asst. Agricultural Attaché, Tokyo, Japan.

1258. Diamant, Yehudah; Ilani-Feigenbaum, Yaacov; Pinsky, Elijah; Lakser, Shoshana; Shor, Fruma. 1963. The preparation of Japanese-type miso for human consumption by fermentation of defatted soybean meal. *Israel J. of Chemistry* 1(3a):184-85. Dec. [1 ref]

• **Summary:** The use of defatted soybean flakes, "the protein-rich residue remaining after commercial oil extraction from the whole soybean," in place of whole soybeans, gave a product which compared favorably with Japanese miso and with miso prepared locally from whole soybeans. Address: Dep. of Biochemistry, The Bar-Ilan Univ., Ramat-Gan, Israel.

1259. Chung, J.; Cho, B.; Lee, C. 1963. Studies on the composition of kochujang. *Hanguk Nonghwa Hakhoe Chi (J. of the Korean Agricultural Chemical Society)* 4:43-46. [Eng; Kor]*

1260. Chaves, Nelson. 1963. Proteínas vegetais e trópicos [Vegetarian and tropical proteins]. Recife, Brazil: Imprensa Universitária. 151 + 5 p. Illust. Series: Coleção nordestina, 2. [75+* ref. Por]

• **Summary:** Soyfoods and their nutritional value are discussed on pages 65-67, incl. soymilk (*leite de soja*), tempeh, miso, tofu, shoyu, and natto. Address: Universidade do Recife, Instituto de Fisiologia e Nutricao.

1261. Mei, Yu Wen; Adams, Charlotte. 1963. 100 most honorable Chinese recipes. New York, NY: Thomas Y. Crowell Company. xi + 140 p. Illust. by Wen Mei. Index. 24 cm.

• **Summary:** Contents: Introduction. Chinese ingredients. Chinese cooking utensils and Western equivalents. Some tips on Chinese cookery. Menu for a Chinese dinner party. Daily dishes. Cold wine dishes. Hot wine dishes. Main dishes. Soups. Rice dishes. Desserts. General recipes. Mail order shops. Geographical locations of honorable recipes.

This is a collection of the greatest classical recipes of China. All five major "schools" of Chinese cooking are represented: Shanghai, Peking, Yang Chow (120 miles northwest of Shanghai; pinyin: Yangzhou; Wade-Giles: Yang-chou), Szechuan, and Canton. Yu Lin Chuan, one of Old China's most renowned restaurateurs, has selected these recipes, all of which were translated by his daughter, Yu Wen Mei, and carefully tested by Charlotte Adams—to ensure ease of preparation by American homemakers.

The chapter on "Chinese ingredients" describes the following soy-related ingredients: Agar-agar, bean curd (fresh, or fermented), Hoisin sauce, laver (seaweed), red beans [azuki] (tiny beans used for making sweet bean paste), sesame oil, soy bean paste (very salty, or lightly salted). Hoisin sauce is "A delicious, thick, dark-brownish-red condiment, often used as an ingredient in cooked dishes, also as a side-dish sauce for dipping" (p. 2).

The chapter titled “Some tips on Chinese cookery” states (p. 7). Peanut oil is the preferred type of oil. If food is truly fine, “there is no reason whatsoever to add monosodium glutamate to it, and you will note that it is required in none of the recipes.” “We strongly suggest that you buy imported soy sauce by the quart. The soy sauce made here is much saltier than that which comes from Hong Kong, and its use therefore alters the recipes.” Many recipes are seasoned with soy sauce or soy bean paste

Soy-related recipes: Shrimp and bean curd (Yang Chow; p. 24). Crabmeat and bean curd soup (p. 94). Shrimp ball, ham, and bean curd soup (p. 103). Red roast pork (Yang Chow, with soy sauce; p. 113). Almond bean curd (Peking; p. 121). Red bean paste I and II (p. 127-28).

Note: This is the 2nd earliest document seen (Sept. 2008) that mentions Hoisin sauce. Address: New York City.

1262. Onishi, Hiroshi. 1963. Osmophilic yeasts. *Advances in Food Research* 12:53-94. [150+* ref]

• **Summary:** Since the word “osmophilic” was first used by von Richter (1912) for the group of yeasts that can grow well in an environment of high osmotic pressures, a large number of yeasts showing sugar- and salt-tolerant properties have been described.

Soy sauce mashers differ significantly from other brew mashers in their high content of sodium chloride (about 18%) and nitrogen (1.0 to 1.5% as total nitrogen). Thus, in Japan, osmophilic yeasts have been investigated mainly for “effective utilization in the soy sauce and miso paste industry.”

Soy [sauce] yeasts and miso yeasts: The first report on soy [sauce] yeasts appeared in 1906, when Saito isolated 5 strains of salt-tolerant yeasts from soy sauce mashers in the Choshi district and classified them into *Saccharomyces soya*, *Zygosaccharomyces japonicus*, *Pichia farinosa*, *Mycoderma* sp., and *Torula* sp. Subsequently, many taxonomic studies were carried out on soy yeasts (Mitsuda, 1910; Nishimura, 1910; Kita, 1911; Ishimaru, 1935). However, none of these observations explained which yeast played an important role in the ripening of soy mashers. Takahashi and Yukawa (1911) showed that *Zygosaccharomyces major* and *Zygosaccharomyces soja* were useful in ripening soy mashers, giving the characteristic taste and flavor through their fermentation. *Zygosaccharomyces japonicus* and *Zygosaccharomyces salsus* were shown to be harmful because they were the main cause of the formation of pellicles leading to deterioration of the commercial quality. This work has been believed to give the most reliable information on both microbiological and applied aspects of soy yeasts.

“As for miso yeasts, extensive and detailed studies were conducted by Mogi (1938-1942). Unlike soy sauce, miso pastes were commercially produced in great variety with different raw materials and various contents of NaCl. Mogi

described many new species of miso yeasts belonging to *Saccharomyces*, *Zygosaccharomyces*, *Debaryomyces*, *Hanseluna*, *Pseudohanseluna*, *Pseudohanseluna*, *Pichia*, *Zygopichia*, *Torulopsis*, *Pseudomycoderma*, and *Pseudomonilia*. Among them, the dominants were *Saccharomyces*, *Torulopsis*, *Zygosaccharomyces*, and *Zygopichia*, and the last two were found chiefly in miso paste of relatively high salt content.”

Salt tolerant yeasts, especially *Saccharomyces rouxii*, play an important role in soy sauce and miso fermentation in Japan. They play a key role in creating the characteristic flavor and taste, and when added, can shorten the ripening period of the mash while improving its quality. Especially with semichemical soy sauce, involving acid hydrolysis of the soybeans, it is very important to add yeasts that cause vigorous fermentation of the mash, which improves the flavor and taste.

But osmophilic yeasts can also cause food spoilage—especially the dry white pellicles or films that form on the surface of (usually raw) soy sauce, and may cause gaseous fermentation. These pellicles are caused by the growth of film-forming yeasts such as *Saccharomyces rouxii* var. *halomembranis* and *Pichia*; the result is deterioration of soy sauce quality. “This spoilage cannot be seen in well-matured soy sauce of good quality, because it contains yeast-static compounds.”

Note: This is the earliest document seen (June 1999) that mentions the yeast *Zygosaccharomyces rouxii* in connection with soy sauce or miso. Address: Noda Inst. for Scientific Research, Noda-shi, Chiba-ken, Japan.

1263. Sato, Makoto. ed. 1963. Kuki, hishio, misho, miso, shōyu nado ni kansuru shiryō [Historical documents about soy nuggets, hishio or chiang, misho, miso and shoyu]. Noda: Noda Kofukai Toshokan. 230 p. Illust. No index. 28 cm. [189 ref. Jap]

• **Summary:** Reprints of 189 old documents on shoyu and miso, and their progenitors, in chronological sequence. The alternate title is “Shoyu miso shiryō shusei.” Makoto Sato was born in 1907. Address: Head, Kofukai Library (Kofukai Toshokan Cho).

1264. Sato, Makoto. ed. 1963. Shōyu miso shiryō shūsei [Collected historical documents about shoyu and miso]. Noda: Okikazekai Toshokan. 230 p. 22 cm. [Jap]*

• **Summary:** See the other entry for Sato 1963. Address: Japan.

1265. Tanaka, Heihachi; Nicholas, Betty. 1963. The pleasures of Japanese cooking. Englewood Cliffs, New Jersey: Prentice Hall, Inc. viii + 247 p. Illust. Index. 22 cm.

• **Summary:** Contents: Introduction. 1. A chat about Japanese food: Seasonings and flavorings, table settings and utensils, kitchen utensils, etiquette, cooking and serving a

Japanese meal. 2. Appetizers. 3. Soups. 4. Broiled dishes. 5. Steamed dishes. 6. Saucepan foods. 7. Fried foods. 8. Salads. 9. Vegetables. 10. Rice and noodle dishes. 11. Thirst-quenchers. 12. Desserts. 13. Festival foods. Glossary [of Japanese foods and utensils]. List of retail outlets for Japanese food products (national chains and alphabetically by state in the USA).

The book begins (p. 1): “To many Westerners, the cuisine of Japan consists almost entirely of *sukiyaki*, *tempura*, rice and soy sauce. Nothing could be further from the truth.”

Vegetables “are harvested at the height of their season,” when tender and full of flavor, then cooked lightly and used (for example) “as an ingredient in *misoshiru* (thick soup [miso soup]) or pickled” (p. 3).

“If one were to single out the most important vegetable cultivated in Japan it would be the soybean. For this legume,... is such a versatile food that it is served in some manner at practically every Japanese meal.

“In the hilly interior of the country where fish is scarce, or in the vegetarian menus of the Buddhists, soybeans are called the ‘fish of the field’ and relied upon as a valuable source of protein. A favored way of preparing the green soybean is simply to boil and hull it. Dried soybeans are ground [sic], soaked in water, cooked and mashed, sieved through silk, and finally cooked again to produce bean curd or *tofu*.

“Steamed and fermented beans become *natto*. *Miso*, a bean paste made by boiling soybeans, mashing them, adding wheat ferment [sic] and salt and allowing this mixture to ferment for several months, lends itself to use in countless dishes. *Moyashi*, the tender young sprouts of the soybean, are cultivated on indoor racks to conserve precious space in the fields.” In a few days, a single cup of soybeans will produce 3-4 pounds of succulent sprouts (p. 3-4).

“Queen of Japanese seasonings is *shoyu* or soy sauce, a dark, red-brown, thirst-provoking liquid made from wheat or barley, soybeans, salt and water. *Shoyu* is loved by the Japanese for its piquant flavor and its use is so extensive that almost no dish is conceivable without it.” A brief history of *shoyu* and its forerunner, *hishio*, and the process for making *shoyu* are given. *Shoyu* “mash is allowed to ferment and mature naturally for a full eighteen months when it is pressed and the sauce obtained pasteurized to become refined *shoyu*.”

“Another multi-purpose seasoning and foodstuff is *miso*, a paste made from fermented rice and soybeans.” Most *miso* “lasts for years without spoiling or deteriorating. There are two types of *miso*—red and white. Both are widely used in Japan but western palates seem to prefer the white type. Both are highly nutritious and are used in literally hundreds of ways: as a seasoning, a main dish and the basis of many hearty, potage-type soups” (p. 5-6).

“For centuries [sic] Japanese cooks have used a dashi of *aji-no-moto*, a seaweed or vegetable protein derivative, to intensify the natural flavors of the foods they cooked. Translated, *aji-no-moto* means “essence of taste” (it is often referred to as taste powder) because the minute white crystals heighten the inherent flavors of foods,... but lending no flavor of their own” (p. 6).

Yakimono are broiled foods. “Flavor broiling includes *yakitori* (broiled chicken), *teriyaki* (fish marinated in a sauce containing *shoyu* and then broiled),... Miso-broiling is used for such vegetables as eggplant as well as for fish or meat” (p. 13).

“Inasmuch as *shoyu*, or soy sauce, is such an all-important seasoning and is called for in almost every Japanese recipe, it should be noted that the use of genuine *shoyu* is quite essential. Most other soy sauces, while excellent for other types of cuisine, really don’t do justice to Japanese cooking” (p. 19). Also discusses wasabi, sesame seeds, sesame oil, *katsuobushi*, *konbu*, sake, and various mushrooms (p. 20-22).

“*Tofu*, or soybean curd, is such a versatile foodstuff—it may be boiled, fried, steamed, sautéed or marinated—that it is included as an ingredient in many recipes in this cookbook. Fresh *tofu* is sold in cakes; refrigerated, it will keep about one week. It is also available in cans and, while the processed product is not quite as tender as the fresh, it does make a satisfactory substitute. The consistence of *tofu* resembles thick custard and it should be handled carefully to avoid breaking and crumbling. Western taste buds seem to find *tofu* bland and a bit flavorless, but when deftly sauced it is very delicious—and also nutritious. Note: *tofu* must not be overcooked or it will toughen and develop a rubbery texture” (p. 24).

Recipes include: Norimaki-Sushi (with nori, *shoyu*, and sashimi). Tiny *teriyaki* (ingredients: 2 pounds beef tenderloin, 1 cup *shoyu*, 3/4 cup water, 1/2 cup mirin, 3/4 cup honey, 1 clove garlic, crushed, and 1 one-inch piece fresh gingerroot, grated; p. 46). Liver *tsukudani* (with *shoyu*; p. 55). Fish and *tofu* stew (p. 69). Oyster *miso* (p. 71). Vegetable and noodle *miso* (p. 72). Shrimp or prawn *miso* (p. 73).

Chapter 4 is titled “Broiled foods.” “... almost all cooking in Japan is done over a charcoal fire,...” “Without a doubt, the most popular of all broiled dishes with the Japanese people is *yakitori*, or broiled chicken... Almost as popular as *yakitori* is *teriyaki*, usually fish marinated in a *shoyu* sauce, arranged on long skewers, and then broiled over charcoal. *Teriyaki* means ‘glaze broiled’—*teri* meaning ‘shiny’ and *yaki* ‘broiled’ or ‘roasted.’ Actually any meat may be *teriyaki*,” but all have in common “the marinade of *shoyu*, sake, and sugar” (p. 75-76). Recipes include: Salmon *teriyaki*. Shrimp *teriyaki*. Stuffed beef *teriyaki* (p. 88-90). *Shoyu* marinade basting sauce (p. 93). *Sukiyaki* (with *tofu* and *shoyu*; p. 110). *Tempura* sauce (with *shoyu*, p. 121).

Fried tofu with sauce (p. 127). Pickled seaweed (with konbu and shoyu, p. 140). Sesame-shoyu dressing (p. 151). Vegetables with tofu sauce (p. 154). Cabbage with mustard-miso sauce (p. 157). Eggplant with miso sauce (p. 164). Azuki meshi (red beans and rice; p. 181). Domburi soboro (with tofu; p. 182-83). "Red bean paste (sweetened)." Ingredients: "2 cups red beans (azuki). 2 cups sugar. 2 teaspoons salt." (p. 203.) Also called "sweetened red bean paste" (p. 200; Jap. *azuki an*; p. 200-203). Yokan (with "1½ cups strained red bean paste"—*koshi-an*; p. 204). Hikishamanju (Bean jam buns with strained red bean paste; p. 207). Shiruko (Red bean soup [azuki] with rice cakes {mochi}; p. 209). Zoni (Rice cake soup, with mochi; p. 215-16). Sweetened soybeans (for New Year's, p. 217-18).

The glossary includes *abura-age*, *azuki* ("red beans"), *azuki-an* ("red bean paste"), *daizu* (soybean), *ganmodoki*, *kanten*, *konbu*, *konnyaku*, *miso* (aka miso, shiro miso), *misoshiru*, *mochi*, *mochigome*, *mochiko*, *nori*, *shiru-miso*, *shoyu*, *teriyaki*, *tofu*, *wakame*, *yakidofu*.

Note: This is the earliest English-language document seen (March 2006) that uses the term "sweetened red bean paste" to refer to sweet azuki bean paste [*azuki-an*] or that uses the term "strained red bean paste" to refer to strained azuki bean paste [*koshi-an*]. Address: 1. Head Chef, Japanese Cuisine, Japan Airlines.

1266. Teriyaki and sushi: Selected 72 recipes. 1963. Elmsford, New York: Japan Publications Trading Co. 58 p. Illust. Index. 21 cm.

• **Summary:** On title page: "Compiled by the Japanese cooking companions." The 12th printing was Jan. 1976. Contents: Rice dishes (incl. How to cook delicious sushi rice, *oshi zushi*, *norimaki*). Vermicelli dishes (incl. *tsukejiru*, *kakejiru*, *somen*, *soba*, *udon*). Soups. Broiled dishes (incl. *teriyaki*). Marinated dishes. Boiled dishes. Steamed dishes. Fried dishes. Casseroles. Tart dishes. Pickles. Confectionery. Glossary. Note: Brands promoted in the recipes throughout this book, by appearing in large boldface type, are: Kikkoman soy sauce. *Aji-no-Moto*, *Manjo mirin* (sweet rice wine).

Soy-related recipes include: *Kenchin-jiru* (with "½ tofu (bean curd) (1/3 lb)," p. 17). *Miso soup* (with 4 tbsp. bean paste (miso)" and "2 *aburage*," p. 19). *Konnyaku* (devil's tongue) and carrots with white bean curd paste dressing (with tofu, p. 29-30). *Bean curd with liquid starch* (with tofu, p. 32). *Meat and vegetables in aburage-bags* (with "2 large *aburage*, p. 34). *Bonito cooked with bean paste* (with miso, p. 35). *Steamed squid* ("stuffed with tofu and vegetables," with "1 tofu (bean curd)," p. 38-39). *Sukiyaki* (with "2/3 lb. broiled bean curd," p. 46). *Yudofu* (with "1 lb. bean curd," p. 47). *Yosenabe* (with "1/3 lb bean curd," p. 47).

The recipe titled simply "Teriyaki" (p. 22) states: "Teriyaki is fish or meat marinated in a mixture of mirin and

saké, sugar and soy sauce and roasted directly over fire. This method of roasting is most suited for oily fish, fish with thick meat, chicken and beef." The sauce contains: "2 tbsp. Kikkoman soy sauce, 2 tbsp. *Manjo mirin*, 1 oz. ginger, and sweetened vinegar (mixture of 1 tsp. vinegar, 1 tsp. sugar, and a few shakes of salt)" (p. 22-23).

The Glossary (p. 47) includes: "Aburage—fried soy bean curd. An—[azuki] bean jam [also called 'red bean jam' in index]. Miso—bean paste. Misozuke—pickles in bean paste. Tofu—bean curd. Yudofu—boiled soy bean curd."

1267. Umeda, Isao. 1963. *Shōyu* [Soy-bean sauce]. Tokyo: Sankyo Shuppan K.K. 232 p. Index. 28 cm. Final technical report. USDA P.L. 480. Project UR-A11-(40)-C. [95 ref. Jap]

• **Summary:** Contents: Part I. 1. Raw materials. 2. Treatment of raw materials. 3. Making koji. 4. *Moromi*: Fermentation (*shikomi*), methods of fermentation, mixing, ripening (*jukusei*), research on ripening, microorganisms in *moromi*. 5. Pressing out the shoyu. 6. Refining (*seisei*): Method of heat treatment (or pasteurization; *hiire*), changes during heat treatment, flavor, composition (*seibun*) of regular shoyu and of special shoyu [*tokushu*], methods of analyzing shoyu.

Part II: Special subjects. 1. Substitute raw materials: Substitutes for soybeans, for wheat, for both soybeans and wheat (copra meal, wheat bran [*fusuma*]). 2. *Tamari shoyu* and *usukuchi shoyu*: *Tamari* and soybean miso, *usukuchi shoyu*. 3. Secondary products (*fukuseihin*): *Shoyu presscake* (*shoyu kasu*), *shoyu oil*, *soybean soak water*, ? *eki*, use of koji spores. 4. *Kegs (taru)*. 5. Semi-fermented shoyu #2 (*Shinshiki nigo*): Research on its production. Address: Nōgaku Hakase, Tokyo Daigaku Nōgaku-bu, Tokyo, Japan.

1268. Ohsawa, George. 1963? *Macrobiotics: The art of longevity and rejuvenation*. Boston, Massachusetts: Eastern Technical Publications. 218 p. Undated. Index. 17 cm.

• **Summary:** Contents: Foreword: Two ways to happiness through health. Preface: Health to peace. Books by the same author (7 in French, 9 in Japanese, one in English, plus 4 periodicals). 1. *Macrobiotics and Oriental medicine*. Why I have written this book. What is the philosophy of the Far East? 2. What is my therapy? Unhappiness, illness, crime. Incurable disease. Three categories of cure. What we must not cure. *Satori*. Courage, honesty justice. Tolerance. 3. The six main conditions of health and happiness. 4. Nothing shall be impossible to you. You should have infinite freedom. You must be your own doctor. 5. Ohsawa's macrobiotic cuisine. 6. Principal foods. 7. Secondary foods (p. 72-103): *Nituke*, soup (lotus root *ankake*, *kuzu* gruel, cracknel *yuba*), pie, *gyoza* (*piroshiki*), *chapati*, *jinenjo* (wild potato, *tororo*). Egyptian beans (*chick peas*, *pois chiche*), beans (boiled soy beans with miso, *gomoku* beans, *goziru* [*gojiru*] soup, *aduki* beans), corn, *aduki* (*ogura* vermicelli), *goma-tohu* [sesame tofu], *aemono* (salads), varieties (chou

farci, buckwheat crepe), wild vegetables, seaweeds (shi kobu [shio kombu], kobu maki, fried kobu, musubi kobu, kobu soup, matsuba kobu, salmon head kobu-maki, hiziki with lotus root, hiziki nitsuke, hiziki with “age,” hiziki and soybean, gomoku hiziki, hiziki rice), wild plants (dandelion leaves or root, aozu (wild spinach), fuki), miso and tamari preparation (sauce miso, miso cream, muso [miso with tahini and orange peel], miso soup, carrot and onion au miso, vegetable au miso, oden au miso, buckwheat dango au miso, miso ae, tekka no. 1 and 2), syoyu [shoyu] (sakura rice, sauce au shoyu, sauce au sesame, bouillon au shoyu, ositasi [ohitashi], oatmeal cream, potage oatmeal, sauce bechamel a la sauce shoyu, mayonnaise a la sauce shoyu, sauce Lyonnaise; “Shoyu diluted with a little water is very good for Sasimi [Sashimi = raw fish] and fried oyster, tempura, fish Sukiyaki, tofu (vegetable cheese of soya beans), etc.”), beverages (rice tea, wheat tea, dandelion coffee, Ohsawa Coffee (Yannoh; incl. roasted and ground rice, wheat, aduki, chick peas, and chicory), Kokkoh (incl. roasted rice, glutinous rice, oatmeal, soya beans, and sesame seeds), Mu tea, syo-ban (coarse green tea with soy sauce), kuzu [cream, with shoyu] (“A good drink for everyone.”), aduki juice, radish [daikon] drink no. 1 and 2, ransyo (one beaten egg + 50% of traditional Ohsawa shoyu), soba tea, umeboshi juice, ume-syo-kuzu, special rice cream).

8. Special dishes. Desserts. 9. Yin and Yang. 10. Macrobiotic suggestions for various symptoms of disease: General suggestions (by disease), macrobiotic external treatment (tofu plaster, soya bean plaster, Dentie). 11. Specific curative dietary suggestions: Examples of diseases and their macrobiotic treatments. 12. Kokkoh: Macrobiotic food for baby. 13. On cooking. Salt. Folk medicine. Your history. Appendix: The case of Mr. E. (Cure in 10 hours). “Pro-forma death certificate of the American World Empire and its Gold Dynasty.”

Ohsawa centers and friends (p. 217-18): England (Trustin Foods, London; Mrs. R. Takagi, London), France (Centre Ignoramus, Longue Vie, Guenmai [Genmai = brown rice], Yamato, Ohsawa-France; all in Paris). Germany (Miss M. Arnoldi, Heidelberg; Dr. P. Martin, Munich; Dr. Henning, Hamburg), Italy (Miss H. Onoda, Rome; Mrs. Baccolis, Rome), Japan (Nippon Centre Ignoramus, 8 Kasumi-cho, Minato-ku, Tokyo; Shinsekai, Osaka), Brazil (Casa Longavida, Sao Paulo), Sweden (Miss Ilse Clausnitzer, Stockholm), USA (Ohsawa Foundation, 61 W. 56th St., New York; Ohsawa Foundation, P.O. Box 238, Chico, California; Chico-San, Inc., 64 Fifth Ave., Chico, California; Musubi, 61 W. 56th St., New York—Macrobiotic restaurant).

This book is undated, but it contains clues as to when it was published. On page 190 is reference to an article in *Time* magazine dated 7 March 1960 about the sad state of health in the United States. Then on page 189, Ohsawa states: “Upon my arrival in the United States last November,

I began my lectures on the philosophy and medicine of the Orient. I gave some in Los Angeles and San Francisco [California], but mostly in New York institutes and schools such as the Universalist Church, The New School for Social Research, Columbia University, New York City College, and the American Buddhist Academy. I have postponed my departure twice. But I am very happy as I have confirmed my assumption: marriage between paradoxical philosophy of the Orient and the materialistic techniques of precision of American science, which must be realized for the infinite freedom of Man and for world peace” (p. 189).

Note 1. These lines almost certainly describe Ohsawa’s first visit to the United States. He arrived in November 1959 and stayed well into 1960.

Note 2. This is the earliest document seen (Feb. 2005) that mentions “Kokkoh” (or “Kokoh”), a milk alternative containing soy, developed and used by macrobiotics.

1269. Claiborne, Craig. 1964. How to solve an Oriental eating puzzle: Learn Chinese, adopt a relative, or get to know the waiter. *New York Times*. Jan. 21. p. 20.

• **Summary:** New York City is probably home to more Chinese restaurants than any city in the world outside of China, Formosa and Hong Kong. Yet knowing what to order in a previously undiscovered Chinese restaurant remains a daunting problem. Two recent visits to the Harbin Inn (2637 Broadway, at 10th St.) proved the point. His second visit, in the company of Mrs. Grace Chu, the expert on Chinese cuisine and cookbook author, was a vastly better experience. He enjoyed “chicken splendidly complemented with crisp walnuts and flavored with hoisin sauce,...” Mrs. Chu explained the above lessons to be learned—and added the importance of ordering in advance.

1270. André, Émile. 1964. Sur l’utilisation des graines de soja dans l’alimentation humaine par les populations d’Extrême-Orient [On the dietary utilization of soya beans in the Far East]. *Oleagineux* 19(1):37-39. Jan. English-language summary p. XXVIII. [1 ref. Fre; eng]

• **Summary:** The author gives the results of his research on lipoxidase, initially inspired in early 1931 by a young Chinese student M. Kiawo Hou. He also discusses soymilk (lait de soja or téou-jou), tofu (fromage de soja or téou-fou), yuba (téou-fi), soy oil (huile de soja), soy sauce (tsing yeou), miso (miso de soja), and soy sprouts (germes de soja). The residue from making tofu and soymilk (okara) is fed to poultry and pigs. Soya oil is made by an archaic process that is very inefficient. “The residue, not perfectly separated from the oil, is consumed by the poorer classes.” Address: France.

1271. Hayashi, Shizuka. 1964. Japan team would like to see annual U.S. tour. *Soybean Digest*. Jan. p. 30.

- **Summary:** A nine-man Japanese miso team toured the USA early in the fall of 1963 at the invitation of the American Soybean Association. They hope such U.S. tours can take place each year. This first overseas mission of the Japan Miso Industrial Cooperative left Tokyo on Sept. 7 and returned Oct. 17 after a round-the-world trip. Tokubei Tanaka, president of the Association, headed the mission. Address: Managing Director, Japanese American Soybean Inst.
1272. Ito, Hiroshi; Ebine, Hideo; Kosaka, Shokichi. 1964. Shihan jôzô-yô nyûsan-kin no seijô [On the properties of lactic acid bacteria in commercially available starter for making miso and soy sauce]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 28-35. March. [14 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1273. Ito, Hiroshi; Ebine, Hideo. 1964. Miso no nyûsan-kin no kenkyû. I. Miso no nyûsan-kin no bunri [Studies on lactic acid bacteria in miso. I. Isolation of lactic acid bacteria from miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 1-8. March. [35 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1274. Ito, Hiroshi; Ebine, Hideo; Furusho, Shinji; Kosaka, Shokichi. 1964. Miso no nyûsan-kin no kenkyû. II. Miso no nyûsan-kin no bunpu [Studies on lactic acid bacteria in miso. II. Investigation of their distribution on various types of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 9-13. March. [10 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1275. Ito, Hiroshi; Ebine, Hideo. 1964. Miso no nyûsan-kin no kenkyû. III. Enterococcus Group no kin ni tsuite [Studies on lactic acid bacteria in miso. III. On the enterococcus group]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 14-22. March. [39 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1276. Ito, Hiroshi; Ebine, Hideo. 1964. [On the hardness of miso as estimated by a jelly tester]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 43-45. March. [7 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1277. Kamada, Hideomoto; Ebine, Hideo; Nakano, Masahiro. 1964. Daizu seihin no chakushoku ni kansuru kenkyû. XIV. [Browning reaction of soybean products. XIV. Browning of soaked soybeans by autoclaving (3)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 142-48. March. [9 ref. Jap; eng]
• **Summary:** Reprinted from *Nippon Shokuhinkogyo Gakkaishi* 10(2):48-52 (1963). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1278. Kamada, Hideomoto; Ebine, Hideo; Nakano, Masahiro. 1964. Daizu seihin no chakushoku ni kansuru kenkyû. XV. [Browning reaction of soybean products. XV. Browning of soaked soybeans by autoclaving (4)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 149-53. March. [3 ref. Jap; eng]
• **Summary:** Reprinted from *Nippon Shokuhinkogyo Gakkaishi* 10(2):53-56 (1963). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1279. Kamada, Hideomoto; Ebine, Hideo; Nakano, Masahiro. 1964. Daizu seihin no chakushoku ni kansuru kenkyû. XVI. [Browning reaction of soybean products. XVI. Browning of bottled soy sauce during storage]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 154-57. March. [8 ref. Jap; eng]
• **Summary:** The color of pasteurized soy sauce was relatively stable compared with that of raw (unpasteurized) soy sauce, and it was protected from browning at 38°C for 1 month by bottling and storing in an oxygen-free environment.
Bottled soy sauce can be prevented from browning by storing it at a temperature below 20°C [68°F, or by refrigerating it].
Reprinted from *Nippon Shokuhinkogyo Gakkaishi* 10(3):99-101 (1963). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1280. Nakano, Masahiro; Ohta, Teruo. 1964. Shihan miso yô tane kôji no kinkabu ni kansuru kenkyû [On the strains of commercially available "tane-koji" (koji starter) for making miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 60-63. March. [Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.
1281. Ohta, Teruo; Ebine, H.; Nakano, M. 1964. Tenpe (tempeh) ni kansuru kenkyû. I. Indonesia-san tenpe funmatsu no hinshitsu to seijô ni tsuite [Study on tempeh. I. On the property of tempeh powder made in Indonesia].

Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute) No. 18. p. 67-69. March. [4 ref. Jap; eng]

• **Summary:** Soybeans were fermented with *Rhizopus oryzae* for 60 hours at 30°C, then vacuum dried and ground to a powder. The solubility of protein and the rate of amino-nitrogen to total-nitrogen were 20% and 2% respectively, indicating that protein hydrolysis slightly exceeded that of koji-beans, but was far less than that of natto.

Peroxide value of fat and oil in tempeh stored for 3 months at room temperature was only 1.3 M.E./kg, whereas that of cooked and dried soybean powder and that of natto powder stored under the same conditions were 71 M.E./kg and 38 M.E./kg respectively. This fact shows that tempeh has antioxidative property comparable to that of miso. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1282. Ohta, Teruo; Ebine, H.; Nakano, M.; Hieda, H.; Sasaki, H. 1964. Nattô-kin o riyô suru daizu hakkô shokuhin ni kansuru kenkyû. II. Chûkan seizô shiken to niji kakôhin no shikô chôsa [Manufacturing new-type fermented soybean food product employing *Bacillus natto*. II. Manufacturing at a pilot plant and investigation of the acceptability of second generation products]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 18. p. 53-59. March. [2 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1283. Komiya, Akira. 1964. The shoyu industry in Japan. *Soybean Digest*. May. p. 43-44.

• **Summary:** Table 1 (which does not include data from farm villages) shows the average yearly expenses for seasonings per household in Japan: 1. Refined sugar 19.7% of total expenses. 2. Shoyu 18.3%. 3. Miso 14.3%. 4. Luxury items 13.1%. 5. Edible oils 9.4%. 10. Margarine 2.3%. 11. Salt 2.0%.

Table 2 shows the quantity and value of shoyu produced in Japan from 1958 to 1962 (according to 3 different sets of data). According to the Japan Shoyu Association, the amount has increased from 1,117,800 kl in 1958 to 1,160,750 kl in 1962, an increase of 4%.

Shoyu has been used daily as a seasoning in Japanese for 800 years [i.e. since about 1164]. Five reasons are given to explain why it is “now becoming a daily necessity.” Foreigners like to use shoyu for barbecue and Sukiyaki. Address: Managing Director, Japan Shoyu Assoc.

1284. Norin Suisan-sho, Nosan Engei Kyoku, Hatasaku Shinko-ka. 1964. Daizu ni kansuru shiryô [Statistics concerning soybeans]. Tokyo, Japan. 26 cm. [Jap]

• **Summary:** This yearly report, published by Japan’s Ministry of Agriculture, Forestry, and Fisheries (MAFF), is

packed with detailed statistics on soybean production, trade, and utilization in Japan. Address: Tokyo, Japan.

1285. *Soybean Digest*. 1964. China promotes soybean trade in Japan. July. p. 29.

• **Summary:** “For the first time since 1955, Mainland China is holding trade fairs in Japan to promote soybeans and other farm products.” Chinese soybeans have a lower oil content than American soybeans, and sell for about \$10/ton less. Through this year in Japan, they have been used mostly in the production of miso.

1286. Smith, A.K. 1964. The Mount Fuji meeting. An international symposium on oilseed protein foods. *Soybean Digest*. Aug. p. 18-20.

• **Summary:** The symposium, sponsored by the International Institute of Food Technology, was held on May 11-15 at the Mt. Fuji Hotel, Lake Yamanaka, Japan. “The 85 technologists participating in the program represented 20 countries and included 30 from Japan and 20 from the United States. An additional 26 technical observers represented the Japanese food industry.” “The Mount Fuji symposium was a historic occasion for the advancement of oilseed protein foods, being the first time an international conference was devoted solely to this subject.”

“Dr. Y. Sakurai of Tokyo University and George F. Stewart of the University of California, Davis, were co-chairman for the meeting. Dr. T.M. Anson, assisted by others, developed the program. Dr. Masahiro Nakano was chairman of a committee to collect and display oilseed protein foods.”

“Soybeans, peanuts, cottonseed, sesame, and coconut were the five oilseeds included in the program as sources of food proteins. Because of their long history and extensive use for food, soybeans were the topics of a major part of the papers and discussion.”

“Among the newer developments in the Orient, K.S. Lo of Hong Kong reported on his successful commercial operation in the daily production of 24,000 cases of soybean milk in his two plants. His milk is made from well-washed and dehulled soybeans. It contains about 3% protein, 2-3% fat, and 5-7% carbohydrates, with added vitamins and calcium. Mr. Lo’s methods for marketing soymilk are unique; he is also a large dealer in bottled soft drinks, and he markets soy milk as a soft drink. His milk competes with soft drinks rather than with other forms of milk or other health foods. Regardless of his method of marketing, he feels that the product is serving an important nutritional function in the Hong Kong area.” Note: Vitasoy is once again being fortified with vitamins and calcium.

Dr. Tokuji Watanabe of the Food Research Institute reported on new ways of making tofu, such as “packed or bagged tofu” which is increasing in popularity. The soymilk is coagulated with calcium sulfate inside a polyethylene or

vinylidene chloride plastic bag followed by heating in a water bath. This new process saves time and labor. Several plants are now producing 20,000 bags per day. Tofu is now also being freshly prepared in the home from spray-dried soy milk, coagulated with calcium. "More than 285,000 metric tons of soybeans and 65,000 metric tons of soybean meal are consumed annually for making fresh tofu in Japan, and because of low cost and high food quality, its consumption is said to be increasing.

Concerning miso, koji is now being made by a continuous method in 20-inch deep metal trays. Miso soup is now sold in a dried form. Shoyu production consumes 250,000 metric tons of soybeans of the equivalent as meal.

"The use of soy flour and grits in the United States for edible purposes was estimated at 200 million pounds and in England at 40 million pounds. The largest use of soy flour in the United States was estimated at 50 million pounds for bread and other baked products. In England, most soy flour is the full fat, enzymatic active type and is used at about 0.75% for improving color and flavor of baked goods."

"While isolated soybean protein for industrial uses has been produced since 1937, the production for food protein dates only from 1959. The production of industrial protein is carried on by two U.S. producers and annual production was estimated to be in the range of 40-50 million pounds. Four U.S. companies were reported to be producing or engaged in extensive research on isolated protein for food uses. The newest to be manufactured is referred to as a protein concentrate. It is prepared by washing soy flakes either with 80% alcohol or with water at the isoelectric point of the protein (pH 4.5). The concentrates must contain 70% protein whereas the isolate is 95% or more. The largest use of the isolate and concentrate is in comminuted or ground meat products, also referred to as sausage-type meats. Soy protein concentrate can be legally used in sausage-type meats up to 3.5% of the finished product." Address: NRRL, Peoria, Illinois.

1287. Hardjo, Suhadi. 1964. Pengolahan dan pengawetan kedelai untuk bahan makanan manusia [Soybean processing and preservation for human consumption]. Paper presented at Seminar Kedelai (Soybean Seminar, Rapat Kerdja Kedelai). 14 p. Held 28-30 Sept. 1964 at Bogor, Indonesia. [Ind]*

• **Summary:** Describes several methods of processing and preserving soybeans in Indonesia, including the production of tempeh, tofu (tahu), soy sauce (kecap), tauco (soybean paste), koji, and soybean flour.

Note: This is the earliest document seen (March. 2009) uses the word "tauco" (spelled in that way) to refer to Indonesian-style miso.

1288. Kobatake, Yoshiki; Matsuno, N.; Tamura, E. 1964. Daizu kakô shokuhin no tanpakushitsu no ei-yô-ka

[Nutritional value of protein in Japanese soybean products]. *Eiyogaku Zasshi (Japanese J. of Nutrition)* 22(5):173-77. Sept. [7 ref. Jap]

• **Summary:** The Biological Value of tofu was 68.5, and dried-frozen tofu (kori-dofu) was 69.1. Both values indicate high nutritional quality. Even higher protein quality was observed in okara, a by-product of tofu. Its Biological Value was 84.9, though its absorption rate was 78.4%. The value for casein was 80.1, for salt-free miso 73.2, for low-salt miso 70.7, and for freeze-dried low-salt miso 60.5. Address: Division of Biochemistry of Nutrition, National Institute of Nutrition.

1289. *Foreign Agriculture*. 1964. Japan now using U.S. soybeans in food. 2(46):7. Nov. 16.

• **Summary:** More than 10% of the nearly 49 million bushels of U.S. soybeans exported to Japan during the 1963 marketing year went into the production of three staple foods—shoyu, tofu, and miso. Until 6 years ago, Japan imported no soybeans from the U.S. for food manufacture—all U.S. imports were processed into oil and meal.

1290. **Product Name:** [Kikko Mensi—Fermented Whole Soybean Seasoning].

Foreign Name: Mensi Kikko.

Manufacturer's Name: Fabrica de Siyau Kikko Sociedad de Responsabilidad Limitada.

Manufacturer's Address: Av. Colombia 171, Pueblo Libre, Lima, Peru. Phone: 32-3754.

Date of Introduction: 1964.

How Stored: Shelf stable.

New Product—Documentation: Company history form filled out by Marco Kamego, a present owner of Kikko Corporation S.A. 1997. Dec. 29. This product is similar to soybean miso.

1291. Hesseltine, C.W. 1964. Fungi and fermented foods (Abstract). *Abstracts of the 10th International Botanical Congress*. p. 55-56.

• **Summary:** "In the Western World, the least understood field of industrial mycology is the nonalcoholic food fermentations." For the last 5 years, the author's laboratory has been investigating miso and tempeh. The 5 objectives of the research are outlined. Address: NRRL, Peoria, Illinois.

1292. Sakurai, K. 1964. The role and significance of soy bean foods in Japan. University of Tokyo. Unpublished manuscript. *

Address: Tokyo, Japan.

1293. Akizuki, Tatsuichiro. 1964. Taishitsu to shokumotsu: Kenkô e no michi [Physical constitution and food: The path to health]. Nagasaki: Published by the author. 40 p. 22 cm. [Jap]

• **Summary:** Contents: Introduction. The medical science of one's physical constitution. One's physical constitution. Foods. Nutrition. Food products. Miso. Components of miso. Protein. Fat. Minerals. Bacteria. Medical considerations. Conclusion.

Dr. Akizuki, director of the Saint Francis Hospital in Nagasaki, was born with a congenitally weak constitution, and has devoted his career to researching the use of food as preventive medicine. He has placed special emphasis on a holistic (rather than symptomatic) approach to healing, and on traditional natural foods native to Japan. "I feel that miso soup is the most essential part of a person's diet... I have found that, with very few exceptions, families which make a practice of serving miso soup daily are almost never sick... By enjoying miso soup each day, your constitution will gradually improve and you will develop resistance to disease. I believe that miso belongs to the highest class of medicines, those which help prevent disease and strengthen the body through continued usage... Some people speak of miso as a condiment, but miso brings out the flavor and nutritional value in all foods and helps the body to digest and assimilate whatever we eat... I use and have deep respect for modern medicines such as antibiotics and modern surgical techniques, yet they must only be employed when absolutely necessary. Of prime importance is the development of a strong constitution through proper eating. The basic condition of a person's constitution determines whether or not he will be only mildly and temporarily affected by diseases, or be seriously and chronically affected."

In 1945, when the atomic bomb fell on Nagasaki, Dr. Akizuki's hospital—located only one mile from the epicenter of the blast—was left in ruins. Fortunately, he and his nurses and co-workers were not in the building and were uninjured. Throughout the following 2 years, though, Dr. Akizuki and his staff worked daily in prolonged close contact with fallout victims in areas of Nagasaki which were heavily damaged and highly radioactive. Nevertheless, neither he nor his associates suffered from the usual and expected effects of radiation. Dr. Akizuki was extremely interested in this phenomenon, which he hypothesized may well have been due to the fact that he and his staff had been drinking miso soup regularly. But he felt that only a thorough scientific study of the phenomenon could provide the full answer.

One might ask, "Why did Dr. Akizuki wait 17 years to write this book?" Dr. Hideo Ebine (10/89) says, "I think he was very busy even after the war, taking care of many atomic bomb survivors and ordinary patients as a clinician, reconstructing the destroyed hospital, and writing the book *Nagasaki Genbakuki* (Diary of the Nagasaki Atomic Explosion), and so on. Dr. Akizuki is not a typical western type physician. His philosophy somewhat resembles that of macrobiotics, based on the use of food and diet to overcome

disease. He examined the results of his treatment for 30 working staff of his hospital affected by radiation, and many patients who suffered directly from the atomic explosion before his confidence in the results of his treatment was obtained." Note: An abridged, undated edition, edited by Kawamura Wataru and titled *Taishitsu wa Shokumotsu de* [Your physical constitution depends on what you eat] was published by the Japanese National Miso Association. Address: Saint Francis Hospital, Nagasaki.

1294. Carletti, Francesco. 1964. My voyage around the world. Translation from the Italian [of *Ragionamenti*, 1594-1606] by Herbert Weinstock. New York, NY: Pantheon Books. Div. of Random House. xv + 270 p. See p. 110. [1 ref]

• **Summary:** This is the English-language translation of the 16th century Florentine merchant Carletti (lived 1573?-1636). In the section titled "Second Account: The East Indies" (p. 93+), in the chapter titled "First chronicle of the East Indies" he states (p. 99) that he arrived in Japan in June 1597 at Nagasaki. On page 110 he discusses rice miso, which he calls "*misol*." For details see the 1606 entry for Francesco Carletti. Address: Florence, Italy.

1295. Japan Dietetic Assoc. Corp. (JDAC). 1964. [Standard composition of Japanese foods]. Tokyo: Daiichi Shuppan K.K. 124 p. [Jap; Eng]

• **Summary:** The basic source of information on the nutritional composition of all Japanese foods.

1296. Nagasawa, T.; Tamura, T.; Fujiyama, R.; Kawakami, K. 1964. Miso ni tenka shita bitamin A ryokuka no shôchô to sono misoshiru-chû no anteisei ni tsuite [Potency of vitamin A palmitate added to home-made miso (soybean paste) and cooked miso soup]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 17(3):185-87. [Jap]

1297. Nichols, Teal. ed. 1964. Zen cookery. Chico, California: The Ohsawa Foundation. 83 p. Index. 22 cm. A second edition appeared in 1965.

• **Summary:** This is the first macrobiotic cookbook written by an American, and its influence was profound.

"Acknowledgements: Our heartfelt gratitude goes to Lima Ohsawa, the foremost authority on Macrobiotic Cookery, without whose patient assistance and teaching this book would not have been possible. Many of the recipes appearing in Zen Cookery are from her collection in an earlier edition of Zen Macrobiotics. The Editor wishes further to thank the following people for recipes, suggestions, and invaluable comments: Joanne Hirsh, Dorothy Salant, Nina Bauman, Cornelia Aihara, Penny Smith, Shayne Oles, Betty Kennedy, and Jane Andrews."

“Zen Cookery is a collection of recipes gleaned from the files of many people, all of whom have adjusted their salt intake to suit their own needs. Their recipes reflect this.”

Contents: 1. Grains. 2. Noodles. 3. Vegetables. 4. Soups. 5. Sauces. 6. Salads. 7. Inspirations from around the world. 8. Special dishes. 9. Miso soy bean paste. 10. Tamari soy sauce. 11. Breads. 12. Pancakes and crepes. 13. Pie doughs. 14. Desserts. 15. Beverages.

Note: This is the earliest English-language document seen (July 2006) that contains the term “tamari soy sauce.” It is also the earliest English-language cook book seen that contains the word “tamari” or the term “tamari soy sauce.”

Each recipe is numbered. Recipes mentioning soy in recipe name (and a few other recipes introducing foods new to the USA): 2. Rice with tamari soy sauce. 3. Rice with aduki beans. 4. Rice & aduki pudding. 7. Sesame rice. 9. Rice with chick peas (garbanzo). 21-28. Buckwheat recipes. 34. Bulgur. 48. Buckwheat noodles in soup (Soba with kombu). 50. Buckwheat noodles with fried bean curds [tofu]. 54. Buckwheat noodles with miso sauce. 55-56. Buckwheat noodles in kuzu sauce. 61. Udon with aduki. 62. Carrot sesame nituke [nitsuke]. 75. Scallion nituke with miso (soybean paste). 76. Carrot and onion nituke with miso. 77. Onion nituke with miso. 78. Vegetable miso stew. 79. Boiled pumpkin with miso. 80. Vegetable sauces with kuzu arrowroot (and tamari soy sauce).

81. Vegetables with tamari soy sauce and tahini. 98. Jinenjo (5 recipes). 101. Miso-vegetable relish. 102. Aduki beans, black [soy] beans, chick peas. 105. Baked chick peas. 106. Buckwheat-aduki pancakes. 107. Udon with aduki beans. 108. Chestnut-aduki gelatine. 109. Chick pea party dip (with tahini and tamari). 110-118. Sea vegetables (kombu, nori, hiziki, wakame, most with tamari). 119. Clear broth (with tamari). 122. Tamari-vegetable broth. or stock. 123. Miso soup (2 types). 124. Creamed miso soup. 125. Root vegetable soup with miso. 131. Soybean soup. 134. Wakame soup (with miso). 149. Sesame sauce. 150. Miso sauce. 151. Miso salad dressing. 152. Thick tamari soy sauce. 153. Tahini tamari soy sauce. 154. Onion tahini sauce (with tamari). 172. Wakame salad.

189. Clam miso. 190. Scallop miso-lemon. 203 Miso spread [with tahini]. 204. Miso sauce [with tahini and orange rind]. 205. Sauce for vegetables [with black sesame and miso]. 206. Scallion miso. 207. Miso salad dressing. 208. Miso-vegetable relish. 209. Miso soup. 210. Udon with miso sauce. 211. Rice porridge with miso. 212. Deep fried miso balls. 213. Carrots and onions miso. 214. Vegetables miso. 215. Tekka (2 types). 216. Tea with tamari soy sauce. 217. Tamari broth. 218. Stringbeans. 219. Dried radish (daikon). 220. Shredded sea vegetables (hiziki). 221. Thick tamari soy sauce. 222. Tahini-tamari sauce. 223. Vegetables with tahini-tamari soy sauce. 234. Aduki muffins. 238. Miso spread (for sandwiches). 239. Tahini-tamari spread. 246.

Buckwheat aduki pancakes. 272. Aduki pudding. 273. Chestnut-aduki gelatine. 274. Kantan jello (with agar).

291. Grain Milk (Kokkoh [Kokoh]; a finely ground combination of roasted rice, glutinous rice, oatmeal, soybeans, and sesame seeds). 294. Tea with tamari soy sauce (syo-ban).

Note 1. This is the earliest document seen (Feb. 2005) that mentions Kokkoh (or Kokoh), a grain milk introduced by macrobiotics.

Note 2. Tofu, amazake, and seitan are not mentioned in this book. 287 is Ohsawa Coffee (Yannoh) and 288 is Dandelion Coffee.

Note 3. This is the earliest document seen (June 2000) that mentions the use of miso in a salad dressing (Nos. 151 and 207).

Note 4. In 1985, when writing a revised edition of this book titled *The First Macrobiotic Cookbook*, Herman Aihara wrote that this 1964 edition, published by the Ohsawa Foundation of Chico, California, was first the edition of the various subsequent and very influential books with this title.

Note 5. This is the earliest document seen concerning Herman or Cornelia Aihara and macrobiotics (or soyfoods).

Note 5. Along with soyfoods, this cookbook (and its many successors) also introduced numerous other basic Japanese foods such as aduki [azuki] beans (3-4, 102, 106-08, 234, 272-73), sea vegetables of all types, and soba. Address: Chico, California.

1298. Ohsawa, George. 1964. *Le Zen macrobiotique; ou, L'art du rajeunissement et de la longévité* [Zen macrobiotics, or the art of rejuvenation and longevity]. Paris: Librairie Philosophique J. Vrin. 212 p. [Fre]*

• **Summary:** The author (lived 1893-1966) lists his name on the title page as “Georges Ohsawa (Nyoiit Sakurazawa).”

1299. Takagi, Heiji; Fujiyama, R.; Nagasawa, T. 1964. *Nōka jika jōzō miso no hinshitsu ni kansuru kenkyū*. III. Hissu amino-san kōsei ni tsuite [Studies on the qualities of home-made miso (soybean paste) used by farm families. III. On the essential amino acid composition]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 17(3):181-84. [8 ref. Jap; eng]

1300. Takagi, Heiji; Fujiyama, R.; Nagasawa, T. 1964. *Nōka jika jōzō miso no hinshitsu ni kansuru kenkyū*. II. Chiramin no ganryō ni tsuite [Studies on the qualities of homemade miso (soybean paste) used by farm families. II. On the tyramine content]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 17(2):123-25. [3 ref. Jap; eng]

1301. Watanabe, Minoru. 1964. *Nihon shokuseikatsu-shi* [History of Japanese food culture]. Tokyo: Kichikawa Kobunkan. 330 p. Illust. Index. 21 cm. [Jap]

• **Summary:** Amazake (p. 43), tofu (p. 3, 129), natto (p. 147), miso (p. 3, 88, 102, 130, 149, 203-05, 241, 288, 301, 314), shoyu (3, 149, 202, 241, 301).

Amazake: There were two types of fermented foods in Japan prior to the 8th century A.D.: The sake line and the hishio (*chiang*) line. The sake line used mainly rice as an ingredient but barley (*mugi*), broomcorn millet (*kibi*), glutinous mountain yam (*yama imo*), and fruits were also used. The hishio line led to miso and soy sauce. Both the early Japanese classics *Kojiki* (A.D. 712) and the *Nihon Shoki* (A.D. 720) mention sake. From burial mound tombs created during the period A.D. 300 to 600 have been excavated groups of stone burial objects which are thought to be sake making implements. The earliest sake was made from glutinous rice (*mochi-gome*); it was quite sweet, thick, and glutinous/sticky, and was called “one night sake” (*hitoyo-zake*). It was thick like today’s amazake base before it has been diluted, and was probably served on tree leaves and eaten, rather than being drunk as a beverage. After the arrival of foreigners in Japan bringing brewing methods, regular rice started to be used to make drinks with a high alcohol content. Salty and/or pungent condiments (*karami*) were also added. Japanese cedar or cryptomeria (*sugi*) or bamboo leaves may have been used as preservatives. All of these beverages were thick grogs, not clarified sake. Moreover, unlike in later eras, they were not used to add color/pleasure to people’s daily life. Rather they were used mainly at religious festivals and ceremonies.

1302. *Daizu ni Kansuru Shiryo (Statistics on Soybeans and Soyfoods in Japan)*, 1964—. Serial/periodical. Tokyo: Norin-sho, Engei Kyoku, Tokusan-ka (Japan Dep. of Agriculture, Forestry, and Fisheries). Annual. 26 cm. [30 ref. Jap]

• **Summary:** This annual publication of the Ministry of Agriculture, all in Japanese, is the single best unified source of statistical information on soybeans and soyfoods in Japan. By the 1970s the name of the publishing organization had changed to Norin Suisan-sho, Nosan Engei Kyoku, Hatasaku Shinkoka. The average length of a volume was 146 pages in the 1960s, increasing to 170 pages in the 1980s.

Table of Contents for the 1984 Edition reads: I. Finding where soybeans fit (in Japanese agriculture) (p. 1). 1. Changes in the size of area of the cultivated fields (p. 1). 2. Changes in usage of land (p. 2). 3. Changes in the rate of usage of cultivated fields (p. 6). 4. Converting rice fields to other crops (p. 7).

II. Production trends (p. 14). 1. Results of production (p. 14). 2. Present status of management (p. 28).

III. Grant money system (p. 56). 1. Outline of grant money system for soybeans and rapeseeds (p. 56). 2. Changes in the standard price of soybeans and the amount of soybeans subject to the grant money (p. 58). 3. Results of

the regulated sales of soybeans (p. 59). 4. Monthly changes in the price of soybeans (p. 60). 5. Standards of inspection of soybeans (p. 62). 6. The present status of inspecting and ranking soybeans (p. 66).

IV. Outlines of the budget of the countermeasure of promoting the production of soybeans (p. 70). 1. Changes in the budget (p. 70). 2. Outline of budget of soy-related items in 1984 (p. 72). 3. The present status of enforcement of the enterprises (p. 82).

V. Varieties of soybeans (p. 86). 1. Table of the soybean varieties which were registered as Norin Bango (agriculture & forestry number) (p. 86). 2. Table listing the main existing varieties (p. 96). 3. Table of the varieties which each prefecture recommends (p. 102). 4. The status of planting different varieties of soybeans (p. 104).

VI. The present status of management techniques of cultivation (p. 109). 1. The season of soybeans in the main producing prefectures (p. 109). 2. Outline of the national association of promoting the improvement of management of beans in 1983 (p. 112).

VII. Trend of demand for soybeans (p. 132). 1. Changes in the demand for and the rate of self supply of soybeans (p. 132). 2. The status of demand for soybeans by year (p. 133). 3. Changes in the amount of soybeans imported for food use and the amount of soybeans used in various items (p. 133). 4. The results of production, shipping, and the usage of raw materials of miso and shoyu (p. 136). 5. The status of consumption of processed soybean products (p. 140). 6. Nutrients of soybeans and soybean products (= soyfoods) (p. 144). 7. Long term view (p. 150). 8. Changes in the rate of making soybeans as merchandise (p. 150). 9. The status of the production of soybeans in main producing countries (p. 151). 10. Changes in the amount of soybean production in the USA (p. 152). 11. The amount and the price of exported soybeans of main exporting countries, by countries (p. 153). 12. The amount and the price of imported soybeans of the main importing countries, by countries (p. 154). 13. The Japanese import situation for soybeans, by years and countries (p. 156). 14. The imported amounts, exported amounts, and the domestic prices by years (p. 162). 15. Changes in the soybean tax (p. 164).

1303. Matsumoto, Kenji. 1965. Miso shōyu no aji [The flavor of miso and shoyu]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 60(1):30-33. Jan. [Jap] Address: Nihon Jozo Kyokai.

1304. Yoshikawa, Seiji. 1965. Miso no aji [The flavor of miso]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 60(1):34-37. Jan. [Jap] Address: Norinsho Shokuryo Kenkyujo.

1305. Wolf, Walter J. 1965. Chemistry of soybean proteins. Paper presented at National Dairy Products Corp.,

Glenview, Illinois. 17 p. Feb. 4. Typed, without signature (carbon copy).

• **Summary:** This lecture is a “broad review of current knowledge with emphasis on chemical properties which may be important in food properties of soy proteins.” It included 20 slides, each described briefly in a “List of slides” at the end of the paper.

Correspondence in connection with this lecture shows: (1) That Dr. Wolf and Dr. H.L. Wang of the NRRL were each invited by Dr. Hugh Mottern (Manager, Long Range Planning) to present papers on Feb. 4; expenses will be paid by NDPC—which appears to be related to Kraft Foods. The title of Dr. Wang’s talk will be “Fermented Soybean Foods” and she will discuss primarily [fermented] soybean cheese, tempeh, and miso. Initially Mottern asked Dr. Wolf to give a seminar on full-fat soy flour, but that was later broadened to soy proteins. NDPC is currently having a series of seminars on soybeans and soybean products (8, 11, and 18 Jan. 1965; 1 Feb. 1965). Address: Northern Regional Research Lab., Peoria, Illinois.

1306. Ilany-Feigenbaum, Jacob. 1965. The proteolytic enzymes of Japanese koji and Taka-diastrase. *J. of Food Science* 30(1):148-50. Jan/Feb. [10 ref]

• **Summary:** Israeli research on reduction of time for fermentation of Japanese miso or Israeli miso-type products. Address: Dep. of Biochemistry, Bar-Ilan Univ., Ramat-Gan, Israel.

1307. *Chemurgic Digest*. 1965. Special fermentations to produce new food products. March. p. 2.

• **Summary:** Discusses the work of the Northern Regional Research Laboratory with tempeh and miso. Dr. C.W. Hesseltine is in charge of the Laboratory’s culture collection, one of the largest, most complete, and most industrially important in the world. It contains more than 8,000 microorganisms, all kept under refrigeration.

1308. Ebine, Hideo; Shimokawa, Katsuyoshi; Katayanagi, Teruko. 1965. Sodium aluminum chloride no miso henshoku bōshi kōka [Application of sodium-aluminum chloride as anti-browning reagent of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 154-55. March. [2 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1309. Ebine, Hideo; Shimokawa, Katsuyoshi; Katayanagi, Teruko. 1965. Tokoferōru no miso henshoku bōshi kōka [Application of tocopherols as anti-browning reagent of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 151-53. March. [7 ref. Jap; eng]

• **Summary:** Tocopherols (prepared from soybean oil foots as a by-product of soybean oil production) are very effective anti-browning agents. Moreover, their addition does not lower the overall quality of the miso Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1310. Ebine, Hideo; Hamazaki, Sakio. 1965. 5'-ribonukureochido no miso e no tenka [Improvement of the flavor of miso by 5'-ribonucleotides]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 147-50. March. [12 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1311. Ito, Hiroshi; Ebine, Hideo; Nakano, Masahiro. 1965. Kōtanpaku teien miso. I. Seizō shori hōhō [High-protein, low-salt miso. I. Investigation of the manufacturing process]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 127-36. March. [8 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1312. Ito, Hiroshi; Ebine, Hideo. 1965. Miso no nyūsan-kin no kenkyū. IV. *Pediococcus* group [Studies on lactic acid bacteria in miso. IV. On the *Pediococcus* group]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 89-102. March. [20 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1313. Ito, Hiroshi; Ebine, Hideo. 1965. Miso no nyūsan-kin no kenkyū. V. Sanhai miso ni tsuite [Studies on lactic acid bacteria in miso. V. On the acidification by lactic acid bacteria]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 103-09. March. [14 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1314. Ito, Hiroshi; Ebine, H.; Esuka, Katsuki; Togano, Yasunori. 1965. Miso no nyūsan-kin no kenkyū. VI. Kansō nyūsan-kin oyobi kōbo o fukumu tane kōji ni yoru miso no jōzō shiken [Studies on lactic acid bacteria in miso. VI. Miso manufacturing employing “tane koji” (koji starter) including freeze-dried *Pediococcus soyae* and *Streptococcus faecalis*]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 110-20. March. [10 ref. Jap; eng]

• **Summary:** Note: This is the earliest document seen (Jan. 2009) which mentions that *Streptococcus* bacteria are involved in the miso fermentation. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1315. Ito, Hiroshi; Ebine, Hideo. 1965. Miso no nyûsan-kin no kenkyû. VII. Aruginin no bunkai [Studies on lactic acid bacteria in miso. VII. Hydrolysis of argenine]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 121-26. March. [13 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1316. Ito, Hiroshi; Ebine, Hideo; Ramachandra Rao, T.N. 1965. [Manufacturing miso that is high in protein or low in salt. I. Investigation of the manufacturing process]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 137-40. March. [1 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan; 2. Central Food Technological Institute (CFTRI), Mysore, India.

1317. Mogi, Masatoshi; Iguchi, N. 1965. Showa 39 nendo no shôyu, miso no kenkyû gyôseki [Accomplishments of shoyu and miso research during 1964 (Including HVP semi-fermented soy sauce and other related substances)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 60(3):218-39. March. [440 ref. Jap] Address: Noda Sangyo Kagaku Kenkyusho.

1318. Ohta, Teruo; Kamada, Hidemoto; Ebine, Hideo; Ramachandra Rao, T.N. 1965. Indo-san mame rui o genryô to suru hakkô shokuhin no seizô. II. Teishokuen miso no seizô [Manufacturing fermented foods from Indian pulses. II. Manufacturing low-salt miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 19. p. 141-46. March. [5 ref. Jap; eng] • **Summary:** Seven varieties of Indian pulses were tested; Bengal gram gave the best low-salt miso. All pulses must be dehulled. The ratio of dehulled pulses to rice (which was made into koji) was 2 to 1. Address: 1-3. Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan; 4. Central Food Technological Research Inst., Mysore-2, India.

1319. *Soybean Blue Book*. 1965. Japanese American Soybean Institute. p. 10.

• **Summary:** Gives the address, name of the managing director, structure, sources of funding, purpose and goals, and major accomplishments in chronological order. The institute was formed in early 1956.

1963—"The Institute arranged for the testing of 27 U.S. soybean varieties for their suitability for production of tofu and miso by the respective associations."

1320. Abbott, J.C. 1965. Protein rich foods from oilseeds: Economic aspects. *P.A.G. News Bulletin* No. 5. p. 19-38. April. [15 ref]

• **Summary:** Table 1 lists annual consumption (in metric tons) of oilseed protein foods in some main consuming areas. Column 1: Miso, tofu, tempeh and other fermented or cooked soybean products: Mainland China 3,736,000. Japan 2,536,000. Indonesia 200,000. South Korea 160,000. Taiwan 153,000. Hong Kong 15,000. Malaya 15,000. Singapore 15,000.

Column 2: Soy milks: Singapore and Malaya 1,300 metric tons, Hong Kong 1,000.

Note: This is the earliest document seen (Sept. 2002) that contains industry or market statistics for soymilk by geographical region. Address: Chief, Marketing Branch, FAO Headquarters, Rome, Italy.

1321. Hesseltine, C.W. 1965. A millennium of fungi, food, and fermentation. *Mycologia* 57(2):149-97. March/April. [38 ref]

• **Summary:** A landmark, widely cited work on indigenous fermented foods. Interestingly, it makes no mention of amazake, or kanjang (Korean soy sauce). Contents: Tempeh. Ragi. Sufu (describes process, mentions pehtzes and the mold *Actinomyces elegans* NRRL 3104). Thamnidium (meat tenderizer and flavor enhancer from the mold *Thamnidium elegans*). Miso. Shoyu (incl. tamari. "In China, shoyu is more of the tamari type, that is, more soybeans are used and less wheat,..."). Tea fungus. Ang-Kak (p. 179-81). Advantages of fermenting foods. The future of food fermentations.

The glossary gives brief descriptions of aga-koji, akakoji, amylo process, anchu, angkak, angkhak, ang-quac, anka, ankak, arack, arak, arrack, atsumandie, awamori, bagoong, bakhar, beni-koji, benikoji, braga, brom, busa, chao, ch'au yau (Chinese name for shoyu), chee-fan (a type of Chinese cheese or sufu), chiang (Chinese equivalent of miso), chicha, Chinese cheese (sufu), Chinese red rice (angkak), chiu-chu (Chinese yeast), chiu-niang (Chinese term for koji), chou [ch'ü] (Chinese equivalent of koji), dahi, dawadawa (made from African locust bean—*Parkia filicoidea*; soy is not mentioned), dhokla, dosai, fermentation of citron, fermented fish, fermentation of maize, fermented minchin (wheat gluten), fermented soybeans ("a Chinese food prepared from small black soybeans." See A.K. Smith 1961 [soy nuggets]), fish paste, fish sauce, fish soy, fu-yu, fu-yue, fuyu (see sufu [fermented tofu] for all 3), ginger beer plant, grib, hamanatto, hon-fan [fermented tofu], hongo, hung-chu, idli, injera, jamin-bang, java yeast, jotkal, kaffir beer, kanji, katsuobushi, katyk, kefir, ketjap, kimchi, kishk, kisselo mleko, koji, kombucha (tea fungus fermentation), kome-miso, kuban, kumiss, kumys, kushik, kushuk, kvass, kwass, kyoku-shi, lao-chao, leben, lebeny, levain of khasia, levain of sikkin, lontjom, magou, mahewu, maize fermentation of the maoris, mazun, medusen tee, meen, meitauza, meju (fermented soybeans of Korea), mén, mien (Chinese yeast), mirin, mish, miso,

moromi, mugi miso, murcha, nappi, nata, natto, ngapi, nuoc-mam, nukamiso, ontjom, patis, paw tsay, peh-khak, pehtze, peujeum, peyem, poi, prahoc, pulque, raggi, ragi, ranu, red pepper sauce, red rice, red sufu, sajur asin, saraimandie, sekihan, shiro koji, shottsuru, shoyou, sho-yu, shoyu, soja japonais (shoyu), sonti (a rice beer wine of India), South African fermented corn, soy, soybean cheese [fermented tofu], soy sauce, sufu, su fu [both fermented tofu], sweet flour paste, taette, tahuli, tahuri [both “Philippine fermented soybean curd”], takuwan, tamari, tane koji, tao-cho [taotjo], taokoan [pressed or firm tofu, not fermented], tao dji (see taotjo {sic}), tao-si ([soy nuggets]; see Handbook of Philippine Agriculture. 1939. p. 132-43), tao-tjung, tao-yu, taotjo, tapej, tape ketan, tape ketella, tarhana, tea beer, tea cider, tea fungus, teekwass, teeschwamm, tempe, tempeh, tempeh bongkrek, tempeh kedele, thamnidium, thumba, tibi, tien mien chang [chiang], tojo, tokua, torani, tosufu, toyo, trassi, tsue fan, tuwak, uri, u-t-iat, wunder pilz, yen-tsai.

Note 1. This is the earliest document seen (Feb. 2007) that mentions *Actinomucor elegans* in connection with sufu [fermented tofu]. In 1966 Hesseltine describes it as the best mold for use in making this fermented food.

Note 2. This is the earliest document seen (July 2000) that mentions “mugi miso”—a type of miso made with barley koji. By the mid- to late-1960s, macrobiotic companies in the USA were importing barley miso from Japan and labeling it “Mugi Miso.”

Note: This is the earliest English-language document seen (Feb. 2007) that uses the terms “fuyu” or “fu-yue” to refer to fermented tofu.

Photos show: (0) Clifford W. Hesseltine (portrait). (1-3) *Rhizopus oligosporus* mold, used to make tempeh (3 views). (4) Skewered cubes of sufu in an incubator, with one skewer of uninoculated tofu cubes and three rows of tofu inoculated with *Actinomucor elegans* showing luxuriant growth of mold. (5) Cubes of Chinese cheese [fermented tofu] removed from brine. (6) Dilution plate of tane koji showing different types of *Aspergillus oryzae*. Address: NRRL, Peoria, Illinois.

1322. *Soybean Digest*. 1965. Expect “entirely new foods” from Asian fermentations. May. p. 26-27.

• **Summary:** One of these new foods may be a tempeh-like product made from wheat, Dr. C.W. Hesseltine, retiring president of the Mycological Society of America, told that group at its annual meeting. USDA’s Northern Utilization Research Laboratory is making a broad effort to find new outlets for American farm products. “Scientists at Peoria [Illinois] began studying the use of U.S. soybeans in foods such as Indonesian tempeh and Japanese miso more than 5 years ago. They have supported contract research on fermented foods in foreign laboratories for the past 2 years... The retiring president discussed research and

processing of six fermented foods. Among them were tempeh and miso.” A photo shows Dr. Hesseltine.

1323. Sano, S. 1965. [Production of a dry fermented soybean paste]. *Japanese Patent* 11,358. June 7. 2 p. [Jap]*

1324. *Soybean Digest*. 1965. Research leads to a new food market for soybeans. June. p. 16.

1325. *Yin Yang—The Unique Principle (Chico, California)*. 1965. Miso. 5(6):8. June. [1 ref]

• **Summary:** This magazine is the same as *The Macrobiotic Monthly* and *The Macrobiotic*. It started as *Macrobiotic News* in 1960 in New York. After being moved to Chico, California, it was renamed *Yin Yang*.

“Miso, a traditional... Contains a nutritional analysis of barley miso from S. Yamada’s *Manual of the Fermented Food Industries of Japan* (1957, Tokyo. p. 44).

Miso has long been recommended as one of the basic elements of the Macrobiotic way of eating. Individuals who use it every day have found it remarkable in health-promoting qualities—a valuable aid in instances of general weakness, anemia and iron deficiency. “Miso is a mixture of soybeans, barley, salt and water—cooked and then aged for at least eighteen months.” Address: Ohsawa Foundation, P.O. Box 238, Chico, California.

1326. Claiborne, Craig. 1965. Saga of Jim Lee: From Vienna sausage omelet to Chinese woks. *New York Times*. July 22. p. 20.

• **Summary:** His recipe for Foh opp (Chinese roast duck) calls for “¼ cup mein seen diung (yellow bean paste, available in Chinese grocery stores). ¼ cup hoi sin diung (black bean paste [hoisin sauce; hai hsien chiang], available in Chinese grocery stores)... 2 tablespoons dark soy sauce (available in Chinese grocery stores).”

His recipe for Bok sui ngui (Poached sea bass, Chinese style) calls for “1 tablespoon dark soy sauce. 1 tablespoon light soy sauce.”

A photo shows Jim Lee, a ceramist, teacher and cookbook author, standing by a wok in his kitchen.

1327. De, Sasanka S. 1965. The present state of protein-rich food development in Asia and the Far East. *J. of Nutrition and Dietetics (India)* 2(3):166-76. July. [23 ref]

• **Summary:** Gives an excellent account of soymilk production in Asia during the mid-1960s and a brief history of the FAO/WHO/UNICEF/Protein-rich food program. “The First International Conference sponsored by FAO, WHO and Josiah Macy Jr. Foundation (New York) held in Jamaica in 1953, discussed the biological, technical and pathological aspects of protein malnutrition. The next Conference on ‘Human protein requirements and their fulfillments in practice’ held in Princeton in 1955 under the

same sponsorship, gave detailed consideration to the testing of new protein rich foods before their use in child feeding was recommended.

“The Protein Advisory Group (PAG) was established by the Director-General of WHO in 1955 to ‘act on behalf of WHO in rendering advice to FAO and UNICEF on the safety and suitability for human consumption of proposed new protein-rich foods.’ The PAG... became a tripartite FAO/WHO/UNICEF Protein Advisory Group in 1961.”

Soybean milk: “In 1939, K.S. Lo established a firm known as ‘Hong Kong Soyabean Products’ to produce sterilized bottled soya milk. The two plants of the firm in Hong Kong produce 12,000 cases (24 x 7-oz. bottles per case) a day.”

Also discusses miso, natto, tempeh, full-fat soya flour, soya presscake and meal, groundnut protein isolate. Address: Regional Office for Asia and Far East, FAO, Bangkok, Thailand.

1328. Kamada, H.; Ebine, H.; Nakano, M. 1965. Natto to miso genryo toshite no daizu hinshitsu [Evaluation method of the quality of soybean employed for natto and miso manufacturing]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 60(7):620-23. July. [8 ref. Jap] Address: 1. Karepisu [Calpis] Shokuhin Kenkyujo.

1329. Kushi, Michio; Fulton, Robert E.; Blum, Cecil. eds. 1965. *Macrobiotics study report: The way of life according to the order of the universe. Vol. 1.* Cambridge, Massachusetts. East-West Institute. 41 p. 27 cm. [4 ref]
 • **Summary:** Contents: Seven principles of the order of the universe. Twelve theorems of the unifying principle (both inside front cover). Editorial, by the 3 editors. Cigarettes and cancer, by George Ohsawa (age 73), founder, world macrobiotic movement [Conclusion: smoking cures cancer]. The new discovery of the transmutation of the atom, by Michio Kushi, Director, East West Institute [he has given numerous lectures for the past 8 years in New York, Boston, Philadelphia [Pennsylvania], and Washington, DC; discusses Louis Kervran and Sanehide Komaki]. My conclusions in biological research, by Kikuo Chishima, M.D., Prof., Gifu Univ., Japan. Thoughts of man, by Michio Kushi. Love, by George Ohsawa.

What is macrobiotics?, by Roger E. Fulton, Cambridge, Massachusetts. Order of the macrobiotic diet (from No. 7 to No. -3). One week’s menu (No. 7) for health and happiness, by Aveline Kushi (p. 29-30); includes miso soup, azuki beans, bulgur with tahini sauce, and sesame rice. Sakura meshi (rice with tamari). “1. Grain: Brown rice, whole wheat, buckwheat,... azuki beans. “2. Seasoning: Sea salt, tamari (soy sauce), miso (soy bean paste), gomashio (roasted sea salt and sesame seeds mixed), kuzu, umeboshi (salted plums), sesame oil, corn oil. 3. Beverage: Grain coffee, bancha tea, mu tea, dandelion tea, etc.” Note 1. This

is a vegan menu. Note 2. This is the earliest English-language document seen (Dec. 2006) that uses the term “salted plums” to refer umeboshi salt plums.

EWI news (a chronology of events from Sept. 1964 to the present). Miraculous events [and cures]. Leprosy cured in Argentina. Testimonials. Open letter to Dr. Frederick Stare, Harvard School of Public Health, by Simone Billaudeau. George Ohsawa’s schedule (May to Aug. 1965). Literary contributions. Financial contribution and subscription. Announcement: 1965 Macrobiotic summer camp. Useful addresses: USA, Brazil, Argentina, Sweden, Belgium, France, Germany, England, Spain, Italy, India, Japan. Key CI = Centre Ignoramus. E = Editor. R = Restaurant. MC = Macrobiotic Camp. MF = Macrobiotic Foods. MFF = Macrobiotic Foods Factory. OC = Ohsawa Center. OF = Ohsawa Foundation. Classification of yin and yang (inside rear cover). Poem titled “Wind chimes” by Cecil Blum on rear cover (11 June 1965).

EWI News: 1964 Sept.—After the Macrobiotic Summer Camp on Martha’s Vineyard, Michio Kushi and his family moved from the Island to Cambridge, Mass. For the previous year, Mr. Kushi’s lectures were conducted almost every month in Boston at the Mattson Academy of Karate. George Ohsawa was also in Boston and Martha’s Vineyard in 1964. In Sept. 1964, East-West Institute was incorporated as a non-profit educational establishment. Mr. David Levin and Mr. Ramsay Wood initiated it with several others. Address: East-West Institute, 101 Walden St., Cambridge, Massachusetts.

1330. Findlay, W.P.K. 1965. Fermented foods. *British Vegetarian*. July/Aug. p. 282-83. [1 ref]

• **Summary:** In 1964 at the Botanical Congress in Edinburgh, Scotland, an American mycologist, Dr. C.W. Hesseltine, gave a fascinating account of the studies he has made of foods fermented with molds. A full account of his work has just been published in *Mycologia*. 1965. 57(2): March/April. This is a summary of that article, focusing on tempeh, sufu or Chinese cheese, miso, and shoyu or soy sauce. Address: D.Sc.

1331. **Product Name:** Mugi Miso.

Manufacturer’s Name: Infinity Foods (Importer). Made in Japan.

Manufacturer’s Address: New York.

Date of Introduction: 1965.

New Product–Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 236-37. Howard Rower’s Infinity Foods, founded in the mid-1960s, was an early macrobiotic importer of miso. By April 1966 the company was selling it to Erewhon in Boston.

Ad in East West Journal. 1971. 1(16):10. For The Infinity Co. in New York City shows an infinity symbol, within which is written: “Nothing added, nothing removed.”

The text for the ad reads: “We’ve been here since 1964, milling flour and selling Umeboshi. Now we have absolutely guaranteed organic produce. Contact us for more information: N.Y.C. 925-2082.”

1332. [Report on the present status of the miso industry]. 1965. Norinsho (Japanese Ministry of Agriculture and Forestry). [Jap]*

1333. Arimoto, Kinitaro; Sakurai, Yoshito. 1965. Food and nutrition in Japan. In: Martin S. Peterson and Donald K. Tressler, eds. 1965. *Food Technology the World Over*. Vol. II. South America, Africa and the Middle East, Asia. Westport, Connecticut: AVI Publishing Co., Inc. ix + 414 p. See p. 359-94. Illust. Index. 24 cm. [13 ref]

• **Summary:** This chapter, after the Introduction, is divided into two parts: 1, titled “Nutrition (p. 360-74)” by Arimoto, and 2, titled “Food technology” (p. 374-94)” by Yosito [Yoshito] Sakurai. In Part 1, table 110, “Food supply in Japan” includes average statistics on soybeans, miso, and shoyu in kg/year and gm/day for 1944-1948, 1961, and 1961. in kg/year for the three periods: Soybeans: 3.5, 5.4, and 5.0. Miso: 10.6, 8.1, and 7.7. Shoyu: 15.9, 13.0, and 11.1. Source: Ministry of Agriculture and Forestry, Balance Sheets. Surprisingly, supplies were greater for each during and immediately after World War II than in the early 1960s.

Table 116, “Intake of foods classified into food groups and type of work (gm per capita per day), 1963” gives statistics for the entire nation, agricultural households, and non-agricultural households, as follows: Soybeans: 1.3, 1.7, 1.0. Miso: 25.1, 30.1, 22.5. Soybean products: 37.3, 29.9, 41.5. Seaweeds: 4.6, 4.2, 4.7. Shoyu: 26.2, 30.0, 23.6. Soybean products as a source of high quality protein are discussed (p. 366).

Part 2 begins with a section on “Rice” (p. 374-77) which notes that rice supplies half the calories in the Japanese diet. Japan produces all of the rice it needs—about 13 million tons. Imported rice (about 150,000 tons) is used only as a raw material in confections and miso. Japan imports most of its soybean from the USA and China, and these soybeans are processed by characteristically Japanese methods to make tofu, miso, and shoyu (p. 377).

Animal husbandry is not widely practiced in Japan, largely because the land is hilly with few grazing lands. Thus most beef, pork, and chicken are imported. The production of cow’s milk is gradually increasing; it is now 27 million hectoliters.

Packaging of foods has changed greatly during the past decade. Packaged foods are now common. Shoyu and miso, once sold by the measure, are now sold in bottles and plastic bags, respectively. Table 128 (p. 378), titled “Supply of raw materials and food consumption of their products in 1959 (Japan)” shows the following for soybeans (in metric tons = tonnes). Soybeans—Domestic supply: 410,000 tonnes.

Imports: 1,000,000 tonnes. Miso consumption: 850,000 tonnes. Shoyu: 1,280,000 tonnes. Tofu: 640,000 tonnes. Aburaage 170,000 tonnes. Natto 60,000 tonnes. Meat 330,000 tonnes. Fishery products: 6,170,000 tonnes.

The section titled “Soybeans” (p. 380-86) has the following contents: Introduction. Miso, shoyu, natto, tofu, koritofu (dried tofu) [dried-frozen tofu], yuba. Photos show: (1) Shoyu brewing in tanks in a large factory. (2) Pressing and washing of tofu in koritofu manufacture in a large, modern factory. (3) Aerial view of a large, modern plant for koritofu production. (4) The thawing operation in making koritofu. (5) The drying operation in making koritofu. Address: 1. PhD, Director, National Inst. of Nutrition, Tokyo, Japan; 2. PhD, Prof., Dep. of Agricultural Chemistry, Faculty of Agriculture, Tokyo Univ., Tokyo, Japan.

1334. Brandemuhl, William. 1965. Soybean utilization in Japan. San Francisco, California. xxii + 478 p. Unpublished manuscript. 28 cm. [189 ref]

• **Summary:** A superb, in-depth, pioneering study, based on extensive original field research in Japan. It is carefully documented with hundreds of original interviews and published sources properly cited in two different lists of sources (numerical and alphabetical) Contains 30 tables and 190 excellent photos—including 7 of the author.

Table of contents: Preface. Notes. List of tables. List of figures. Map. Part I: Background. 1. The soybean: Birth and spread (legend, botanical inception, Nagata’s theory of origin, spread to Japan and beyond, the American story).

Part II: Japan’s production and supply of soybeans. 1. Japan the country and supply of domestic soybeans (Japan the country, domestic soybean production, planting and harvesting, marketing domestic soybean). 2. Importation of Red Chinese soybeans (background, mechanics, advantages, and prospects). 3. Importation of U.S. soybeans (history, method and mechanics of importation, the American shippers, concluding comments on importation). 4. Distribution (use in brief, super-wholesaler, wholesaler, retailer wholesaler, Japan’s grain exchange).

Part III: Soybean utilization in Japan. 1. Utilization of soybeans for oil and meal (oil crushing history, soybean source, delivery of soybeans, the crushing industry, liberalization of soybean oil and meal, oil utilization in Japan, meal utilization in Japan). 2. Tofu (history, use of soybeans, manufacture, the tofu factory, marketing tofu products, recently developed tofu products, tofu as food, concluding comments). 3. Miso (importation, home production of miso, quantity of miso produced, soybean used for producing miso, kinds of miso, fermentation time, comparison of miso firms, manufacturing, packing and marketing, price, instant miso, use of miso, miso consumption outlook). 4. Shoyu (introduction, production and manufacturers, manufacture, raw materials, preparation

of raw materials for natural shoyu, preparation of materials for chemical method shoyu, preparation of materials for mixed method shoyu, fermentation, filtering and pressing, sterilization, bottling, price, use of shoyu, miscellaneous shoyu products, concluding comments). 5. Natto (description, history, Daitokuji natto, the natto industry, consumption, natto soybeans, processing, making cost and price, marketing, use of natto, problems, new ideas and natto products). 6. Frozen tofu (history, development, frozen tofu soybeans, processing, freezing, defrosting, drying, treatment with ammonia and packing, marketing, preservation, use). 7. Kinako. 8. Yuba (history and development, the plight of the yuba industry, soybeans for yuba, manufacture, classification of yuba, use). 9. Tsukudani and nimame (description, soybean tsukudani, nimame). 10. Hamanatto (history, manufacture, use). 11. Edamame. 12. Moyashi (manufacture, use). 11. Miscellaneous products (fermented soybean curd, MSG, confectionary products, other products). Conclusion. Sources (numerically arranged). Sources (alphabetically arranged).

Tables: 1. U.S. soybean production, 1924-1963. 2. United States, Red China, and world production of soybeans (bushels), 1950-1963. 3. U.S. soybean importation, exportation and amount processed for oil and meal, 1924-1963. 4. U.S. exportation of soybeans (1,000 bushels) total, by continent, and to six largest importing countries, 1958-1962. 5. Japan's soybean acreage, production, and merchandising rate. 6. Japan's importation of soybeans, total, and Red China's portion, 1945-1963. 7. Japan's total importation of soybeans and U.S. portion, 1945-1963. 8. Soybean usage in Japan, 1963. 9. Japan's processing of oilseeds, 1963. 10. Crushing capacity of selected Japanese oilseed crushers. 11. Eight largest crushers of soybeans and amount of soybeans crushed per month in 1963. 12. Total quantity of soybeans crushed in Japan, 1950-1963. 13. Japan's daily per capita intake of edible fats and oils. 14. Japan's consumption of edible fats and oils, 1945-1961. 15. Use of soybean meal. 16. Chemical composition of tofu and aburaage. 17. Quantity of soybeans and soybean meal used for tofu-aburaage productions (all Japan), 1950-1963. 18. Miso production and quantity of soybeans and soybean meal used, 1950-1963. 19. Composition of miso. 20. Daily per capita consumption of miso in Japan, 1950-1963. 21. All Japan production of shoyu and use of soybeans and soybean meal, 1950-1963. 22. Composition of shoyu. 23. Yearly per capita consumption of shoyu, 1950-1963. 24. Composition of natto. 25. Production of frozen tofu and use of soybeans. 26. Composition of frozen tofu. 27. Yearly per capita consumption of frozen tofu. 28. Composition of kinako. 29. Composition of yuba. 30. Monosodium glutamate production and use of soybeans and soybean meal. Continued.

This typed manuscript was sent to Soyfoods Center in July 2004 by Tomoko Brandemuhl, the wife of the author. About the author (based on several interviews with Tomoko, July 2004): William Victor Brandemuhl was born on 30 Nov. 1940 at Iron Mountain, Michigan. He grew up in Florence, Wisconsin, then attended the University of Wisconsin at Madison. He roomed for 3-4 years with various Japanese cancer researchers at the university. He also became close to Tomoko Arai (born 12 Dec. 1937 in Tokyo), a Japanese woman, who was doing graduate studies in social work there as a Rotary International Fellowship student. William initially intended to graduate in June 1962, but stayed an extra year in order to pursue independent studies in Japanese language and soybeans. He became interested in the soybean and its history in an anthropology class taught by Dr. R.J. Miller; William finished his excellent research paper on soybeans in Jan. 1963. He also took one year of Japanese language instruction (night classes). William graduated in Jan. 1963 with a BSc degree in economics.

William obtained a grant (no strings attached) from Honeycomb Products Co. of Mankato, Minnesota, to study soybean utilization in Japan. Only one American had studied this subject in Japan after World War II—Alan K. Smith of the USDA, who visited Japan and wrote short but detailed reports in 1948-49 and 1958. In Jan. 1963 Brandemuhl arrived in Japan and became research fellow at the Department of Agricultural Economics, Kyoto University, Kyoto, Japan. Between Feb. 1963 and May 1964 (15 months) he conducted field research on soybean utilization in Japan. In June 1963 (after William had been in Japan for 4 months), Tomoko completed her graduate studies, graduated from the University of Wisconsin, and (since her scholarship was finished), returned to Japan—to be with William and to help him with his research in Japanese, which he spoke only moderately well. She traveled with him throughout Japan and translated for him during the many interviews he conducted. At each destination, she spoke about America to the local Rotary club—which paid her transportation, room, and board. William's monthly check from Honeycomb paid for his room and board—but not for his travel and research, so he had to work part time doing English translation for a Japanese company. On trips, he took many photos using his expensive Nikon camera. Tomoko's family lived near Kobe, where she and William were married on 8 Aug. 1964—three months after he finished his field research. Several days after the marriage, they returned to the USA to visit his parents in Florence, Wisconsin, and enjoy a wedding party there.

William now knew he wanted to pursue a career in international business. He was soon offered a job at Crocker Citizen National Bank (International Division) in San Francisco, California. They drove to San Francisco and got an apartment at 1701 21st Avenue; he began work that fall,

and was soon learning the basics of international business. Every evening after work at the bank he returned home to work on transforming his field notes into a manuscript. As he wrote the rough draft, Tomoko (a skilled pianist but not a skilled typist) typed it on a manual typewriter. The next day he would correct any mistakes and she would retype each page into final form. In 1965 he had the best carbon copy bound and sent it to Honeymead; he kept the original. It was never published and he received no academic credit for it.

On 26 May 1966 their first son and only child, Konrad Victor Brandemuhl, was born in San Francisco. They bought a house in Pacifica. In 1967 he was offered a job with Caterpillar Tractor Co. (International Div.) in Peoria, Illinois. In 1968 he moved with his boss to work at Allis-Chalmers Manufacturing Co., West Allis, Wisconsin. In 1969 he was transferred to Tokyo, Japan, as Far East Representative of the company. In 1970 he was transferred to Singapore as Far East Manager of the company.

William and Tomoko later lived for about 10 years near Tokyo, Japan (mostly in Mitaka), and for a while in Singapore. Over the years he showed his typescript on "Soybean Utilization in Japan" to many people, but nobody was interested. In 1986 he started his own trading company, specializing in textiles, natural rubber, latex thread, and various machine mechanisms. Tragically, William died on 2 April 1998 in Bangkok, Thailand, of pneumonia, during a business trip. He loved the excitement of international business and interaction with people of different cultural backgrounds. Address: San Francisco, California.

1335. Brandemuhl, William. 1965. Soybean utilization in Japan: Figures (Document part). San Francisco, California. xxii + 478 p. Unpublished manuscript. 28 cm. [189 ref]

• **Summary:** 1. Black soybeans from Japan's Tanba region and American Harosoy soybeans. 2. Soybeans growing on a dike. 3. Soybean plants drying on rack. 4. Soybean plants drying just prior to harvesting. 5. Soybean plants drying just prior to harvesting. 6. Soybean harvester. 7. Depodding rack and pod filled stalk. 8. Depodding soybeans. 9. Entrance to the Red Chinese Trade Fair held in Tokyo, during April, 1964. 10. One of the agricultural exhibits at the Chinese Trade Fair (corn and soybeans). 11. Soybeans and soybean plants exhibited at the Chinese Trade Fair. 12. Soybeans and other bean products that Red China is capable of exporting (exhibition at the Red Chinese Trade Fair). 13. Soybeans on display at retail store. 14. Soybeans on display at retail store. 15. Barge unloading of soybeans at oil mill. 16. Barge unloading of soybeans at oil mill. 17. Soybean tank receiver at oil mill. 18. Multi-spout soybean feeder at barge side. 19. An oil gift assortment.

20. Selling oil at a small oil retail shop. 21. Dispensing oil. 22. Selection of oil at oil retail shop (notice birds in cage at right). 23. Vegetable oil displayed with petroleum products. 24. Vegetable oil displayed with petroleum

products. 25. Bottling facilities at oil wholesaler's. 26. Bottling facilities at oil wholesaler's. 27. Prepackaged oil products displayed at wholesaler's. 28. Seafood fried in soybean oil. 29. Selling soybean oil fried products. 30. Temperature controlled fryer. 31. At a chicken farm. 32. Handling 20 kilograms bags of chicken feed. 33. Soybean meal on top of other components of mixed feed prior to hand mixing. 34. Bag fastener for mixed feeds packed at wholesaler. 35. Fermenting agent for bakery (contains equal quantities of soybean flour, yeast, and water). 36. Silk worms eating mulberry leaves. 37. Silk worms eating soybean protein mixed with mulberry leaves. 38. Tofu. 39. Soybean grinder.

40. Soybean grinder. 41. Soybean grinder. 42. Open pit live steam cooker. 43. Open pit wood-stoked cooker. 44. Okara tank and press. 45. Outdated okara press. 46. Tonyu [soymilk] receiving tanks (precipitation tanks). 47. Removing water from precipitating curd. 48. Pressing tofu with stone weights. 49. Yakidofu. 50. Yakidofu being dipped into a shaping box. 51. Mechanical press for pressing yakidofu. 52. Cutting yakidofu. 53. Roasting yakidofu. 54. Kinugoshi tofu. 55. Aburaage. 56. Aburaage prior to being deep fried. 57. Frying sushiage, a product similar to aburaage. 58. Frying aburaage. 59. Hiroso: left front; atsuaage: right front; sushiage: left rear; aburaage: center rear.

60. Okara for use as cattle feed. 61. Okara for food use. 62. Overall view of production portion of tofu plant. 63. Tofu peddler. 64. Tofu on display. 65. Bagged tofu. 66. Miso-shiru soup. 67. Dengaku (yakidofu covered with miso and placed over low heat). 68. Aburaage formed as a bag with rice inside. 69. Yudofu, Japan's most famous but not often eaten tofu dish. 70. Yudofu. 71. Miso. 72. Fermentation starting material (rice inoculated with bacteria). 73. The first step in making home miso. 74. Mashing soybeans for home miso. 75. Rice koji being used for home produced miso. 76. Salt being added to soybean and koji for the making of home miso. 77. Mixing home miso components. 78. Mixing home miso components. 79. Freshly made home miso.

80. Home miso after one year natural fermentation. 81. Koji maker. 82. Koji filled boxes. 83. Autoclave for steaming soybeans. 84. Koji mixed with salt. 85. Wooden vat for miso fermentation. 86. Weights for pressing miso. 87. Removing miso from fermentation vat. 88. Mixing and grinding miso. 89. Degraining [grinding] miso. 90. Miso on display. 91. Miso packing and sealing instrument. 92. Packing miso in a plastic bag. 93. Beef and rice miso preserver. 94. Seafood and rice miso preserver. 95. Receiving soybean meal at shoyu factory. 96. Saline solution for shoyu production. 97. Fermenting moromi. 98. Equipment used for bubbling moromi. 99. Temperature control of moromi.

100. New moromi. 101. Moromi which has fermented nearly one year. 102. Hydraulic press for pressing moromi. 103. Running moromi into filter cloth. 104. Filter cloth containing moromi. 105. Raw shoyu storage tank. 106. Open press for previously pressed moromi. 107. Opening moromi filter cloth. 108. Removing shoyu kasu (shoyu presscake) from filter cloth. 109. Bagging shoyu kasu for sale as cattle food. 110. Quick method shoyu kasu. 111. Shoyu sterilization instrument. 113. Shoyu bottler. 114. Bottling shoyu by hand. 115. High speed labeling. 116. Hand labeling. 117. Preparing sauce for shipment. 118. Shoyu cold sauce. 119. Filling plastic bottles with shoyu for use in box lunches.

120. Broiled chicken coated with shoyu. 121. Fish marinated in shoyu. 122. Fish baked with shoyu. 123. Grilled eels basted with shoyu. 124. Daitokuji natto (look like raisins spread on a sheet of paper). 125. Cooker for steaming soybeans for natto. 126. Pressurized container for inoculating soybeans. 127. Inoculating soybeans for natto. 128. Traditional method of packing natto. 129. Traditional method of packing natto. 130. Incubation rack and traditional packages of natto. 131. Packaging inoculated soybeans prior to incubation. 132. Packaging inoculated soybeans prior to incubation. 133. Inoculated soybeans in recently introduced containers. 134. Natto incubation room. 135. Natto on display at egg shop. 136. Overall view of frozen tofu factory. 137. Precipitation containers for frozen tofu tonyu. 138. Smoothing frozen tofu curd. 139. Frozen tofu curd flowing into shaping box.

140. Shaping box for frozen tofu curd equipped with sheet metal guide. 141. Removing formed frozen tofu curd from sink. 142. Cutting formed curd into freezing size. 143. Sized curd in -20°C freezer. 144. Sized curd in -5°C degree freezer. 145. Defrosting frozen tofu. 146. Removing frozen tofu curd from centrifuge. 147. Inspecting frozen tofu curd for dryness. 148. Drying frozen tofu. 149. Grinding frozen tofu into marketable size. 150. Packing frozen tofu. 151. Frozen tofu on display. 152. Cooked frozen tofu displayed in food shop. 153. Cooked frozen tofu mixed with vegetables. 154. Packing kinako. 155. Kinako on display. 156. Covering pounded rice cake with kinako. 157. Yuba. 158. Yuba hanging on rack above tonyu tank. 159. Lifting yuba from tonyu tank.

160. Fresh yuba. 161. Rolling fresh yuba into marketable form. 162. Combining fresh yuba with vegetables. 163. Rolling dry yuba. 164. Yuba on display. 165. Shoyu vats at tsukudani factory. 166. Tsukudani cooker. 167. Cooling tsukudani. 168. Nimame being marketed. 169. Nimame with shoyu and shrimp. 170. Nimame with shrimp. 171. Selling nimame. 172. Nimame as served. 173. Hamanatto. 174. Sun drying Hamanatto. 175. Close-up of sun-dried Hamanatto. 176. Pressing Hamanatto. 177. Grading Hamanatto. 178. Hamanatto on display. 179. Edamame.

180. Sprouting soybeans. 181. Sprouting soybean covered with straw. 182. Close-up of sprouting soybeans. 183. Sprouting soybeans. 184. Wetting down sprouting soybeans. 185. Soybean sprouts. 186. Mapped sprouts [Note: "Mappe" is not a Japanese word; mappe beans are imported from Burma]. 187. Soybean roasting oven. 188. Roasting soybeans. 189. Soybeans and seaweed. 190. Black soybeans in pounded rice cake.

Map of Japan. Address: San Francisco, California.

1336. Brandemuhl, William. 1965. Soybean utilization in Japan: List of interviews (Document part). San Francisco, California. xxii + 478 p. Unpublished manuscript. 28 cm. [189 ref]

• **Summary:** Between Feb. 1963 and May 1964 the author interviewed people from the following organizations (listed alphabetically) related to soybean utilization in Japan. In many cases he interviewed the owner, president, or managing director.

1. Agricultural Experimental Farm, Kamigori, Hyogo-ken.
2. Akutagawa Candle Co., Kyoto.
3. Aoki Miso Co., Nagano-ken.
4. Aoki Umbrella Co., Kyoto.
5. Aoyama Candy Co., Kyoto.
6. Bunge Far East Agent, Osaka.
7. Choko Shoyu Miso Co., Nagasaki.
8. Continental Overseas Corp., Tokyo.
9. Daiichi Trade Co., Kobe.
10. Dainihon Ink and Chemical Co., Osaka.
11. Dainihon Pharmaceutical Co., Osaka.
12. Daiya Frozen Tofu Co., Suwako-gun, Nagano-ken.
13. Daizu Yuryo Wholesale and Broker, Kobe.
14. Franceya Chocolate Co., Kyoto.
15. Fuji Oil Co., Osaka.
16. Genroku Brewing Co., Kyoto.
17. Gion Mameheto Candy Co., Kyoto.
18. Hamamoto Tofu Co., Kyoto.
19. Hamano Tofu Co., Kyoto.
20. Hanamura Bread Co., Kobe.
21. Harada Miso Co., Kyoto.
22. Hasegawa Oil Co., Kyoto.
23. Hashizume Tsukudani Co., Kyoto.
24. Hirota Sauce Co., Kyoto.
25. Hohnen Oil Co., Osaka.
26. Honda Miso Co., Kyoto.
27. Ishino Miso Co., Kyoto.
28. Itoh Trade Co., Osaka.
29. Itoh Trade Co., Tokyo.
30. Iwai Trade Co., Osaka.
31. Kaihara Natto Co., Kyoto.
32. Kamejirushi Shinshu Miso Co., Nagano-ken.
33. Kanegabuchi Chemical Co., Takasago-shi, Hyogo-ken.
34. Kanemasu Grain Wholesaling Co., Osaka.
35. Kanematsu Trade Co., Osaka.
36. Kansai Paint Co., Osaka.
37. Kansai Shoji Wholesale Co., Kyoto.
38. Kanto Miso Co., Kyoto.
39. Kasakura Natto Co., Tokyo.
40. Kato Kinako Co., Tokyo.
41. Kido Tofu Co., Tokyo.
42. Kobata Farm, Kyoto.
43. Kobayashi, Michiharu, Kyoto University, Kyoto.
44. Koya-san Frozen Tofu Co., Ito-gun, Wakayam-ken.
45. Kurosawa Miso Co., Nagano-ken.
46. Kyoto Prefectural Agricultural Cooperative, Kyoto.
47. Louis Dreyfus and Co., Tokyo.
48. Mame Masa Candy Co., Kyoto.
49. Marubeni Iida Trade Co., Osaka.
50. Meiji Chocolate Co., Osaka.
51. Midori Natto Co., Tokyo.
52. Mitsui Trade Co., Osaka.
53. Mitsui Trade Co., Tokyo.
54. Moriguchi Natto Co., Kyoto.
55. Morita Frozen Tofu Co., Sasayama, Hyogo-ken.
- 56.

Moriwaki frozen Tofu Co., Taka-gun, Hyogo-ken. 57. Nagata, T., Dept. of Plant Breeding, Hyogo University of Agriculture, Sasayama, Hyogo-ken. 58. Nagoya Miso Co., Nagoya. 59. Nakai Wholesale Co., Osaka. 60. Nakamura Yuba Co., Kyoto. 61. Nakayama Farm, Kamigori-cho, Hyogo-ken. 62. Nakazawa Soap Co., Kyoto. 63. Namikawa Tofu Co., Kyoto. 64. Naruse Natto Bacteria Co., Tokyo. 65. National Agricultural Cooperative Assoc., Osaka. 66. Nihon Paint Co., Osaka. 67. Nikka Oil Co., Tokyo. 68. Nisshin Meal Co., Kobe. 69. Nisshin Oil Co., Yokohama. 70. Noda Shoyu Co., Takasago-shi, Hyogo-ken. 71. Nomura Meal Co., Kyoto. 72. Nomura Tsukudani Co, Kyoto. 73. Nunoura, Hiroshi, Kyoto Women's University, Kyoto. 74. Oguchi, K., Nagano-ken Shinshu Miso Assoc., Nagano-ken. 75. Ohashi, Taiji, Japan Soap Assoc., Tokyo. 76. Okazaki Natto, Tokyo. 77. O-mame Candy Co., Kyoto. 78. Osaka Grain Exchange, Osaka. 79. Osaka Prefectural Miso Assoc., Osaka. 80. Otsuya Agricultural Brokers, Kyoto. 81. Ryo Tofu Co., Kyoto. 82. Sawai Wholesale Co., Kyoto. 83. Senmaru Yuba, Kyoto. 84. Shimamoto Tofu Co., Kyoto. 85. Shinseimame Candy Co., Kyoto. 86. Sugimori, T., Marukin Shoyu Brewing Co., Kyoto. 87. Tada, H., Kyoto Prefectural College, Kyoto. 88. Taiyozakoku Wholesale Co., Kyoto. 89. Takeya Miso Co., Suwako-shi, Nagano-ken. 90. Tanaka Narazuke, Kyoto. 91. Tatsuna Higashimaru Shoyu Co., Tatsuno-shi, Hyogo-ken. 92. Tawa Chicken Farm, Kyoto. 93. Tofu Aburaage Assoc., Kyoto. 94. Toyo Menka Trade Co., Osaka. 95. Uchida Tsukemono, Kyoto. 96. Ueda Miso Assoc., Ueda-shi, Nagano-ken. 97. Uemura Suhama Candy Co., Kyoto. 98. Uno Tofu Co., Kyoto. 99. Yamajirushi Miso Co., Nagano-ken. 100. Yamamoto Farm, Taki-gun, Hyogo-ken. 101. Yamanaka Oil Wholesale Co., Kyoto. 102. Yamato Bean Sprout Co., Kyoto. 103. Yamaya Hamanatto Co., Shizuoka-ken. 104. Yazura Yahata, Kyoto Textile University, Kyoto. 105. Yoshihara Oil Co., Osaka. 106. Yoshimura, Hyogo University of Agriculture, Sasayama-shi, Hyogo-ken. 107. Yoshizabaru Retail Co., Kyoto. 108. Yubahan Co., Kyoto. 109. Yubakichi Co., Kyoto. Address: San Francisco, California.

1337. David-Perez, Enriqueta. comp. and ed. 1965. *Recipes of the Philippines*. Philippines: Published by the author. Printed by Capitol Publishing House, Inc. (Quezon City). 86 + [14] p. Illust. No index. 22 cm.

• **Summary:** This is an expanded edition of the author's 1953 book of the same title. Almost all the recipes in this book have Filipino names, with no English translation of those names. A surprisingly large number contain soyfoods (See Glossary at end). Misu is "a paste made of fermented rice and soy beans" [miso]. Tajure is "fermented soy beans, caked" (fermented tofu). Tausi is "fermented soy beans" [soy nuggets or fermented black soybeans with salt]. Tokua is "soy bean curd" (tofu). Toyo is Filipino-style soy sauce.

Soy-related recipes include: Chicken pastel (with toyo, p. 26). Arroz caldo with chicken (with 3 tbsp. patis or toyo, p. 45). Bañigus en tocho-2 (with 2 tbsp. each tajure and tausi, and 1 cake tokua, cut into pieces 3/4 inch long and 1/8 inch wide, p. 54). Bañigus in soy sauce (with 2 tbsp. soy sauce, p. 54). Bulanglang-1 (with 1 cup tokua, cubed and fried, p. 57). Burong isda (with 1 tbsp. angkak-fermented red rice, p. 59). Escabecheng apahap (with 4 pieces tokua, p. 71). Escabeche-Macao style (with 3 tbsp. toyo sauce, p. 71).

Kari-karing pata (with ground toasted peanuts or peanut butter, p. 79). Lumpia labong (with 5 bean cakes-tokua, p. 83). Lumpia sauce (with 1/2 cup toyo sauce, p. 84). Lumpia with peanuts (with 2 squares tokua-diced, 2 tbsp. toyo-soy sauce, and 1 cup ground peanuts, p. 85). Lumpia with ubod-2 (with 2 cakes tokua, and toyo to taste, p. 87). Misu-tomato sauce (with 2 tbsp. misu-soy bean paste, p. 92). Pancit "luglug" (with 1/2 cup soy bean cake-tokua-cut into small cubes, p. 97). Umba (with 2 tbsp. toyo and 1 heaping tbsp. tausi, p. 118). Pastillas de mani (with 1 can ground peanuts, p. 133).

On the page facing p. 186 is a full page ad for Suki Soy Sauce, made by the Philippine Shoyu Co., Liloan, Cebu, Philippines. It is "Pure and fully aged."

Seven unnumbered pages later is a full-page ad for "Ajino-Moto super seasoning... The purest vetsin ever."

A glossary at the end contains brief definitions of uncommon ingredients. Definitions of the soy-related ingredients above are taken from this glossary. Angkak is "red-colored grains of rice used as coloring for fermented fish."

Note: On the title page is printed "10th printing-1965" but no original publication date is given. Address: Philippines.

1338. Kawamura, Wataru; Matsumoto, E. 1965. *Misoshiru fudoki [Miso soups throughout the provinces]*. Tokyo: Zenkoku Miso Rengokai. 57 p. [Jap] Address: 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan.

1339. Koyanagi, Tatsuo; Oikawa, Keiko. 1965. *Daizu seihin oyobi shoku-en ga nezumi no hatsuiku oyobi kôjo-sen ni oyobosu eikyô [The effect of soybean products or sodium chloride in diets on the thyroid and growth of rats]*. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 18(3):190-93. [17 ref. Jap; eng]

• **Summary:** Tests with rats showed that the feeding of heated soybeans, natto (fermented soybeans containing no sodium chloride), miso (fermented soybeans containing sodium chloride) or tofu (soybean curd) produced a high incidence of thyroid enlargement in the rats, but the enlargement was prevented by increasing the iodine content of the diets by a small amount.

The inclusion of sodium chloride in iodine-deficient diets at the 3% level caused a pronounced hypertrophy of the thyroid and weight loss in rats. In this case, the supplementation of iodine alone did not prevent the weight loss, but adding methionine plus iodine did.

Axelrod et al. have reported that thyroxine production in rats was increased with increasing sodium chloride intake. Thus, the effects of a large intake of sodium chloride resemble in some respects those of administration of thyroxine.

"It is well established that thyroxine increases the metabolic rate and oxygen consumption of animals and beyond small and very critical levels the thyroid hormone decreases growth and feed efficiency. Charkey found that all of these effects of thyroxine can be reversed by methionine. The present findings that methionine prevented the weight decrease of rats fed a diet of high sodium chloride content may be explained by the antithyrototoxic effect of methionine." Address: Tohoku Daigaku Nôgaku-bu, Eiyô Kagaku Kyôshitsu [Lab. of Nutrition, Faculty of Agriculture, Tohoku Univ., Sendai, Japan].

1340. Kurokawa, Kazuo. 1965. Daizu oyobi sono kakkô shokuhin no suiyosei chisso ni tsuite [Study of water soluble nitrogen of soybean and its products]. *Eiyô to Shokuryo (J. of Japanese Society of Food and Nutrition)* 17(5):333-36. (Chem. Abst. 64:11768. 1966). [5 ref. Jap; eng]

• **Summary:** The water soluble fraction of the nitrogen in soybean products varied depending on the way that each product was processed. In the case of miso, approximately 60% of the nitrogen was extractable, mostly as formol nitrogen. Address: Tokyo-toritsu Hakuô [Shiro Kamome] Kôtôgakkô.

1341. Li, Shih-chen. comp. 1965. Pen-ts'ao kang-mu [Collected essentials of herbs and trees. Illustrated compendium of pharmacopoeia with commentaries]. Hong Kong: Commercial Press. [Chi]*

• **Summary:** This 1965 edition of the classical work incorporates the following works on plants by earlier authors, now largely unrepresented, which were cited extensively by Schafer (1977) in his chapter: Chen, Ch'üan. *Yao hsing pên ts'ao*.

Ch'en, Ts-ang-ch'i. *Pên ts'ao shih i*.

Hsiao, Ping. *Ssu sheng pên ts'ao*.

Li, Hsün. *Hai yao pên ts'ao*.

Meng, Shen. *Shih liao pên ts'ao*.

Su, Kung. *T'ang pên ts'ao chu*.

Sun, Ssu-mo. *Ch'ien chin shih chih*.

1342. Ohsawa, George. 1965. Zen macrobiotics: The art of rejuvenation and longevity. The philosophy of Oriental medicine. Vol. I. Los Angeles, California: Ohsawa

Foundation, Inc. xiv + 128 p. Revised, edited and annotated by Lou Oles and Shayne Oles Suehle. No index. 17 cm. [20 ref]

Address: Los Angeles, California.

1343. Raper, Kenneth B.; Fennell, Dorothy I. 1965. The genus *Aspergillus*. Baltimore, Maryland: The Williams & Wilkins Co. 686 p. [400+* ref]

• **Summary:** The authors discuss the koji molds in Chapter 18 titled "Aspergillus flavus group." Contents: Outstanding characters. General considerations (incl. *A. oryzae*, *A. oryzae* var. *effusus*, *A. flavus*, *A. tamarii*, and *A. flavo-furcatis*). Occurrence and significance: Introduction, enzymes (amylolytic, proteolytic, lipolytic). "Members of this group are widely distributed in nature. They are regularly isolated from soils, particularly those from tropical and subtropical areas, from forage and decaying vegetation, from stored seeds and grains, and from various types of food products. They contribute to decomposition processes... Except for *A. Niger* and allied species, they have been used more widely in industry than any other group of molds, particularly for the production of enzymes.

"Members of the *Aspergillus flavus* group produce diastatic and proteolytic enzymes abundantly. In large measure the alcoholic and soy food industries of the Far East are based upon these molds and their enzymes. In the soy industries, closely related molds, or even the same strains, are used as a source of proteolytic enzymes. In 1894 Takamine secured a series of U.S. patents covering the production of diastatic enzymes and the making of alcoholic liquors. Subsequent to this, other investigators, mostly Japanese, published a number of papers in this field. Oshima, in 1922 and 1928, reported on the production of protease by members of the *A. flavus-oryzae* group. Today, considerable quantities of diastatic enzymes, proteolytic enzymes, and mixed diastatic and proteolytic preparations are being manufactured from these molds for use in the food, textile, and tanning industries." Address: Dep. of Bacteriology, Univ. of Wisconsin, Madison, Wisconsin.

1344. Sakurazawa, Nyoiti [Ohsawa, George]. 1965. You are all sanpaku. English version by William Dufty. Secaucus, New Jersey: University Books. 224 p. Index. 22 cm. First paperback edition published in 1980 by Citadel Press, Secaucus, NJ.

• **Summary:** Contents: Introduction. The divine ritual. A land of sanpaku. Faith and medicine. The cause. The cure. The daily check-up. Food and sex. Prayer and fasting. The sacred act. About salt. About sugar. About milk. About liquids. About chewing. About principal foods. Soulfood: Brown rice, rice cream, buckwheat, buckwheat cream, wheat, cous cous, chapati, millet, raw rice, bread, gomasio [gomashio] (sesame salt), umeboshi plums, miso and shoyu, tahini, miso cream, about tea, coarse green tea (bancha),

soya ban (coarse green bancha tea with soy sauce), mu tea, lotus tea, lotus tea, mint tea, thyme tea, Ohsawa coffee (Yannoh; made of rice, wheat, aduki beans, chick peas, chicory, and a little oil), Dandelio (dandelion coffee substitute), kokoh, kuzu, umeboshi juice, ume syo kuzu (umeboshi + shoyu + kuzu), aduki juice, radish drink (daikon #1 and #2), special rice cream, brown rice tea, wheat tea. The oneness of the universe [Ohsawa's profound and beautiful credo]. Tables: 1. Macrobiotic table of daily food in order of yin to yang. Note: The most yin foods are indicated by 3 downward-pointing triangles; the most yang foods by 3 upward-pointing triangles. Beans (except aduki) are quite yin, being symbolized by 2 downward-pointing triangles. Eggplant, tomato, and potato are the most yin vegetables. The most yang cereal is buckwheat, followed by rice. 2. Physical phenomena–Yin/yang table. Biographical note on Ohsawa (p. 213-18).

This was the first popular book in English to explain the principles of macrobiotics. "*Sanpaku* describes a condition in which they white of the eye can be seen between the pupil and the lower lid as the subject gazes directly forward. This, we quickly learn, connotes a grave state of physical and spiritual imbalance." It is the Oriental sign of impending disaster.

Soy-related recipes and information include: Soya bean plaster (p. 140). Tofu plaster (p. 141; tofu is called "white soya bean cheese"). Tekka [miso] for anemia and general weakness (p. 143). Miso and shoyu (p. 190). Miso cream (with tahini, p. 190-91). Soya ban: Coarse green bancha tea with soy sauce (p. 194). Ume syo kuzu (p. 199; a proven medicinal beverage [made from umeboshi, shoyu, and kuzu]).

About sugar (p. 165): "I am confident that Western medicine will one day admit what has been known in the Orient for years: sugar is without question the number one murderer in the history of humanity—much more lethal than opium or radioactive atomic fallout—especially for those people who eat rice as their principal food."

About milk (p. 169): "There is no reason for man to live on the milk of an animal—especially an animal inferior to him biologically and intellectually." People of the Orient avoid milk "because they respect the biological natural laws of the Order of the Universe... Once the young offspring of animals have their teeth and are weaned from nursing, they no longer drink milk... No animal ever does." "The quality and quantity of a mother's milk controls her child's destiny. In cases where the mother's milk is not available, babies can be fed with *Kokoh*—a macrobiotic cereal milk made with roasted rice, glutinous rice, oatmeal, soya beans and sesame seeds reduced to powered form" (see recipe p. 198).

Miscellanea: The Ohsawa Foundation at 317 Second Avenue in New York City, located on the first floor of an old tenement, had a 4-table restaurant in the front and a kitchen in the rear. There were several macrobiotic

restaurants in Paris, plus a tiny macrobiotic food store named Les Trois Epis and the Librarie Ohsawa, both on Rue Lamartine Guy Massat was editor of the French monthly journal *Yin/Yang*. The author: "I could not remember a single doctor, out of dozens who treated me, who had ever shown the slightest curiosity about what I ate and drank."

"The stark facts presented to the President of the U.S. by his Special Commission on the Nation's Health in December of 1964 are staggering: In 1963 heart-artery disease caused 55% of all U.S. deaths, and cancer 16%. Strokes 210,000; diseases of arteries outside the brain combined with diseases of the heart to kill 793,000. Cancer killed 285,000" (p. 66). Occidental medicine is symptomatic medicine; it does not seek to cure the basic causes. And it is microscopic/analytical. It seeks the truth in a maze of details; but the "truth is whole." The "ultimate cause of every illness is violation of the order of the universe through ignorance or through arrogance,..." (p. 80-81). "Disease is a divine warning, a message from nature seeking to guide us to the correct path" (p. 98). The essential factor in the proper nutrition of the human body is the proper proportion of Yin and Yang. The best proportion of Yin/Yang or Potassium/Sodium is 5 to 1. All those foods whose K/Na ratio is greater than 5 to 1 are Yin. The books ends with a "Biographical Note: Sakurazawa-Ohsawa" who is said to have "published some 300 works in Japanese and more than 20 books in Western languages, principally French." His wife, Lima, is a professor of traditional Japanese music. There is a selected bibliography of Ohsawa's books, especially those published in French. Address: New York.

1345. *SoyaScan Notes*. 1965. Chronology of The Infinity Company (Originally named Perseverance Foods). 16 Jan. 1992. Compiled by William Shurtleff of Soyfoods Center. • **Summary:** 1965?—This company was founded in New York City under the name Perseverance Foods by Howard Rower. 1964 or 1965—The company name was changed to The Infinity Co., but it was popularly known as Infinity Foods. In 196? it was incorporated as The Infinity Food Co. Inc.

After Herman Aihara and the Chico group left New York in 1961 and the Kushis left in 1963, something of a void was left—which Infinity filled. It was a macrobiotic and natural foods warehouse, importer, and wholesale distribution company that was a prime source of food for many of the early macrobiotic and natural foods groups and students, including the Kushi Study Houses in Boston, Massachusetts. Infinity imported foods (including Mugi Miso by 1965) from Tokyo CI (Centre Ignoramus), which "guaranteed" the foods' quasi-medicinal effects. The food was of top quality. The owners (including Howard Rower and Jason Hammond) were involved with the Church of Scientology.

1971–Greenberg’s Natural Foods in New York City and Mother Nature & Sons in New York City both advertise that they carry foods supplied by Infinity Food Co. which was located at 171 Duane Ave., New York City, New York 10013 [later 10005]. Phone: 212-925-2062. Infinity was located in the old produce district of New York, an area of town called Tribeca.

Bruce Macdonald (1992) remembers that for a while, in the late 1960s, Erewhon was Infinity’s largest customer, even though Infinity was always a relatively small company. As Howard Rower moved up in the Scientology hierarchy, he gradually lost interest in Infinity. Bruce thinks Infinity went out of business in about 1970 or 1971.

Sources: Ad in East West Journal. 1971. 1(16):10. says the company was started in 1964 in New York; E. Farmilant. 1972. *Macrobiotic Cooking*. p. 208; Paul Hawken. 1973. East West Journal 3(8):11-16. Aug. “Erewhon: A biography. The view within.” Shurtleff & Aoyagi. 1983. George Ohsawa and the macrobiotic movement: History of work with soyfoods. Interview with Jimmy Silver. 1992. Dec. 9 and 15. “History of work with natural foods.” Interview with Bruce Macdonald of Erewhon. 1992. April 5. Address: New York. Phone: 212-925-2062.

1346. Takahashi, Jūsaku; Jinno, Kan. 1965. Nōka no hozonshoku no kyōka ni kansuru kenkyū. II. Jika-yō “kakō name-miso” no hinshitsu ni tsuite [Studies on the enrichment of preserved foods for farm families. II. On the qualities of home-made “namemiso” (processed miso)]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 17(6):429-33. [17 ref. Jap; eng]

1347. Takahashi, Jūsaku; Jinno, Kan. 1965. Nōka no hozonshoku no kyōka ni kansuru kenkyū. I. Jika-yō “jozo name-miso” no hinshitsu ni tsuite [Studies on the enrichment of preserved foods for farm families. I. On the qualities of home-made “fermented namemiso”]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 17(6):381-86. [20 ref. Jap; eng]

1348. Ebine, Hideo; Sasaki, Hirokuni. 1966. Miso ni tenka shita sorubinsan no bōyu ni kansuru kenkyū. I. Sorubinsan no teiryō-hō [Study on the effect of sorbic acid as a preservative in miso. I. Determination of sorbic acid in miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 21. p. 35-37. Jan. [5 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1349. Ebine, Hideo; Sakano, Keiichi. 1966. Kobukurozume miso ni hassei suru kabi [Mold which developed on the inner surface of miso packaged in small plastic bags].

Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute) No. 21. p. 38-40. Jan. [2 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1350. Ito, Hiroshi; Ebine, H.; Nakano, M. 1966. Kōtanpaku teishokuen miso. II. Seihin no chozō-sei no kōzō ni tsuite [Making high-protein, low-salt miso. II. On the structure of the preservation of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 21. p. 55-59. Jan. [13 ref. Jap; eng]

• **Summary:** High-protein, low salt miso could be stored well for 10 days at or below 10°C. The miso acidified when stored for 4 days at over 20°C. The preservatives dehydroacetic acid and sorbic acid, which are allowed for use with miso, could protect swelling at the level of one part in 500 but not at 1 part in 1,000. Freeze drying was found to be better than vacuum drying for miso. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1351. Ito, H.; Ebine, H. 1966. Miso no nyūsan-kin no kenkyū. VIII. Taien-sei no hikui Streptococcus group [Studies on lactic acid bacteria in miso. VIII. On the Streptococcus group having low salt tolerance]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 21. p. 44-54. Jan. [16 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1352. Kamada, Hidemoto; Ebine, Hideo; Nakano, Masahiro. 1966. [Evaluation method of the quality of soybean employed for natto and miso manufacturing]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 21. p. 136-40. Jan. [8 ref. Jap; eng]
• **Summary:** Reprinted from *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 60(7):620-23 (1965). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1353. Watanabe, Tokujū; Ebine, H.; Ohta, T. 1966. Daizu shokuhin no kakō gijutsu [Technology of soybean processing]. *Shokuryo Kenkyujo, Shokuryo Gijutsu Fukyu Shirizu (National Food Research Institute, Extension Series of Food Technology)* No. 4. 61 p. March. [Jap]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan (Norinsho Shokuryo Kenkyujo).

1354. *SoyaScan Notes*. 1966. Chronology of Erewhon. Renamed Erewhon Trading Co. in 1967. 12 Dec. 1991. Compiled by William Shurtleff of Soyfoods Center.
• **Summary:** 1966 April 9–Erewhon opens as a small (10-by 20-foot) macrobiotic and natural foods retail store at 303-B Newbury Street (below street level) in Boston. Aveline and Michio Kushi are the founders, but Aveline is

the sole owner. Evan Root is the first retail store manager. The origin of the natural foods industry and movement in America can be traced to this date. Erewhon is the first store of its kind in America and it soon serves as a model for many other similar natural food stores across the nation. Erewhon sells several soyfoods, mainly miso and shoyu purchased from Howard Rower's Infinity Foods or Japan Foods Corp., both in New York.

1967 Aug.—Paul Hawken takes over the management of Erewhon (one small retail store) from Evan Root. He changes the name to Erewhon Trading Co. and starts to expand the business.

1968 May—Paul Hawken incorporates Erewhon Trading Company. Paul later states that he and Aveline Kushi each own 50% of the stock. However Aveline Kushi and her attorney, Morris Kirsner, agree that they offered him 50% of the Erewhon stock shortly before he left for Japan (in March 1969) but he did not accept it. To this day (Feb. 1999) Aveline has no idea why Paul did not accept such a generous offer.

1968 June—Hawken establishes his first supplier of organically grown grains, Ted Whitmer, a wheat farmer in Montana. By 1973 Erewhon had established and contracted with 57 farms in 35 states to provide the company directly with organically-grown foods.

1968 Aug.—Erewhon starts to import foods from Japan, initially from Muso Shokuhin, later by correspondence with Mr. Akiyoshi Kazama, who worked for an import/export company named Mitoku, which sold no food at the time. The initial orders contained red miso (made by Sendai Miso Shoyu Co.) and natural shoyu (made by Marushima).

1968 Nov.—On Thanksgiving day, Erewhon moves up and across the street to a much bigger and nicer location at 342 Newbury St. The company now has 6 employees: Paul Hawken, Roger Hillyard, Bruce Macdonald, Bill Tara, Jim Docker, and Jean Allison. One day later, Bill Tara leaves to start a macrobiotic East West Center in Chicago. Tofu, curded with calcium sulfate and made by a Chinese company in Boston, starts to be sold.

1969 March—Paul Hawken and Evan Root leave for Japan. Bruce Macdonald takes over as general manager of Erewhon. Paul stays in Japan for 9 months, arranging for individual packaging of products that were formerly imported in bulk, and finding new items for Erewhon to import. He visits suppliers, works with Mitoku and Muso, and studies Japanese language and culture.

1969 spring—Erewhon starts wholesaling foods, under the direction of Bruce Macdonald.

1969 Aug.—Aveline Kushi moves to Los Angeles where her youngest son, Hisao, undergoes traditional Japanese bone massage therapy. In Los Angeles, she establishes the first macrobiotic study house at 7511 Franklin Ave. Bill Tara arrives about a month later to set up a retail store,

Erewhon-Los Angeles, which opens on 8001 Beverly Blvd. in about September.

1969 Oct. (early)—Bruce Macdonald leaves for Los Angeles with his new bride to run the new Erewhon retail store there. Roger Hillyard takes over as general manager of Erewhon in Boston.

1969 Nov?—Erewhon opens its first warehouse in Boston, at 33 Farnsworth Street.

1970 Jan. 1—Erewhon's earliest existing catalogue seen (wholesale and retail) lists 7 pages of natural food products—most of them imported from Japan. By March 1970 Erewhon lists 96 products in its catalog.

1970 July—Erewhon's rapidly expanding distribution business moves into a large (20,000 square feet) fifth-floor leased brick warehouse at 33 Farnsworth St., on the docks in South Boston. *East West Journal* and Tao Books soon move to the same area.

1971 Jan.—*East West Journal* begins publication in Boston, Massachusetts.

1971—Erewhon Trading Company of Los Angeles has expanded and is now at 8001 and 8003 Beverly Blvd., Los Angeles, CA 90048.

1971 March—Roger Hillyard is replaced as general manager of Erewhon—Boston.

1971 May—Bruce Macdonald leaves Erewhon in a dispute over ownership of the company.

1972—John W. Deming Jr. plans to invest \$150,000 in Erewhon in exchange for stock, and Advest Co. plans to conduct Erewhon's first public stock offering—but neither happens after Michio Kushi nixes the plans.

1973 Aug.—Paul Hawken writes a critical history of Erewhon and its problems. Published in *East West Journal* it is titled "Erewhon: A Biography. The View Within." Shortly thereafter Paul Hawken resigns, saying that running Erewhon was a nightmare. Some say he sells his 25% ownership back to the company, which was subsequently managed by Bill Garrison, Tyler Smith, Jeff Flasher, and Tom Williams, in that sequence.

1974 July to 1977—Erewhon becomes the exclusive representative and agent for both the Muso and Mitoku companies in North America. The labels of all products imported from these companies must bear the Erewhon label.

Starting in late 1969 a number of macrobiotic and/or natural foods companies grew into distributors following the models established by and with help from Erewhon: Eden Organic Foods in Ann Arbor (started by Bill Bolduc on 4 Nov. 1969), Food for Life (started in 1970 by Bill Tara as a retail store on the 10th floor of a Chicago office building), Janus in Seattle, Washington (Jan. 1972, by George Gearhart and Blake Rankin, formerly of Spiral Foods), Essene in Philadelphia, Pennsylvania (by Feb. 1971), Laurelbrook in Maryland (Aug. 1971), Ceres in Colorado Springs (1973), and The Well in San Jose,

California (1973, by Roger Hillyard). These macrobiotic distributors had a strong influence on the numerous other non-macrobiotic natural food distributors, such as Lifestream (started in 1969 as a retail store), Westbrae in Berkeley, California (wholesale distribution: July 1970, by Bob Gerner; retail: Feb. 1971, Gerner). Shadowfax (New York, 1971), and Tree of Life in St. Augustine, Florida (retail: May 1971; wholesale distribution: Feb. 1972, by Irwin Carasso).

1975 Aug. 1—Erewhon sells all of its West Coast Division in California (Los Angeles and Culver City) to John Fountain and John Deming for cash and notes, realizing a net gain of \$86,872.

1978 (early)—Erewhon moves into a huge warehouse and office complex at 3 East St., Cambridge, Massachusetts 02141.

1979 April 27—The workers in Erewhon's production, trucking, shipping, and kitchen departments vote 42-19 to form a union affiliated with Local 925, the Service Employees International Union.

1979—John Deming steps in to liquidate all the assets of financially failing Erewhon—Los Angeles. Tom DeSilva, Tyler Smith, and Jeff Flasher buy the retail store at 8001 Beverly Blvd.

1981 Feb.—Erewhon currently lists 4,000 products in its catalog. It services 2,000 customers and provides jobs for 175 people in its warehouse and retail stores.

1981 Nov. 10—Erewhon files for bankruptcy protection under Chapter 11 of the Federal Bankruptcy Act because of debts totaling \$4.3 million. At his time, Aveline Kushi is the sole owner of Erewhon. Stow Mills picked up the lion's share of the Erewhon business, with Westbrae also getting a significant part of it.

1982 May—A \$1.3 million offer by Ronald Rossetti, president of Nature Food Centres, is accepted as the reorganization plan in the Erewhon, Inc. bankruptcy. Rossetti purchased Erewhon as an individual; it was never part of Nature Food Centres.

1986—Erewhon acquires U.S. Mills, which had been founded in 1908. In effect U.S. Mills and Erewhon were merged, and U.S. Mills was chosen as the corporate name, largely since it had been around longer.

1988 May—Chuck Verde (who was the president of Erewhon) and Cynthia Davis acquired the U.S. Mills / Erewhon business. They became the main joint shareholders. Address: 303-B Newbury St., Boston, Massachusetts.

1355. **Product Name:** Miso.

Manufacturer's Name: Japan Foods Corporation (Importer). Made in Japan.

Manufacturer's Address: New York.

Date of Introduction: 1966. April.

New Product—Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 236.

1356. **Product Name:** Miso.

Manufacturer's Name: Nishimoto Trading Co. (Importer). Made in Japan.

Manufacturer's Address: New York.

Date of Introduction: 1966. April.

New Product—Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 236.

1357. Hayashi, Shizuka. 1966. There's an increasing trend to soybean oil in Japan. *Soybean Digest*. May. p. 68-69.

• **Summary:** In 1965-66 some 1,852,000 tonnes of soybeans were used in Japan. Of this, 1,341,000 tons (74.5%) were crushed, 297,000 tons (16.0%) were made into tofu and frozen tofu, 150,000 tons (8.1%) were made into miso, 32,000 tons (1.7%) were made into natto, and 32,000 tons were made into soy sauce and other soy products.

Crushing the soybeans yielded 1,073,000 tons of soybean meal. Of this, 736,000 tons (68.6%) was used for animal feeds (largely as a component of mixed feeds), 174,000 tons (16.2%) to make shoyu, 65,000 tons to make tofu, 63,000 tons for other food uses, and 35,000 tons for other non-food uses. Thus, a little over 50% of all soybeans used in Japan in 1965 were used to make foods—not including soy oil.

Per capita consumption of edible oil in Japan has increased dramatically, from 7.52 grams per day in 1956 to 18.44 grams in 1965. During the same period, total soybean oil consumption has risen from 74,010 tonnes to 219,967 tonnes. In recent years a number of the large soybean crushing companies, such as Hohnen, Nikkoh, Nisshin, Showa, and Yoshiwara have expanded their extraction plants. "The various soybean food processors including soy sauce, miso, and tofu are consolidating into fewer large-scale plants with financial support from the government for improvement and better efficiency." Address: Japanese American Soybean Inst.

1358. Kilpatrick, James J. 1966. Right to be let alone is the most precious of all. *Los Angeles Times*. July 12. p. A5.

• **Summary:** Benevolent paternalism has become rampant in the USA; Big Brother is watching you—and is sure he knows what's best for you. "Nowhere is this arrogance of power less restrained, or more abused, than in the Food and Drug Administration" [FDA]. "For example, in New York City, on the complaint of the FDA, marshals recently swooped down upon the Ohsawa Foundation at 317 Second Ave., and there confiscated a large quantity of 'macrobiotic foods,' and a large quantity of books and pamphlets on Zen cookery."

The confiscated foods were not mislabeled, not contaminated in any way, and not adulterated. The Azuki

beans were pure and natural—as were the soy sauce, rice cakes, millet, and sesame oil.

It was the ideas behind the food that were bad. The Zen philosophy holds that a certain type of diet is good and that certain of these foods will cure certain diseases. “Such diets are dangerous,” says the FDA in a press release. Four persons are known to have died in New Jersey and one in California for following strictly these dietary precepts.

If a handful of Zen Buddhists think they will enter nirvana by eating soybean paste [miso], why should the FDA care? Is this a major threat to public health? Judge Brandeis once said that the most precious of all rights is the right to be left alone. Note: Supreme Court Justice Louis Brandeis said this in 1928, invoking a right to privacy.

1359. Ishii, Kenji; Kawamura, A.; Iwata, T. 1966. Hatcho miso no nigami ni kansuru kenkyû. III. Butanooru chûshutsu kubun no teimi [Studies on the bitter taste of Hatcho-miso. III. Taste of the butanol extract of Hatcho-miso]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 44(8):459-62. Aug. [3 ref. Jap; eng]

• **Summary:** “Hatcho-miso was extracted with ether and the residue was then extracted with butanol. The butanol extract had a bitter taste.” Address: Dep. of Agricultural Chemistry, College of Agriculture and Veterinary Medicine, Nihon University, Setagaya-ku, Tokyo, Japan.

1360. Swaminathan, M. 1966. The use of soyabean and its products in feeding infants and in the prevention of protein malnutrition in weaned infants and pre-school children in developing countries. *Indian J. of Nutrition and Dietetics* 3(4):138-50. Oct. [63 ref]

• **Summary:** Contents: Introduction. Chemical composition: Carbohydrates, fat, minerals, vitamins, proteins. Factors affecting the nutritive value of soya proteins: Trypsin and growth inhibitors, heat processing, other factors. Nutritive value of soya proteins (with or without methionine supplementation): Experiments with animals, experiments with human beings, supplementary value to other food proteins. Processed foods from soyabean for feeding infants and preschool children: Milk substitutes and infant foods, processed protein foods based on soya (soya flour, Multipurpose Food or MPF, soup powder). Foods based on soyabean and other oilseed meals: Precooked roller dried foods, extrusion-cooked full-fat soybean flour. Other soya products (soy protein isolate, tofu, natto, miso, tempeh, soy sauce). Conclusion. Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1361. Hesseltine, C.W.; Shotwell, Odette L.; Ellis, J.J.; Stubblefield, R.D. 1966. Aflatoxin formation by *Aspergillus flavus*. *Bacteriological Reviews* 30(4):795-805. Dec. [39 ref]

• **Summary:** Introduction. Fungi producing aflatoxins and other toxins of *A. flavus*. Natural occurrence of aflatoxin. Factors affecting aflatoxin formation in nature. Production of aflatoxin in culture. Aflatoxin studies at the Northern Regional Research Laboratory.

The occurrence of mycotoxins has been known for several decades. In 1913 Alsberg and Black of the USDA studied the biochemistry of toxins of certain molds isolated from corn meal. *Penicillium puberulum* was found to produce penicillic acid which was toxic. Interest in aflatoxins arose after the death of a large number of young turkeys in Great Britain in 1960. At least 4 aflatoxins are known to exist, produced by certain strains of *Aspergillus flavus* Link, *A. parasiticus* Speare, and *Penicillium puberulum* Bainier.

“*Aspergillus oryzae* and its near relatives are widely used in the preparation of koji for such food fermentations as shoyu (soy sauce), miso, black beans [soy nuggets / fermented black soybeans], and sake” (p. 802). *A. oryzae* is a close relative of *A. flavus*; they are distinguished on the basis of minor morphological characteristics. Aflatoxin has been found on only two commercial commodities: Peanuts and cottonseed cake. Although *A. flavus* can be made to grow on soybeans, none of the strains produced much aflatoxin regardless of the conditions. Aflatoxins have not been found in commercial soyfoods produced by *Aspergillus oryzae*.

The authors obtained very low toxin production (0.03 micrograms/milliliter) on pearled soybeans (Hawkeye variety) using a strain of *Aspergillus flavus*. Address: NRRL, Peoria, Illinois.

1362. Takeuchi, Tokuo; Yoshii, Hisao. 1966. Miso, shôyu no peptides ni kansuru kenkyû. III. Miso jukusei-chû no henka [Studies on the peptides in miso and soy sauce. III. Changes in the amounts of peptides during miso ripening]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 44(12):934-39. Dec. [12 ref. Jap; eng]

Address: Food Research Inst. of Aichi prefecture, Nishi-ku, Nagoya, Japan.

1363. Ebine, Hideo. 1966. Manufacturing digestible proteinous foods from oilseeds and pulses by enzymatic treatment. *JARQ (Japan Agricultural Research Quarterly)* 1(1):21-25. [3 ref. Eng]

Address: Chief, Fermentation Chemistry Lab., Fermentation Div., Food Research Inst.

1364. Nakano, Masahiro. 1966. On the Japanese food, miso, in respect to the processing and dietetical view. In: VIIIth International Congress of Nutrition. Abstracts of paper. Hamburg 3-10 VIII. See p. 241. *

Address: National Food Research Inst., Tokyo.

1365. Buck, Pearl S. 1966. *The people of Japan*. New York, NY: Simon and Schuster. 255 p. See xiv, p. 167. Illust. 24 cm. *

• **Summary:** “Chicken with miso paste and raw vegetables.”

1366. Burkill, I.H. 1966. *Dictionary of the economic products of the Malay Peninsula*, 2nd ed. 2 vols. Kuala Lumpur, Malaysia: Ministry of Agriculture and Co-operatives. xiv + 2444 p. See vol. 1 (A-H), p. 1098-1103. Index. 24 cm. [11 ref]

• **Summary:** Information on the soy bean (*Glycine max*) is found under Glycine. Contents: Origin. Man has selected the more tropical races and is still selecting. Search for a race suitable for Malaya. Java, long ago, found one suitable for the drier parts of the island. Secondary uses as fodder, a cover crop, and green manure. High food-value of the seed. The seed, ripe or nearly ripe, as food. Its special use in diabetes. Artificial milk. Vegetable casein [for industrial uses]. substitute for coffee. Seedlings [sprouts] eaten. Sauces, &c., from the bean. Tépépé made in Malaysia with the aid of a fungus. Teou-fu [tofu] prepared by the Chinese. Tao-cho prepared [in Java] with the aid of fungus. Sho-yu or soy kechap. Miso, a Japanese preparation. The making of soy kechap in Java. Organisms in fermentation. Oil [soy-bean oil, or kachang oil]. Criminal use (hairs on the pods cause irritation within the digestive tract). Fibre (in the stem). Joss sticks (Ash of the stem is said to be used in joss-sticks in Indo-China). The soybean is frequently cultivated in Burma and Siam.

A photo (frontispiece) facing the title page shows Isaac Henry Burkill (1870-1965). This second edition is only slightly different from the original 1935 edition of which 2,000 copies were sold. This edition was published on behalf of the governments of Malaysia and Singapore by the Ministry of Agriculture and Cooperatives, Kuala Lumpur, Malaysia. Address: Director of Gardens, Straits Settlements (Singapore; 1912-1925).

1367. Ebine, Hideo. 1966. *Fermented soybean foods in Japan*. Tokyo: Tropical Agricultural Research Center, Ministry of Agriculture and Forestry. 20 p. *
Address: National Food Research Inst., Tokyo, Japan.

1368. Miller, Gloria Bley. 1966. *The thousand recipe Chinese cookbook*. New York, NY: Antheneum. First Grosset & Dunlap edition 1970. xiv + 926 p. Illust. magnificently by Earl Thollander. Index. 26 cm.

• **Summary:** This massive volume, by the blond-haired wife (a professional writer; photo shown on dust jacket) of a Greenwich Village sculptor, offers an in-depth introduction to Chinese cooking and ingredients, though it is unusually heavy on flesh foods and light on grain and vegetable dishes—as the following listing of recipes will show. In describing “The Chinese Diet” (p. 3-4) the author notes,

“Meat does not predominate, vegetables do:… There are no dairy products: Butter, cheese and milk are practically unknown to Chinese cooking. (Cattle, few and far between, were more profitably put to work as beasts of burden.) Yet, with nutritional ingenuity, the Chinese created their own ‘cow’ which produced its own ‘dairy’ products. They took the lowly soybean, whose protein closely resembles that of meat, and transformed it in innumerable ways. They softened and ground the soybean, then mixed it with water, converting it first to milk, then to curd, and finally to cheese. (They also put it to many other uses: made it into sauce and jam; served its sprouts as vegetables; fermented, dried and roasted it; used it salty as a condiment, sweet in pastries.)”

Page 75 notes: Soy sauce should be used discreetly in light soups. If possible, it should be light soy. The dark variety can destroy a soup’s lightness and clarity; its strong taste can overwhelm flavors.

Soy-related recipes include: Basic bean curd soup (p. 99-100). Basic cold bean curd (p. 114). Slivered bean curd and shrimp (p. 115). Stir-fried pork and bean curd (p. 133). Stir-fried pork with deep-fried bean curd. Stir-fried pork with pressed bean curd (p. 135). Stir-fried roast pork and bean curd I and II (p. 156-57). Basic steamed minced pork (with “fermented black beans,” p. 167-68). Steamed sliced pork with ham and bean curd (p. 170). Steamed sliced pork with white cheese [white fermented tofu] (p. 171). Basic braised pork with bean curd (p. 174-75). Braised pork with red bean cheese (p. 176). Braised pork and bean curd (p. 180). Braised five-flower pork and red bean cheese (p. 180-81). Red-simmered pork (with soy sauce, p. 186-88). Stir-fried spareribs with black bean sauce [made from “fermented black beans”] (p. 202-03. “Mince garlic and scallion stalk, then mash with soaked black beans. Combine with sherry, water and soy sauce”). Steamed spareribs with black bean sauce (p. 206. “Mince garlic and mash with soaked black beans; then combine with cornstarch, soy sauce and sugar. Pour mixture over ribs”). Braised spareribs with black bean sauce (p. 206. “Mince garlic and ginger root, then mash with soaked black beans”). Braised spareribs with red bean cheese (p. 206). Stir-fried beef and bean curd (p. 215). Red-simmered beef (with soy sauce, p. 245-46). Red-simmered (or cooked) duck (with soy sauce, p. 267-71). Stir-fried chicken with soy jam (p. 325-26). Stir-fried chicken and tomatoes with black beans [“fermented black beans”] (p. 327-28). Stir-fried deep-fried chicken with brown bean sauce (p. 329). Stir-fried deep-fried chicken with soybean paste (p. 330-31). Red-cooked or soy chicken (p. 366-69). Steamed fish topped with black bean sauce [“fermented black beans”] (p. 411-12). Braised soy fish (p. 429-32). Braised fish with deep-fried bean curd (p. 434). Braised fish steaks with bean curd (p. 435). Deep-fried bean curd stuffed with minced fish (p. 448). Braised dried oysters with bean curd sticks [yuba] (p. 483). Stir-fried shrimp with

bean curd I and II (p. 496). Stir-fried shrimp with deep-fried bean curd (p. 497). Stir-fried shrimp with black bean sauce ["fermented black beans"] I and II (p. 500). Poached shrimp with ham and bean curd (p. 527). Basic omelet with bean curd I and II (p. 551-52). Fried eggs with soy sauce (p. 569). Soy eggs (also called pot-stewed or red-stewed eggs). Soy duck eggs (p. 574). Basic stir-fried bean curd (p. 593). Basic deep-fried bean curd (p. 594). Deep-fried bean curd with dried shrimp sauce. Steamed stuffed bean curd (with pork, p. 595). Miscellaneous bean curd (p. 595-96). Stir-fried spinach and white cheese [fermented tofu] (p. 618-19). Stir-fried string beans and white cheese [fermented tofu] (p. 620-21). Soy jam noodles (p. 660). Noodles in brown bean sauce (and hoisin sauce, p. 661). Dips (incl. Dip for deep-fried bean curd; many use soy sauce or hoisin sauce, p. 709-14). Soy-vinegar dressing. Soy-sesame dressing (p. 715, with soy sauce and sesame oil). Soy-oil dressing (with soy sauce and peanut oil, p. 716). Marinades (many use soy sauce, hoisin sauce, brown bean sauce, or red bean cheese, p. 717-24). Sauces (many use soy sauce or yellow bean paste, incl. Sweet-and-pungent sauces, p. 725-39).

The chapter titled "Other Useful Information" tells more on bean curd

The extensive Glossary of Chinese Ingredients (p. 844-72) contains the following soy-related entries: Bean curd (bean cakes; note that recipes call for a certain number of "cakes" of tofu). Bean curd sauce (see cheese, Chinese white). Bean curd sticks (dried bean curd). Bean paste, yellow (yellow sauce). Bean sauce, brown (see brown bean sauce). Beans, black fermented beans (black bean sauce or salted black beans). Brown bean sauce. Cheese, Chinese red (red bean curd cheese, spiced red bean curd, or southern cheese). Cheese, Chinese white (bean curd sauce, white bean curd cheese, or white bean sauce). Five Spices (five-flavored powder or five-fragrance spice powder; star anise, anise pepper, fennel, cloves, cinnamon). Hoisin sauce (haisien sauce, Peking sauce, red seasoning sauce, red vegetable sauce, sweet vegetable paste, or sweet vegetable sauce; another variety is called Ten-Flavored Sauce). Pickles, Chinese (pickled vegetables; pickled in soy sauce). Red bean sauce. Soy jam (soybean paste). Soy sauce (light, black, or heavy varieties). Hoisin sauce (p. 855) is a "Thick, dark brownish-red sauce, made from soy beans, spices, garlic and chili. Sweet and spicy." Used in cooking and as a table condiment.

The chapters titled "Storing Information" and "Soaking Information" include such information on many of the foods listed in the glossary.

Photos show: A bottle of Chou Soy sauce made by Amoy Canning Co. (p. 112). A brick-shaped can of "Thick Soy" made by Tung Chun Canning Co. (p. 126). An earthenware jug of "Ho Sang Yick Soy Sauce" (p. 203). A Mason-type jar of fermented bean curd made by Tung Chun Soy (p. 596). A bottle of Koon Chu* soy [sauce] (p. 715).

Note 1. This is the earliest English-language document seen (April 2003) that uses the term "black bean sauce" to refer to a sauce made from "fermented black beans" [soy nuggets] approximately as follows: Soak fermented black beans. Mince garlic (and sometimes scallion stalk, ginger root, etc.) and mash with soaked black beans. Then combine with ingredients such as: (1) Sherry, water, and soy sauce. (2) Cornstarch, soy sauce, and sugar. Address: Greenwich Village, New York City.

1369. Milner, Max. 1966. General outlook for seed protein concentrates. *Advances in Chemistry Series No. 57*. p. 52-64. Chap. 5. World Protein Resources. [8 ref]

• **Summary:** "Seed proteins, particularly those of the cereals and legumes, are mainstays of human protein nutrition, providing several times more of this nutrient than animal proteins..."

"World Protein Resources: The cereals contribute in round numbers 75 million metric tons of protein, of which wheat provides 25 million, rice 12 million and corn 20 million tons. The legumes, consisting of various beans, peas and lentils, in aggregate, provide, surprisingly, only about 8 million tons. Additional but minor plant sources of protein are tubers, including potatoes, and nuts. The world animal protein supply, including principally meat, milk, eggs, and fish, has been estimated to be about 20 million metric tons. And finally, the potential contribution of the oilseeds, which include principally soybeans, cottonseed, and peanuts, can be considered to be about equal to that of all the animal protein now available, 20 million tons per annum."

A long section titled "Soybeans" (p. 57-59) discusses soybeans and soyfoods, including tofu, miso, natto, tempeh, soybean milk, full-fat soybean flour, soy protein concentrates and isolates, and spun soy protein products. Address: UNICEF, United Nations, New York, NY; Present address: Office of Technical Cooperation and Research, Agency for International Development, Washington, DC.

1370. Nagano Miso Kogyo Kyodo Kumiai Rengokai. 1966. *Shinshû Miso no rekishi* [History of Shinshu miso]. Nagano, Japan. 578 p. [Jap]*

1371. Nakamura, James I. 1966. Agricultural production and the economic development of Japan, 1873-1922. Princeton, New Jersey: Princeton University Press. xxiii + 257 p. Illust. Index. 24 cm. Series: Studies of the East Asian Institute, Columbia University. [149* ref]

• **Summary:** Japan's economic growth is usually described in superlatives and agriculture is widely viewed as playing an unusually important role in this growth. In reexamining government statistics about Japan's historical agricultural growth, the author finds that the median growth rate was not 2.4% as previously believed, but probably no more than 1.0%. This remarkable finding dispels much of the mystery

surrounding Japan's miraculous "take-off" in the Meiji period.

Japan was a net food exporter until about 1895. By 1920 Japan had become heavily dependent on food imports, including wheat, soy beans, sugar, and animal products (p. 126).

During the Meiji period and until relatively recently, most rural households in Japan were nearly self-sufficient, producing almost all of their own cloth, clothes, footwear, housing, many farm implements, and most processed foods and beverages including "soy sauce, bean paste sauce (*miso*), pickles, rice wine (*sake*), etc. (p. 127, 139-40).

Table 5 (p. 228-30) gives the yield of ten Japanese crops from 1879 to 1925. The yield of soy beans increased from 0.516 *koku/tan* [10.45 bushels/acre] in 1879 (1 *koku* = 4.96 bushels; 1 *tan* = 0.245 acres) to 0.778 *koku/tan* in 1900 to 0.915 *koku/tan* [18.52 bu/acre] in 1919.

Soybeans are also mentioned on pages 97, 231, and 233. Address: New York.

1372. Nelson, Andrew Nathaniel. 1966. The modern reader's Japanese-English character dictionary. Revised ed. Rutland, Vermont, and Tokyo, Japan: Charles E. Tuttle Co. 1109 p. Index. 24 cm. [15 ref. Jap; Eng]

• **Summary:** Radical 37 = dai or oh = big + 3 strokes = #1171 = *daizu* or *ômage* = soy bean (p. 290).

Radical 75 = tree; at left = ki hen. #2211 = eda of edamame. Radical 82 = Hair of animals, ke. Radical 85 = Water + 11 strokes = soymilk. Radical 151 = Bean + 7 strokes = mame (bean) or tou = tofu. Radical 164 = Liquid (Sake *sukuri*) + 11 strokes = shoyu no sho. Radical 201 = Yellow (variant is 11 strokes).

Soy related words: (1) Miso: *miso* (fermented [soy] bean paste; flattery, p. 247). *miso o tsukeru* (to make a mess of, p. 247). *miso shiru*, *misojiru* (bean-paste soup, p. 247). *miso mame* (soybeans, p. 247). *misoni* (boiling with bean paste, p. 247). *misozuke* (pickled in bean paste, p. 247). *misokoshi* (bean-paste strainer, p. 247). *misosuri* (grinding bean paste; flattery, p. 247). *temai miso* (self praise; bean paste of one's own making, p. 420). *miso dengaku* (tofu baked [grilled] with miso, p. 621). *konamiso* (powdered miso, p. 691). *nuka miso* (salted rice-bran paste, for pickling, p. 694). *karamiso* (salty miso, p. 869).

(2) Tôfu [tofu]: *yakkodôfu* [yakkodofu] (tofu cut in cubes, p. 47). *kôridôfu* [kori-dofu] (frozen tofu, p. 75). *unohana* (refuse from tofu, p. 119). *shimidôfu*, *kogoridôfu* [shimi-dofu, kogori-dofu] (frozen tofu, p. 192). *age* (fried tofu, p. 447). *kara*, *okara* (tofu refuse, p. 525). *aburage* (fried tofu, p. 543). *yuba* (dried tofu [sic], p. 561). *yakidôfu* [yaki-dofu] (broiled bean curd, p. 578). *nama-age* (fried tofu, p. 618). *dengaku* (tofu baked with miso, p. 621). *inarizushi* (fried tofu stuffed with seasoned rice, p. 668). *tofu* (bean curd, tofu, p. 843). *kirazu* (tofu refuse [okara], p. 941). *kôyadôfu* (frozen tofu, p. 978).

toshi no mame ([soy] beans of the bean scattering ceremony, p. 88).

mitsumame (boiled [soy] beans with treacle / molasses, p. 328).

edamame (green soybeans, p. 494). *irimame* (parched [soy] beans, p. 576). *nimame* (boiled [soy] beans, p. 578).

nattô (fermented soy beans, p. 697).

tamari (soy sauce, p. 564).

azemame (soy beans grow on rice-field ridges, p. 624).

moyashi (artificially sprouted beans, p. 780). *moyashi mame* (beans for sprouting, p. 781). *hôrai mame* (sugar-coated beans, p. 786).

kuromame (black soy bean, p. 992).

mame abura (soybean oil, p. 843). *tônyû* (soybean milk, p. 843). *kinako* (soybean flour, p. 991). Address: PhD, Tokyo, Japan.

1373. Schenk, E.G.; Naundorf, G. 1966. Lexikon der tropischen, subtropischen und mediterranen Nahrungs- und Genussmittel [Dictionary of tropical, subtropical, and Mediterranean foods and food adjuncts (stimulants / enjoyables)]. Herford, Germany: Nicolaische Verlagsbuchhandlung Herford. xiv + 199 p. Index. 21 cm. Series: Manualia Nicolai 1. [200* ref. Ger]

• **Summary:** Pages 70-71 give a list of Japanese foods (after Mayerhofer and Pirquet 1926) in no apparent order, with the Japanese name followed by a translation of that name into German. Included in the long list are: Akamiso, miso, shiromiso, tofukasu [okara], daizu, fu [dried wheat gluten], kingyo-fu, kiri-fu, kiri-mochi [frozen and dried rice cake], ame [malt extract], mirin, aburage [tofu fried in vegetable oil], natto-Bohnenkäse, Tofu-Sojatoptfen, Tonyu-Sojamilch, azuki [small red beans], kwansen-fu, kinako-Sojabohnenmehl, geröstet, amasake-unvergorener Sake, umeboshi, koritofu [frozen and dried tofu], midzuame [soft ame = rice syrup], shoyu-Sojasauce, yuba-eine Bohnenspeise. Plus many types of sea vegetables.

On pages 140-42 the following terms are defined in German: Soja [soya], Sojabohne [soybeans], Sojabohnenkäse [soy cheese or tofu], Sojabohnenmehl [soybean meal], Sojabohnenöl [soybean oil], Sojakäse [fermented soy cheese], Sojamilch [soymilk], Soja-Nahrungsmittel [soyfoods]: Koji, Miso, Tofu, Nato [sic, natto], kondensierte Soja-Milch [condensed soymilk], Japanische Verarbeitungen [Japanese processed foods: Japanische Soja-Sauce Shoyu (Shoyu), Miso, Tofu], Soja-Nahrungsmittel, javanische [Javanese soyfoods: Tao-Hoe, Tempeh, Ketjap, Tao-Tjong [a term, and perhaps a product, between *doujiang* and *tao-tjo*, Indonesian-style miso], Sojatunken], Soja-Verarbeitungen: Sojamilch, Bohnenkäse, Teoufou (China), Tofu (Japan), Dan Phu (Vietnam), Natto (Japan), Tao-tehe (China).-Bohnenbri Miso (Japan), Tao-tjung (*doujiang*, China).-Sojasauce: Shogu [sic, Shoyu] (Japan), Tsiang-Yeou, Tao-yu (China), Ketjap (Java), Tuong

(Vietnam).—Gärmmittel: Kiut see (Japan). Then a table shows the nutritional composition of 8 of these foods.

Note 1. This book contains more than its fair share of errors and could be better organized.

Note 2. This is the earliest German-language document seen that uses *Sojabohnenkäese*, the German word meaning “soybean cheese,” to refer to tofu. Address: 1. Prof. Dr. med. habil., Dr. phil. nat, Laurensberg ueber Aachen, Germany.

1374. Sun, Ying-Hsing. 1966. *T'ien Kung K'ai Wu*: Chinese technology in the seventeenth century. Translated by E-tu Zen Sun and Shiou-Chuan Sun. University Park & London: Pennsylvania State University Press. xiv + 372 p. See p. 24, 29, 31, 215-16. Illust. 28 cm. [3 soy ref. Eng]

• **Summary:** The *T'ien Kung K'ai Wu*, by Sung Ying-Hsing (pinyin: *Tiangong Kaiwu*, by Song Yingxing) was published in 1637. The title can be rendered as “The Creations of Nature and Man.” This English-language translation of the 17th century work on Chinese technology contains 18 chapters, 151 superb illustrations, and extensive information on soybeans. The author concluded his preface in 1637 by warning “An ambitious scholar will undoubtedly toss this book onto his desk and give it no further thought; it is a work that is in no way concerned with the art of advancement in officialdom.”

In Chapter 1, “The growing of grains,” the section on “General terms” states (p. 3) that “the ‘five grains’ are sesamum, legumes, wheat, paniced millet, and glutinous millet. Rice is not included because the ancient sages who wrote on the subject were natives of northwestern China. Nowadays 70 per cent of the people’s staple food is rice, while wheat and various kinds of millet constitute 30 per cent. Sesamum and legumes are used exclusively as vegetables as [for making] oil, although tradition still classifies them among the grains.”

The section on “Hemp” (p. 24) notes that the seeds of hemp and sesame are only two kinds that can be used as grain or for oil. “Sesame is both delicious and nutritious; indeed it would be no exaggeration to say that it is the king of all grains.”

The section on “Legumes” (*shu*, p. 24, 29, 31) states that one of these legumes is the soy bean, of which there are two varieties [colors]: the black and the yellow. They should be planted not later than the time of the Ch’ing-ming festival [in early April of the solar calendar] or thereabouts. There are three types of yellow soy beans: “fifth-month yellow,” “sixth-month popper,” and “winter yellow.” “The yield of the first of these is small, while that of the last is always twice as much. The black variety is harvested invariably in the eighth month. North of the Huai River horses and mules that are used on long journeys must be fed this black soy bean before they can become strong and sturdy. The amount of the yield of the soy bean depends on the quality of the

soil, the frequency of cultivation, and the amount of rainfall. All bean jams (*shi*) [soy nuggets], sauces (*jiang*), and curds (*fu*) [tofu] are made from soy.

“South of the Yangtse [River] there is another species known as ‘long-legged yellow,’ which is planted in the sixth month after early rice has been cut, and is harvested in the ninth or tenth month. The method of planting this bean in Chi-an, Kiangsi [Ji’an, Jiangxi], is quite amazing: After the rice stalks are cut the stubble is not ploughed over, but in the open end of each stalk are placed three or four beans, which are pushed down with fingers. The beans are nourished by the dew gathered in the stalk stubs; later when the beans begin to grow the stubs will rot, providing further nourishment for the growth of the new crop. Should the weather be dry after the shoots appear, one pint of water [per plant?] is fed to the plants. In all, one watering and two cultivations are sufficient to bring forth a plentiful harvest. Birds must be kept away after the beans have been planted and before the young shoots appear, and man is the only effective guard against them.”

There are also “black-skin and brown-skin varieties of soybeans.” “In cultivating the fields of soybeans and green lentils [sic, mung beans], the land should be lightly ploughed, because the roots of the legumes are short and the shoots straight. If the furrows are deep the clods will pile up, preventing half the seeds from growing. Our ancient agriculturists did not know that deep ploughing was not suitable for legumes” (p. 29).

Other legumes include: (2) The green lentil (*liudou*) [sic, mung bean], “shaped small and round like a pearl.” (3) The pea (*wandou*, *Pisum sativum*). “It is round like the green lentil, but it has a black spot and is larger in size.” (4) The broad bean (*candou*, *Vicia faba*), “with its pod shaped like a silkworm and seeds larger than the soybean.”

(5) The small lentil (*xiaodou*) [sic, azuki bean]. “The red variety (*chixiaodou*) is effective when used medicinally, while the white variety (*baixiaodou*) (also known as the rice bean), is good as a vegetable. Planted at the time of the summer solstice, this variety is harvested in the ninth month, and is prevalent in the Huai and Yangtse river regions.”

(6) The black lentil (*liudou*), “which is now a common garden vegetable in north China. Its flour, made into thin sheets, serves the same purposes as that of the green lentil [sic, mung bean]. In Peking the street peddlers cry their ‘black lentil sheets’ all day long, indicating that the amount produced is considerable.

“A further kind is the white bean (*baibiandou*) [*Dolichos lablab*], which grows along trellises and is also known as the ‘eye-brow bean.’ In addition there are long string beans, tiger-spot beans, knife beans (large French beans [jack beans, *daodou*]), as well as the black-skin and brown-skin varieties of soybeans, and so forth, which are too numerous to describe. In all, they can serve as a

vegetable and take the place of grains in the feeding of mankind. How can students of Nature ignore them?"

In Chapter 4, titled "The preparation of grains," a section on "Preparing millet, sorghum, sesame, and beans" describes (p. 106) how to separate beans from their pods using a flail or a stone roller pulled by an ox. These two processes are shown in full-page illustrations (p. 83, 105).

In Chapter 12, "Vegetable fats and oils," the section on "Gradation of vegetable oils" begins (p. 215-16): "For eating, the oils of sesame seeds, turnip seeds, yellow soy beans, and cabbage (also called 'white cabbage' [i.e., celery cabbage]) seeds are the best. Next in quality come *Perilla ocymoides* ([the plant] resembles *Perilla nankinensis*; the seed is larger than that of sesame) and rape-seed oil (in the South it is called 'vegetable seed'); next, camellia or tea-seed oil;... the last in quality is hemp-seed oil..."

The yield of oil (in catties per *tan*) is given (p. 216) for many Chinese oilseeds. The two oilseeds with the lowest / worst yields of oil are: cotton seeds 7, and yellow soy beans 9. By contrast, sesame, castor, and camphor seeds yield 40 and rape seeds yield 30-40. In "Kiangsu [Jiangsu] the bean oil is used as food for humans, and the meal cakes are fed to pigs..." Note: 1 catty = 1 *jin* = 590 gm = 1.3 lb = 20.7 oz. 1 *tan* = ca. 180 liters. Thus, for soybeans, 9 catties = 5.31 kg of oil from ca. 180 liters of soybean seeds.

The next section in this chapter, titled "Methods and implements [for oil-extraction]" gives details of wedge presses and processes—but soybeans are not mentioned. Large illustrations show: Roasting and steaming oil seeds (p. 214). Press for making vegetable oils in China (p. 217). Pounding and grinding vegetable tallow tree seeds (p. 220).

Also discusses: Hemp seeds and oil (p. 24, 216). Sesame seeds and oil (p. 3-4, 24, 106, 215-16, 219). Address: China.

1375. Zen cookery: The philosophy of Oriental culture. Vol. I. Practical macrobiotics. 1966. Ignoramus Press, Ohsawa Foundation, Inc., 1434 N. Curson Ave., Los Angeles, California. 84 p. Index. 22cm.

• **Summary:** The revolutionary little reddish-orange or yellow book, with a black plastic comb binding, that introduced many to macrobiotic cooking. No author or editor is listed. The Ohsawa Foundation has branches in Los Angeles, New York, Wellesley, Paris, and Tokyo. Contents and format are identical to the 1964 edition edited by Teal Nichols, published by the Ohsawa Foundation of Chico—which see. Address: Los Angeles, California.

1376. Takeuchi, Tokuo; Yoshii, Hisao. 1967. Miso, shōyu no peptides ni kansuru kenkyū. V. Genryō C/N hi o i ni shita miso no peptides keitai (2) [Studies on the peptides in miso and soy sauce. V. Relation between the amino acid composition of miso peptides and C/N ratio of the raw

materials]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 45(1):34-39. Jan. [16 ref. Jap; eng] Address: Inst. of Food Technology, Aichi prefecture, Nagoya, Japan.

1377. Takeuchi, Tokuo; Yoshii, Hisao. 1967. Miso, shōyu no peptides ni kansuru kenkyū. IV. Genryō C/N hi o i ni shita miso no peptides keitai (1) [Studies on the peptides in miso and soy sauce. IV. Relation between the C/N ratio of the raw materials and the distributive patterns of peptides in miso]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 45(1):29-33. Jan. [16 ref. Jap; eng]

• **Summary:** "Soybean koji (low carbon/nitrogen ratio) contained more amino acids and peptides than any other koji of higher C/N ratio. This tendency seemed to have originated from the proteolytic character of soybean koji, because the neutral and alkali protease of *Asp. oryzae* (principal protease in soybean koji) would be more active in soybean protein than in acid protease.

"In the ripened miso the same distributive pattern of peptides was observed regardless of C/N ratio of raw materials. Therefore, the peptide patterns may be virtually similar for all types of miso." Address: Inst. of Food Technology, Aichi prefecture, Nagoya, Japan.

1378. Yokotsuka, Tamotsu; Sasaki, M.; Kikuchi, T.; Asao, Y.; Nobuhara, A. 1967. Kōji-kin no seisan-butsumi ni kansuru kenkyū. I. Hōsan tane kōji-kin no seisan suru shū toshite keikō seibun ni tsuite [Studies on the compounds produced by molds. I. Fluorescent compounds produced by Japanese industrial molds]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 41(1):32-38. Jan. [22 ref. Jap; eng]

• **Summary:** Shows the absence of aflatoxins in Japanese fermented foods such as shoyu and miso—based on extracts of 60 strains of molds. Address: Central Research Inst., Kikkoman Shoyu Co. Ltd., Noda Inst. for Scientific Research, Noda-shi, Chiba-ken, Japan.

1379. Ebine, Hideo; Sakano, Keiichi. 1967. Miso no pH no sokutei [Determination of the pH value of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 22. p. 43-45. March. [3 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1380. Hayashi, Shizuka. 1967. Serve Japanese soy noodles. *Soybean Digest*. March. p. 24.

• **Summary:** "A soybean exhibition was recently held for 3 consecutive days in Yokohama at the Takashimaya Department Store, one of the three largest department stores in Japan. The exhibit, devoted exclusively to soy foods, was under the sponsorship of the store, the prefectural government of Kanagawa, and various soybean groups.

“It was held to promote increased consumption of various soy products such as salad and cooking oils made from soybean oil, soy sauce, miso, frozen tofu, tofu products, and soy flour. Approximately 25 booths were used by manufacturers to display their products.”

The Japanese American Soybean Institute set up a snackbar named “Protein House” (Tanpaku-an) and served Japanese udon noodles made with a mixture of 15% soy flour and 85% wheat flour. The noodles were very popular and crowds swarmed the booth. “It was emphasized that the soy noodle has over three times the nutritional value of an ordinary noodle.” 7,000 people visited the 3-day exhibition and 381 entered the contents to name the noodle. The name selected by a committee was “Protein Noodle” (Tampaku-Udon). Address: Managing Director, Japanese American Soybean Inst.

1381. Ito, Hiroshi; Ebine, Hideo. 1967. Miso no bôyu ni kansuru kenkyû. III. *Clostridium* ni yoru fukure [Study on the prevention of swelling in miso. III. Swelling caused by *Clostridium*]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 22. p. 46-53. March. [9 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1382. Ito, Hiroshi; Ebine, H.; Ohta, T. 1967. Miso no bôyu ni kansuru kenkyû. IV. *Clostridium* no sakkin [Study on the prevention of swelling in miso. IV. Sterilization of *Clostridium*]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 22. p. 54-60. March. [21 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1383. Ito, Hiroshi; Ebine, Hideo. 1967. Miso no bôyu ni kansuru kenkyû. V. *Clostridium* no taien-sei [Study on the prevention of swelling in miso. V. Salt-tolerance of *Clostridium*]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 22. p. 61-67. March. [13 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1384. De, Sasanka S.; Russell, J.S.; André, L.M. 1967. Soybean acceptability and consumer adoptability in relation to food habits in different parts of the world. *USDA Agricultural Research Service. ARS-71-35*. p. 20-27. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois. [1 ref]

• **Summary:** Contents: Traditional soy products in the Far East: Soysauce, soy milk, bean curd, tempeh, natto and miso, roasted soy flour, kochu chang [Korean soybean

miso], sprouted beans. Introduction [of soybeans] in other countries: Brazil, USSR, Africa, Latin America, Turkey. New types of products: Defatted soy flour, full-fat soy flour and beverages made from it developed by the Soybean Council of America. Justification: Cost of a pound of protein from different foods. Beef \$4.60. Pork \$4.30. Poultry \$1.50. Nonfat dry milk solids \$0.41. Dry beans \$0.35. Soybeans \$0.14. Attempted introductions: India. Factors involved in adoptability.

“Kochu chang is produced in every household in Korea from mashed boiled [soy] beans which are hung in bags for 2 to 3 months. The product is broken up, dried, and ground. It is then mixed with ground red pepper [plus salt and water] and kept for some time before use.”

This paper was presented by Leon Marie André.

Note 1. This is the earliest English-language document seen (Jan. 2007) that contains the term “roasted soy flour.” We read (p. 22): “This product is produced in small amounts and consumed with rice cake [mochi]. There is hardly any information on the nutritive value of the product.”

Note 2. This is the earliest English-language document seen (March 2009) that uses the word “kochu chang” (or “kochu-chang”) to refer to Korean-style red pepper and soybean paste (miso). Address: 1-2. Food and Agriculture Organization of the United Nations, Rome, Italy; 3. FAO Liaison Officer and adviser to UNICEF.

1385. Fischer, R.W. 1967. The use of soy in food products. *Soybean Digest*. May. p. 29, 31-32, 35-36, 38.

• **Summary:** An excellent overview, with considerable history. Contents: Introduction. Grisly hand of hunger. Soybean oil. Oriental soy foods. Soy flour and grits (with a good history of Berczeller, A.E. Staley, Shellabarger, Allied Mills, J.R. Short Milling Co. and Wytase). Isolates and concentrates. The war years (during and immediately after World War II, soy flour and grits come to be widely disliked). New products and know-how.

“Oriental soy foods:... In the Orient soybeans have, for centuries, played an important part in human diets as soy milk for infants, shoyu, or soy sauce as we call it, miso, tofu, tempeh, kinako, natto, yuba, etc.”

“Isolates and concentrates: In the mid-1930’s processes for further refining the protein factors of soy began to appear. The first 70% soy protein concentrate was turned out by Mead Johnson Co. using the Bonato process of sulfur dioxide and sulfurous acid extraction, but was discontinued for lack of adequate markets for the product. In 1936 the Glidden Co. began working on the production of an isolated protein [90-100% protein] from extracted soy flakes for industrial uses. Glidden, as a major manufacturer of resin, wanted the isolate as a stabilizer for the resin used in sizing paper to provide wet strength. By 1939 Glidden was producing an enzyme hydrolyzed isolated protein to be used with egg albumen for its whipping capacity in producing

food toppings... Over the years soy protein isolates have found their greatest application in the industrial field, particularly as paper coatings for high gloss products.”

A photo shows cans of Worthington Choplets, Soyameat (3 varieties), and Numete—all made from spun soy protein fibers. Address: Soypro International Inc.

1386. Hesseltine, Clifford W. 1967. Fermented products: Miso, sufu, and tempeh. *USDA Agricultural Research Service. ARS-71-35*. p. 170-80. May. Proceedings of International Conference on Soybean Protein Foods. Held 17-19 Oct. 1966 at Peoria, Illinois. [12 ref]

• **Summary:** Discusses: Miso. Sufu, or Chinese cheese [fermented tofu]. Tempeh. Absence of aflatoxin in fermented food products. Table 1 shows mold fermented food products tested for aflatoxin and found negative. These include shoyu, miso, Chinese black beans (Soy nuggets from Taiwan), Hamanatto, moromi, soy tempeh, wheat tempeh, rice tempeh, wheat-soybean tempeh.

Concerning sufu: “The pehtzes [molded tofu cubes] are next brined in various solutions depending on the flavor desired. A typical brine would consist of 12% NaCl and 10% ethanol (sometimes added as rice wine). In other instances, only a salt brine may be used. The molded cakes are allowed to age for about 2 months. The finished cheese along with the brine is bottled, sterilized, and marketed as sufu.”

Of all the various *Mucor* species tested for use in making, the *Actinomucor elegans* used commercially is the best proteinase and almost the best lipase producer. “This same fungus is used in China to produce a food made by fermentation of wheat gluten” Address: Northern Utilization R&D Div., ARS, USDA, Peoria, Illinois.

1387. Standal, Bluebell R. 1967. Amino acids in Oriental soybean foods: Determined by column chromatography. *J. of the American Dietetic Assoc.* 50(5):397-400. May. [18 ref]

• **Summary:** The author used column chromatography to determine the amino acid content of various Oriental soybean preparations. Methionine was the limiting amino acid in all foods. Table 1 shows the amino acid content of the following foods: Tofu, edamame (green soybeans), soybean sprouts, natto, miso, mungbean sprouts (*Phaseolus aureus* Roxb) and whole egg. Table 2 shows the amino acid ratio, essential amino acids index, protein score, and net protein utilization (NPU) for each food. Eggs had the highest NPU (90.9), followed by edamame (72.2), tofu (65.0), soybean sprouts (56.0), and natto (44.0). The first three foods are sources are good quality vegetable proteins. Address: Div. of Nutrition, Dep. of Home Economics, Univ. of Hawaii, Honolulu.

1388. Orr, Elizabeth; Adair, David. 1967. The production of protein foods and concentrates from oilseeds. *Tropical Products Institute Report No. G31*. 104 p. June. Also titled T.P.I. Report (London). [44 ref]

• **Summary:** Contents: Foreword. Acknowledgements. Introduction. 1. The use of oilseeds as a source of protein. 2. Oilseed resources. 3. The manufacture of protein flours by standard oil milling processes. 4. Some cost aspects of the manufacture of protein flour by standard oil milling processes. 5. Examples of the use of edible flours made by standard oil milling processes. 6. Full fat soya flours. 7. Oriental methods of processing soya. 8. Other processes for making protein products. 9. The distribution of protein products. 10. Current experience of making protein flours and foods from oilseeds. 11. The initiation of protein food programmes with particular reference to the role of the administrator. Appendices. 1. Protein nutrition. 2. Oilseed statistics. 3. Toxic hazards. 4. P.A.G. Guides [PAG]. 5. Aflatoxin. 6. Questionnaire. 7. Some examples of the cost of packaging oilseed-based protein foods. 8. Prices of edible oilseed products and protein flours and foods made from oilseeds. Bibliography. Chapters 6 and 7 are especially relevant to soyfoods.

“Full fat soya flour (FFSF) is manufactured in the USA by Archer Daniels Midland Co. and Central Soya, and in the UK by 3 firms: British Arkady Co. Ltd., Soya Foods Ltd., and British Soya Products Ltd. There are no official statistics for production in either country. A trade source of information has estimated UK usage of soya flour at 30,000 tons per annum, but this figure includes defatted soya flour made from meal imported from the USA. Full fat soya flours can be divided into 2 main categories: (a) flours used primarily for bleaching purposes in bread, and (b) general purpose flours. When the flour is to be used mainly for bleaching it is made from uncooked beans, since the natural enzymes in the bean must remain active until the bleaching process has been completed. It is estimated that about half the full fat soya flour made in the UK is used in bread manufacture.”

A table lists all known commercial full-fat soy flours, their composition and prices. Describes the Promo Process and Wenger Process for making FFSF, with cost data. Gives case histories for Pronutro in South Africa and Nutresco in [Southern] Rhodesia.

Chapter 7. Kinako. Fermentation products: Soya sauce (shoyu), miso, natto, tempeh. Developing the use of fermented products. Aqueous extracts: Soya milk and tofu, kori-tofu. Soya milk as a substitute for cow's milk. The package soy milk shop (including Tetra Pak and Prepac packaging; the Prepac system, developed by the S.E.A.B. Co., Villejuif, France, has a capacity of 1,500 packs/hour). Case histories for soya milk: Rural cooperatives in Taiwan, Saridele in Indonesia, and Vitasoy in Hong Kong. Soya milk made from soya flour: The 4 known manufacturers are

Promo Ltd. of the U.K. (“The product made by Promo is marketed under the brand name of ‘Velactin by the Wander company.’”), and Loma Linda Foods (Soyalac and Granogen), Mead Johnson (Sobee or Soybee), and Borden’s Soy Processing Co., all of the USA. Promo and Loma Linda use the traditional Oriental method rather than using soy flour.

Note: This is the earliest document seen (Sept. 2002) concerning Tetra Pak and soy. Address: TPI, 56/62 Gray’s Inn Road, London WC1.

1389. Tada, Masakazu. 1967. Some features of Japanese Buddhism. *British Vegetarian*. May/June. p. 225-28.

• **Summary:** For 1,850 years Japan kept no livestock farms as one sees in Europe. The main source of animal protein was only from fish and shellfish. But modern Japanese, especially those living in big cities, think animal protein is indispensable. One important feature of Japanese vegetarianism is the development and use of fermented foods, such as miso, shoyu, and natto. Address: Dr., 718 Daisen, P.O. Nirayama, Shizuoka, Japan.

1390. Weber, C.R. 1967. Three new and better large-seeded soybeans. *Iowa Farm Science* 21(12):3-5. June.

• **Summary:** Contents: Introduction. What they are. Why new varieties. The varieties. Adaptation and distribution. “Three new and improved large-seeded soybean varieties will be available to a few Iowa farmers in 1967. Developed by Iowa State University and the U.S. Department of Agriculture, the new varieties are: Disoy, Magna, and Prize.” “The large-seeded types are superior to field types for special food uses as a whole bean or for more or less direct processing methods in making miso (a fermented product) or tofu (soy curd). In addition they can be used green by home gardeners, canners and frozen food processors as well as for deep-fat frying or as dry beans in soups. Or, they may be baked as mature dry beans.”

“Large-seeded soybeans available to date, except for Kim and Kanrich, have had some limitations—poor seed yield and very poor shattering resistance (seed holding).” All the new varieties have yellow seeds and yellow hila.

Table 1 shows “Performance of new and old large-seeded and small seeded soybean varieties in Iowa, 1961 to 1966.” The varieties are: Chippewa, Disoy, Blackhawk, Magna, Hawkeye, Prize, Kanrich. For Disoy, Magna, and Prize: Yield (bu/acre): 35.6 / 37.4 / 36.5. Seed size (grams per 100): 26.6 / 26.3 / 26.3. Seed protein content: 41.6% / 38.9% / 39.2%. Seed oil content: 20.4% / 20.4% / 20.3%. Address: 1. Asst. Prof. of Agronomy; 2. Research Technician, Crops Research Div., USDA-ARS. Both: Iowa State Univ.

1391. Chico-San Inc. 1967. Chico-San Inc.—Unique foods: Retail price list. P.O. Box 1004, Chico, California. 2 p. July

15. 35 cm.

• **Summary:** This single-sheet catalog and price list, printed front and back with dark brown ink on pink paper, begins: “Dear retail customer: We encourage you to buy Chico-San products through your local health food store. When you buy directly from Chico-San you must add shipping costs to the cost of food.” Includes the following interesting items. Those followed by an asterisk (*) are marked “OEI” meaning “Our Exclusive Import.”

Specialties: Rice cakes, buckwheat cakes, millet cakes, wheat cakes, roasted rice, rice crackers*. Condiments: Tekka [miso], Tamari soy sauce*, soybean puree (miso)*, sesame salt, sesame spread, sesame butter, kuzu arrowroot*, salt plums, salt, sesame oil. Crude salt (1 lb to 10 lb). Cereals: Rice cream. Rice: Brown short grain (2 lb to 100 lb). Sesame seeds: White-brown. Black. Beverages: Ohsawa twig tea*, 16 herb tea*, Grain beverage—Koko, Grain beverage—Yano, Lotus root tea*, green tea. Noodles. Beans: Azuki red* (\$1.72/lb), Imported red, black beans [soy] (\$1.37/lb).

Note: This is the earliest English-language document seen (March 2009) that uses the term “Soybean Puree” to refer to miso. During the next decade, many macrobiotic publications referred to miso as a “Soybean puree.”

Sea vegetables: Shredded hijiki, kombu*, wakame—curly*, nori—thin sheet, kanten—sea veg gelatin. Dried foods: Lotus root, shrimp, dried fish, small fish—chirimen, tazukuri, shaved bonito [sic, bonito], dried radish [daikon], gourd strips [kampyo], mushrooms. Grain: Barley, buckwheat groats, corn meal, cracked wheat, millet, oat groats & oat meal, rolled oats, rye, wheat—hard red. Flour: One from each grain. Tooth powder jar. Cosmetics. Utensils.

Note 1. This is the earliest document seen (March 2006) that mentions Chico-San. It is also the earliest known Chico-San catalog and price list.

Note 2. This is the earliest document seen (Sept. 2002) concerning the use of miso in second generation products (tekka).

Note 3. This is the earliest English-language document seen (Dec. 2006) that uses the term “salt plums” to refer umeboshi salt plums. Address: P.O. Box 1004, Chico, California.

1392. **Product Name:** Tekka [miso].

Manufacturer’s Name: Chico-San Inc. (Importer). Made in Japan.

Manufacturer’s Address: P.O. Box 1004, Chico, CA 95926.

Date of Introduction: 1967. July.

Ingredients: Incl. miso.

How Stored: Shelf stable.

New Product—Documentation: Unique foods: Retail price list. 1967. July. Tekka [miso] is one of the condiments listed in this catalog. Spiral Foods Inc. 1971. Price list of

macrobiotic foods. Condiments: “Tekka (A traditional flavoring prepared from carrot, burdock, ginger, lotus root, Soybean Puree {Miso}, and sesame oil),...” Note: This is the earliest commercial product seen (Jan. 2009) in which miso is used as an ingredient.

1393. Hesseltine, C.W.; Wang, Hwa L. 1967. Traditional fermented foods. *Biotechnology and Bioengineering* 9(3):275-88. July. [8 ref]

• **Summary:** Contents: Summary. Introduction. Fish fermentations. Soybean and peanut fermentations: Koji, shoyu, miso, hamanatto, natto, ontjom, sufu, tempeh. Discussion: Advantages of preparing foods by fermentation. Address: NRRL, Peoria, Illinois.

1394. *Nutrition Reviews*. 1967. Soy fibers—A new approach to vegetable protein acceptability. 25(10):305-07. Oct. [6 ref]

• **Summary:** The subtitle summary states: “Fibers have been formed from soybean protein and incorporated into meat analogs. The process, its nutritional and economic aspects, and the mechanism of fiber formation are described.”

Traditional foods made from soybeans include tofu, natto, miso, and tempeh. U.S. food manufacturers have developed a new process for making “fibers from isolated soy protein, and for incorporating these fibers into meat-like analogs which may find consumer acceptance as a meat substitute in this country. These products should be cheaper than meat and can be made as or more nutritious than meat by addition of the missing vitamins and minerals.” The final products, meat analogs, typically contain (on a dry basis) 40% soy fiber, 10% protein binder (usually egg albumin), 0-50% fat and/or 0-50% flavors, colors, and supplemental nutrients.

1395. Dubawsky, Rebecca. 1967. Cooking with grains and vegetables plus: Booklet one—A beginning. Boston, Massachusetts: Order of the Universe Publications. 29 p. Illust. No index. 28 cm.

• **Summary:** This was the first macrobiotic cookbook written entirely by a Westerner. Rebecca, an older woman who never married and who later moved to Florida, collected these recipes from Aveline Kushi’s cooking classes in Boston. The dedication (p. 3) states: “The teaching of Aveline Kushi has made the information that follows possible.” The preface (p. 7), written by Michio Kushi on 20 Oct. 1967, begins: “Life is a dream. The purpose of our life is to realize our dream. Those who see a happy, peaceful dream shall become happy and peaceful...” The book has no copyright page, date or place of publication. It was printed by Jacques de Langre, 7557 Sunset Blvd., Hollywood, California 90046. Address given by Farmilant (1972) as Box 203, Prudential Center Station, Boston.

The section titled “Condiments” (p. 11-12) states: “Soya sauce—(Tamari- Japanese word for thick soya sauce)—always used in cooking—never at table, except with noodles, tempura, or soup. Miso—is a dark brown vegetable protein—much more digestible than animal protein.” Recipes are given for making Scallion miso, and Carrot top miso.

The section titled “Beans” (p. 17) mentions black beans: “Dried beans—*aduki, navy, pinto, kidney, black beans and chick peas*—double in bulk on cooking. 1 cup = 4 servings (side dish to main course)—wash 3 times and soak beans 1 to 3 hours before using.” It then warns: “Cook *black beans* by pot—they clog pressure cooker.” The section titled “Soups, Sauces, and Spreads” (p. 19) includes a recipe for “Vegetable, soya vegetable, and miso vegetable soup.” There are simple recipes for: Miso sauce (p. 22). Cooking black beans (p. 25). Vegetable soya soup (p. 27). Vegetable miso soup. Vegetable sauces (with soya or miso, p. 27).

Description of book: The covers are dark green, with the title printed in black ink and all lowercase letters. In the lower left corner of the cover is written: The Order of the Universe Publications, Box 203 Prudential Center Station, Boston, Massachusetts—02199. At the bottom of page 29 (the last numbered page): “Booklet II, *More About Grains and Vegetables*, will come out as soon as possible.” Near the bottom of the rear cover: “November 1967. Revised edition—July 1969. \$1.00.” Address: Boston, Massachusetts.

1396. Ebine, Hideo. 1967. Miso no seibun. I. Chisso kagô-butsu [The constituents of miso. I. Nitrogen compounds]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 62(11):1210-14. Nov. [49 ref. Jap] Address: Norinsho Shokuryo Kenkyujo.

1397. Ilany-Feigenbaum, J.; Laxer, S. 1967. Color development in Israeli miso type products and its possible use for quality control. *Food Technology* 21(11):113-14. Nov. [13 ref]

• **Summary:** Miso darkens in color as the fermentation time increases. “When stimulated with koji and miso-extracted enzymes or with taka-diastrase, the time required to produce the dark brown color for the Israeli type miso products has been shortened from several months to a few weeks.” This browning reaction is viewed as the result of interaction between the products of the activity of the proteolytic enzymes and amylases of koji and if its extracted enzymes or taka-diastrase. It is suggested that the intensity of this color could be used in quality control of miso or miso type products. Address: Dep. of Biochemistry, Bar-Ilan Univ., Ramat-Gan, Israel.

1398. Ebine, Hideo. 1967. Miso seibun ichiran. II. Tô-ruì, yuki-san oyobi sono ta no seibun [A glance at miso’s constituents. II. Sugars, organic acids, and other

components]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 62(12):1368-73. Dec. [57 ref. Jap]
Address: Norinsho Shokuryo Kenkyujo.

1399. Murakami, Hideya; Takase, S.; Ishii, T. 1967. Non-productivity of aflatoxin by Japanese industrial strains of *Aspergillus*. I. Production of fluorescent substances in agar slant and shaking cultures. *J. of General and Applied Microbiology (Tokyo)* 13(4):323-34. Dec. [14 ref. Eng]
• **Summary:** “Two hundred and fourteen strains of the *Aspergillus* were cultured both in agar slants and in a liquid medium by shaking, and the productivity of aflatoxins was studied, respectively, by observation of the fluorescence of the medium and by fluorometry and thin-layer chromatography, using the aflatoxin-producing strain ATCC 15517 as a control.” None of the resulting products were aflatoxins. “However, the fact does exist that certain strains belonging to the *Aspergillus flavus-oryzae* group or the *A. flavus* group produce aflatoxins...”

“Materials and methods—Microorganisms: We used 214 strains including 176 strains of the yellow-green-spored *Aspergillus* and 38 strains of the other *Aspergillus*. All of the formers were isolated or collected in our institute during 1904 to 1965, consisting of 100 strains for Sake brewing, 32 strains for Miso brewing and 44 strains for Shoyu brewing. Among the latter 38 strains, 16 strains were those used for manufacturing Shôchû (Japanese distilled liquor) and the remainings [sic, rest] were non-industrial strains received from the Institute of Applied Microbiology, University of Tokyo. Aflatoxin-producing ATCC 15517 was sent from the National Institute of Health, Tokyo, and used as a control.”
Address: Research Inst. of Brewing, Tokyo.

1400. Ebine, Hideo. 1967. Evaluation of dehulled soybean-grits from United States varieties for making miso. Tokyo: Central Miso Inst., Echizenbori 3-3, Chuo-ku. 168 p. Final technical report, USDA P.L. 480. Project UR-A11-(40)-2. Grant No. FG-Ja-101.
Address: Central Miso Inst., Echizenbori 3-3, Chuo-ku, Tokyo.

1401. **Product Name:** Village Soyburger (later renamed Village Soy Patties).

Manufacturer's Name: Village Manufacturing Co.

Manufacturer's Address: Berkeley, California.

Date of Introduction: 1967.

Ingredients: Whole soybeans, brown rice, carrots, oats, seasonings.

Wt/Vol., Packaging, Price: 3.25 oz patties, sold in packs of four.

How Stored: Frozen.

New Product—Documentation: Label and story in Living Lightly catalog, ca. 1982. “It all started in Berkeley, California, in 1967, when a student at the University of

California majoring in dietetics, mixed together the ingredients, constituting the first ‘Village soyburger.’ They were first sold at a sandwich stand just outside the campus.”

Letter from Somari Das of *Communities* magazine, Route 1, Box 191, Oroville, California 95965. 1975 or 1976. June 26. “Yes, we are *very* interested in learning to prepare tofu & miso on a community scale. We are a group of 12 adults and 3 children on 20 acres in Northern California. We have two cottage industries, one of them being a *soyburger* business, so we are pretty familiar by now with the marvelous soybean. We use miso and tamari to make our soyburgers and they are very tasty. At home, we eat a lot of tofu and miso soup, but we buy these products from local distributors rather than produce them ourselves. I am a student of Oriental medicine and feel like my education would be greatly enhanced by learning to prepare these traditional foods at home.—Om Tao, Somari Das.”

Talk with Mara Devine. 1988. April 7. The business was started by two women. A collective she belonged to bought the business from these two women in the early 1970s and did it until 1973, when they sold the business. It was made with cooked soybeans (not tofu) pressure cooked with miso. They would run them thru a Hobart grinder then mix in oats as a binder, carrots, maybe onions or garlic powder, then put it through a patty machine. The patties were then frozen. They were not fried; most people fried or baked them at home. The company also made a Frozen Rice-Patti. Their plant was in Oroville, across the street from the high school. The product is still being made, probably in Oroville. Mara now runs her own company named Soy Devine (which see).

1402. Indonesia. Departemen Portanian [Indonesian Department of Agriculture]. 1967. Mustika rasa; memuat resep 2 masakan Indonesia dari Sabang sampai Merauke. [Gems of taste: Indonesian cookery]. Djakarta, Indonesia: Departemen Portanian [IDA]. xi + 1,123 p. Illust. (part color). 22 cm. [Ind]*
Address: Indonesia.

1403. Joshi Eiyo Daigaku (Women's College of Nutrition). 1967. Tôfu, mame, miso ryôri: Jû-ni ka getsu [Tofu, soybean, and miso cookery throughout the 12 months]. Tokyo: Joshi Eiyo Daigaku Shuppan-bu. 226 p. Revised 1973. Illust. Index. 18 cm. [Jap]
Address: Tokyo, Japan.

1404. Li chi: Book of rites. An encyclopedia of ancient ceremonial usages, religious creeds, and social institutions. Translated from the Chinese by James Legge. 2 vols. 1967. New Hyde Park, New York: University Books. See vol. 1, p. 459-63. Edited with an introduction and study guide by Ch'u Chai and Winberg Chai. 24 cm. *

• **Summary:** Ying-shih Yü (1977, p. 58) notes: “What makes the Ma-wang-tui discovery doubly interesting is the

amazing degree to which the food list from Tomb No. 1 agrees with the list given in the 'Nei tse ('Internal [Family] Regulations') chapter of *Li chi*. Virtually all the foodstuffs and prepared dishes listed above can be found in that chapter (*Li chi*, 8:19a-21b; Legge 1967, 1:493-63)."

1405. Manyôshû [The Manyoshu: A new and complete translation, by H.H. Honda]. 1967. Tokyo: Hokuseido Press. xii + 345 p. 31 cm. [Jap]*

• **Summary:** The translator, Heihachirô Honda, was born in 1893.

1406. Nakano, Masahiro. ed. 1967. Hakkô shokuhin [Fermented foods]. Tokyo: Korin Shoin. 244 p. See esp. p. 81-101. [Jap]

• **Summary:** Includes sections on soymilk yogurt (cultured with *Lactobacillus bulgaricus*) and *nyu fu* [fermented tofu].

Chapter 6, *Nyu fu* notes that this is an ancient food that came from China and Taiwan, but has never become a part of Japanese cuisine. In the United States (and English) it is known as "Soybean cheese" and "Vegetable cheese," while in China it is known as "Nyufu" as well as Chaw taufu, Sufu, Funyu, etc.

6.1.2—Places of production and varieties: Nyufu is made mainly in the middle to southern four coastal provinces of China. These include (pinyin / Wade-Giles): Jejiang / Chekiang (Jap: Sekkô), Jiangsu / Kiangsu (Jap: Kôso), Fujian / Fukien (Jap: Fukken), Guangdong / Kwangtung (Jap: Kanton). A lot of Nyufu is also made in Taiwan, which is located off the coast of Fujian province.

Since nyufu has been produced for a long time over a vast area, there are many varieties. A study conducted in the 1920s found the varieties shown in chart 6.1 in the Shanghai market (Shanghai is in Jiangsu province near the mouth of the Yangtze River).

(1) Pickled without mold on the tofu. (i) Jianning-dofu: Drain then dry the tofu, add salt, and pickle in jiang or the residue / dregs left after making soy sauce

(ii) Doufuru: Drain then dry the tofu. Sprinkle it with salt then pickle it in koji.

(2) Culture mold on small cubes of tofu until a fragrant white mycelium surrounds each cube, then pickle.

(iii) Jiangrufu: Pickle in jiang or the residue / dregs left after making soy sauce.

(iv) Honjiang rufu [red jiang fermented tofu]: Pickle in a mixture of red rice / angkak (a red koji made by growing *Monascus* mold on rice) and the residue / dregs left after making soy sauce.

(v) Zaorufu: Pickle in sake lees.

(vi) Hongrufu: Pickle in red sake lees.

(vii) Jiujia rufu: Pickle in white sake / daku-shu, like unrefined sake (*doburoku*).

(viii) Xiangrufu (fragrant rufu): Pickle in jiang with olive leaves, fragrant mushrooms, etc.

Dr. Masahiro Nakano was born in 1907. Address: National Food Research Inst., Tokyo.

1407. Riesman, David; Riesman, Evelyn Thompson. 1967. Conversations in Japan: Modernization, politics, and culture. New York, NY: Basic Books, Inc. xii + 371 p. See p. 58. Index. 25 cm.

• **Summary:** These are the authors' published diaries and tape recorded conversations with Japanese during a 2-month visit to Japan from Sept. 30 to Dec. 2, 1961. The visit was sponsored by the Japan Committee for Intellectual Exchange. The husband is a Harvard professor; his wife accompanied him. On 12 Oct. 1961 the authors visited Mr. Sekihara (an architect) and his wife at their home in Tokyo. "The whole effect of the room... was a blending of the cosmopolitan and the Japanese, like the meal, which began with cocktails and hors d'oeuvres, then went on to raw fish and delicacies such as fresh ginger root, soybean soup, meat and vegetables, rice and pickle, then on top of all this, apple pie and green tea. It was served buffet style." Note: "Soybean soup" probably refers to miso soup. The authors also enjoyed raw fish and seaweed (p. 319). Address: Brattleboro, Vermont; Cambridge, Massachusetts.

1408. *SoyaScan Notes*. 1967. Chronology of the work of Arran Stephens with natural foods, vegetarianism, and Lifestream Natural Foods Ltd. (Vancouver, then Richmond, BC, Canada). Part II (1967–1971). 24 Sept. 1992. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1967—Arran begins his first food business when he starts the Golden Lotus restaurant at 2936 West 4th Ave. (at Bayswater), Vancouver. Serving natural, vegetarian and macrobiotic foods, it is the city's first vegetarian restaurant. Before he left India, his Master had encouraged him to take up this "right livelihood" and promised to extend "all feasible help, both inside and outside." A place was found and the necessary money appeared as if by magic. Most of the workers were spiritual seekers. All lived upstairs, above the restaurant.

Arran was one of the cooks; he had learned how to cook brown rice, veggies, hijiki, wakame and miso soup while working as a waiter at the Paradox Restaurant in New York City in 1964; he learned the rest by trial and error, including the use of macrobiotic and vegetarian cookbooks such as *Vegetarian Cookery*, by Pietro Rotondi, and (later) *Ten Talents* by Frank and Rosalie Hurd.

"Amazingly, the rather monastic rules—including regular meditation and celibacy—were accepted and enthusiastically followed. In the communal setting, all worked without pay for the first 9 months. "Before the year was out, bills and loans were entirely repaid and all began receiving hourly wages, benefits, room and board. The numbers attending our weekly satsangs outgrew the upstairs, and the venue shifted downtown to the YMCA." One photo shows Arran

standing in front of the Golden Lotus restaurant in 1968 and another standing inside in 1969.

1968 Oct.—Arran and three others return to India to be with Master Kirpal Singh, having received his written permission. On the way they visit Ram Das (the former Richard Alpert) who was in retreat at his father's large New Hampshire estate. In India Arran lives close to Kirpal Singh. The Master will not initiate those who beg for food, only those who earn an honest living.

1969 March 4.—Arran, with the Master's blessing, marries an Indian woman, Rattan Mala Bagga, age 22, in a traditional Sikh marriage. She comes from a good family, has an M.A. degree, and is a lecturer at a girls' school in Moradabad. The Master, who changes her name to Ratana ("jewel") encourages family life and the tender bonds of matrimonial love and responsibility.

1969 April—Arran and sari-clad Ratana return to Vancouver, Canada, after nearly 6 months in India. He has changed from ascetic to householder. They settle into a little room above the restaurant, sharing a bathroom with 14 others and working, on average, 12-16 hours a day to get the restaurant firmly established. In May and December, Kirpal Singh writes with wise advice. As a result: "In three months we saved \$1,000 to make a down payment on a little two-bedroom house with a garden. Ratana was already pregnant with our first child, and we had had our fill of communal living."

"Considerable agitation began among the more left-leaning workers to turn the Golden Lotus into a commune. After a lot of soul-searching, we decided to make a clean break, and sold the restaurant to the group for a paltry \$3,000, wishing them all success." Soon after the Golden Lotus restaurant became defunct.

1970 Jan.—Arran opens a little store named Jyoti Importers and Natural Foods at West 4th Ave., near Yew Street on the same street as the Golden Lotus, but on top of the hill. He sells "Indian bedspreads, clothing, classical musical instruments, and healthy and organic foods. Food soon edged out the other wares. It became obvious that my destined vocation was connected to organic foods and wholistic living." After several years of growth, the business moves into a much larger building at 1813-1817 West 4th Ave., a corner location and opens as Lifestream Natural Foods on 1 Jan. 1971. Then Lifestream expanded to a second store on Broadway at Traflagar (See: *Shared Vision* 1990, p. 9).

1970 April 4—Arran and Ratana's first child is born at St. Paul's hospital in Vancouver by natural childbirth. Master telegraphed. "You may name the baby Shanti" (the ancient Sanskrit word for "peace"). Note: All the Stephens' children were born at this same hospital. Arran writes: "I was present at the miracle of each birth. On the birth of two of our children, Ratana was blessed with the vision of our Master, and she also experienced great light within."

1970 spring—On an impulse, Arran gives half of his business, Jyoti, to Peter Harwood, his friend and fellow disciple of Kirpal Singh; Peter becomes a working partner.

1970 June—Arran attends the founding meeting of Organic Merchants (OM), held outdoors on the side of Mt. Shasta. Lifestream becomes one of the founding members. OM was the first trade association for natural food retailers on the West Coast and the first organic trade association. Arran also remembers OM meetings at Blake Rankin's, at Lifestream, and at Pajaro Dunes.

1971 (1990 *Shared Vision* article says Lifestream opened 1970 Jan. 1). Jan. 1—Arran opens Lifestream Natural Foods in Vancouver, British Columbia, Canada, just north of the U.S. border, at 1813-1817 West 4th Ave. (at Burrard). It is Canada's first large natural foods retail store. His father suggests the name. "Free fresh carrot juice drew in crowds; an electric powered 20-inch stone-buhr mill, visible through a window from the street, ground tons of fresh whole-grain flour every day; alfalfa sprouts were grown in our nearby warehouse / factory; fresh nut butters were roasted and milled to order; natural candy bars and cookies were extruded and baked; egg-free cakes and muffins popped from the ovens; pies, crunchy granola, bulk foods, and wholesome artisanal breads were baked and sold by the hundreds. These were all firsts in Canada." The inspiration came from many sources, but was not macrobiotic. The Lifestream brand was represented by a woman gathering sheaves of wheat into a basket. "Teachers brought classes of school children on tours to see how wholesome foods were made. The store became so busy that it was often difficult to wade through the crowds of shoppers and hangers-on... Sales doubled every year for seven years, and the business quickly branched out into wholesale distribution."

1971 or 1972—A separate small vegetarian restaurant, named Mother Nature's Inn (MNI) was started as a *separate* business in the rear of the large retail store (on West 4th Ave.) by Victor Yankowich,... But after about a year MNI was purchased from Victor (for a pittance) for Ratana, who showed her business skills by running it very successfully and profitably. The company's best-known products are its line of Essene sprouted grain breads—moist, heavy, and delectable.

1972—Lifestream opens its own Bread of Life bakery (100% owned by Lifestream) in North Vancouver because of the area's scarcity of organic and natural baked items. The original Lifestream Essene Bread, developed by Arran at that bakery, was one of the Lifestream's first baked products. Essene Bread was always made with organic grain—from the Alvin Scheresky and David Orchard organic grain farms in Saskatchewan province.

A 1971 color photo shows Arran, smiling, holding a loaf of Essene Bread.

1971—At about this time Lifestream Natural Foods Ltd. moves to 724-26 W. 6th Ave., Vancouver 9, BC, Canada.

This was a combination headquarters, warehouse, manufacturing and packaging facility. It housed a flour mill, alfalfa sprout operations, nut butter operation, tamari nut roasting and packaging, plus packaging a wide range of organic grains, beans, nuts, seeds, flours, etc. When this facility opened, the only other Lifestream operation was the retail store.

1971—Since there was a scarcity of natural and organic foods, Lifestream began to do wholesale distribution. Frank Ford, founder of Arrowhead Mills in Texas, appointed Lifestream as distributor in Canada for the entire Arrowhead Mills' range of organic grains, beans, flakes, hot cereals, and flours. Hundreds of products were developed and marketed under the Lifestream brand: Breads, other baked goods, fruit & nut-based energy bars, juices, trail mixes, tamari roasted nuts and seeds, preserves, yogurt, granolas, mueslis, sprouts, soyfoods, expeller-pressed oils, and a wide range of imported Japanese macrobiotic products. During the 1970s Lifestream's profits came from a blend of manufacturing, wholesaling, and retailing—but not even the accounts knew what percentage of the total came from each of these activities. Continued. Address: 724-26 W. 6th Ave., Vancouver 9, BC, Canada.

1409. Susan's Balanced Foods: Yin–Yang. 1968. Retail price list: Terms and prices. Valley Center, California. 4 p. Jan. 1. 28 cm.

• **Summary:** This catalog is printed with black ink on orangish-yellow paper. The title on page 1 is printed in red. The contents look similar to those in the Chico-San catalog. Soy products include tamari, miso, soy-beans, soy-bean flour. They also sell: Azuki red beans, sea vegetables, rice crackers, herb teas, and many breads. Address: Remy Ranch, 29757 Anthony Road, Valley Center, California 29757. Phone: 745-6336.

1410. *Miso no Kagaku to Gijutsu (Miso Science and Technology)*. 1968—. Serial/periodical. Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo 104, Japan. Formerly Miso Gijutsu up to No. 166. This new name began in Jan. 1968. In 1983, issue No. 347 became Vol. 31, number 1. As of April 1989 the journal has never published English abstracts. [Jap]
Address: Tokyo, Japan.

1411. Takeyama, Shinji. 1968. Edo amamiso ni tsuite [On sweet red miso]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 63(1):23-26. Jan. [11 ref. Jap]
Address: Abumata Miso K.K.

1412. *Time*. 1968. Pacific paradise. 91(5):60. Feb. 2.
• **Summary:** This article is about education in high schools. About California's far-out, freedom-loving Pacific High School, located about 10 miles south of Palo Alto in the

Pacific Coastal Range. Surrounded by mountains, in a 40-acre valley, "40 long-robed youths were introduced last week to the mysteries of Zen. Under the direction of a roshi (teacher [Zen master]), they spent long hours in meditation on black zazen cushions, chanted incantations through meals of miso soup,... and Tibetan barley bread, practiced Zen breathing exercises."

Note: This is the 2nd earliest known reference to "miso" in *Time* magazine.

1413. Ebine, Hideo; Yamamoto, Kôki. 1968. Dappi daizu ni yoru miso jôzô. II. Dappi daizu no miso genryô to shite no hyôka [Miso manufacturing from dehulled soybeans. II. Evaluation of dehulled soybeans for making miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 23. p. 1-4. Feb. [11 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1414. Ebine, Hideo; Sakano, Keichi; Kizaki, Michiyo; Kimura, Haruo. 1968. Eiyô kyôka miso no kenkyû. VII. Mechionin oyobi yûdôtai no miso e no tenka [On the manufacture of enriched miso. VII. Addition of L and DL form methionine and methionine sulfoxide]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 23. p. 9-13. Feb. [5 ref. Jap; eng]
• **Summary:** L-methionine, DL-methionine and methionine sulfoxide were added to two varieties of miso at the level of 0.2%. One was a light-yellow rice miso and the other a dark-colored rice miso. One group was pasteurized at 60°C; the other was not. Both were allowed to stand at 30°C for one month. There was no significant loss of methionine. In general, the non-pasteurized miso was organoleptically superior to the pasteurized miso. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1415. Ebine, Hideo; Nakano, M.; Kuroha, I. 1968. Eiyô kyôka miso no kenkyû. VI. Mechionin no tenka jiki to seihin ni oyobosu eikyô [On the manufacture of enriched miso. VI. Effects of added methionine on the quality of miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 23. p. 5-8. Feb. [10 ref. Jap; eng]
• **Summary:** The lysine content of rice or barley miso is comparatively high, whereas the content of sulfur-containing amino acids and tryptophan is low. DL-methionine was added to unripened miso at the level of 0.2–3% at the time the cooked soybeans were mixed with salted rice koji and ordinary salt. It was allowed to ferment at room temperature for a month and then at 30°C for 3 weeks. During the fermentation, much of the added methionine was lost, accompanied by an off-flavor, probably due to the activity of microorganisms in the miso. This drawback was improved by pasteurization of miso to which DL-

methionine had been added—after it had ripened adequately. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1416. Sanae Restaurant. 1968. Introducing Sanae Restaurant, 272A Newbury Street, Boston (Leaflet). Boston, Massachusetts. 1 p. Single sided. 28 cm.

• **Summary:** “Dear Patrons and Friends: Sanae Restaurant has been designed as a unique, friendly eating place where everyone can enjoy genuine quality food in a family atmosphere. Since the present trend towards artificial, unnatural food is becoming more prevalent, we are trying to present real home cooking, combining food that is as natural as possible with the soundest old-fashioned methods of preparation. Our menu is centered around whole grains, with fresh vegetables, fish and seasonal fruits as side dishes.”

“We use real sea salt, soy bean paste (miso) and soy sauce (tamari) that has been processed and aged by natural methods, and home-made sesame salt (gomasio)... ‘Sanae’ means a young spring cereal plant which has a hope for a bright future at harvest time.

Hours: 3-10 Sunday-Thursdays, 3-11 Friday & Saturday. Closed Mondays.

A photo near the top shows (between two large hearts, left to right): Peggy Taylor, Evan Root, Connie Frank, and Martin Russell, each dressed in a white cook’s apron. Address: 272A Newbury St., Boston, Massachusetts. Phone: 247-8434.

1417. Yoshikawa, Seiji. 1968. [Food preference pattern and acceptance of miso soup]. *Shokuryo Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 23. p. 204-210. March. [Jap; eng]

• **Summary:** Reprinted from *Miso Gijutsu (Miso Technology)*. No. 160. p. 4-9 (1967). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1418. Saikowski, Charlotte. 1968. America’s foods expand Japan’s menu. *Christian Science Monitor*. April 19. p. 6.

• **Summary:** Orville Freeman, U.S. Secretary of Agriculture, wants to export more American products to Japan. In Tokyo, he and his wife attended the recent “American Festival of Fun, Food, and Fashion.” He noted that “The Japanese diet is still low in protein...” which means a great market for American brooder chicks.

“Such traditional Japanese foods as ‘miso’ (soybean paste), ‘shoyu’ (soy sauce) and ‘tofu’ (bean curd) are made for the most part from American-produced soybeans.” Address: Staff correspondent.

1419. Watanabe, Bunzo. 1968. The Japanese oilseed processing industry. *Soybean Digest*. May. p. 36, 38.

• **Summary:** Tables show: (1) Imports of soybeans to Japan during calendar year 1967 by country of origin: USA 81%, Red China 19%, Other countries 1%. Total imported: 2,169,000 metric tons (79,710,000 bushels). (2) Consumption of edible refined oils and fats in Japan (1963-1967). Per capita consumption rose from 13.58 lb in 1963 to 18.08 lb in 1967. (3) Total oils and fats production in Japan (1963-1967), imports and domestically grown, by oilseed type. Soybeans are by far the most important oilseed, followed by rapeseed. Rice bran is the main domestic source of oil. (4) Consumption of soybeans in Japan classified by utilization (1963-68, 1,000 metric tons). The following figures are for 1968 (1,000 metric tons): Crushed for oil 1,739. Foods: Tofu and aburage 294. Miso 170. Natto 50. Frozen tofu 40. Shoyu 15. Kinako 13. Other 70. The total used for food grew from 497 in 1963 to 652 in 1968.

Photos show: (1) American Soybean Association (ASA) executives seated around a table holding chopsticks at tempura luncheon with Mr. Watanabe, who is president of the Japanese Oilseed Processors Association, and other Japanese oilseed officials. From left, Shohei Takai, managing director Japan Oilseed Processors Association (JOPA); S. Yamada, manager oils and fats division, Ajinomoto Co., Inc; Scott Sawyers, ASA county director in Japan; Chet Randolph, ASA executive vice president; Mr. Bunzo Watanabe; and Hiroshi Higashimori, chief secretary JOPA. Tempura is a substantial outlet for soybean oil. (2) Portrait of Bunzo Watanabe. Address: Japanese Oilseed Processors Assoc., Japan.

1420. Chico-San Inc. 1968. Chico-San Inc.—Unique foods: Retail price list. P.O. Box 1004, Chico, California. 2 p. June 1. 35 cm.

• **Summary:** This single-sheet, dated catalog and price list, printed front and back with dark brown ink on pink paper is almost identical to the edition of 15 July 1967 in appearance, content, and pricing.

However two new condiments have been added: Dehydrated tamari, and Seitan.

Note: The entry for “Seitan” (actually misspelled as “Sietan,” but spelled correctly in the company’s next catalog) is different from all other entries in this catalog, since no weight, no price, and no explanation is given—as if Chico-San has ordered the product, but it has not yet arrived. Moreover, no “OEI” (“Our exclusive import”) appears after the word “Sietan.” Address: P.O. Box 1004, Chico, California.

1421. *Health Food Business Review*. 1968. Soy bean puree: Miso. Ancient Oriental health food. Boost your profits with macrobiotics! July. p. 44-45.

• **Summary:** Chico-San Soybean Puree can be used to make delicious miso soup for breakfast. “Miso, or Soybean Puree, in particular Chico-San Soybean Puree, is a naturally

fermented preparation of soybeans, barley, salt and water. It is devoid of chemicals, additives and processing that have made more modern foods such commercial triumphs. Using traditional methods employed centuries ago, Soybean Puree is fermented by the use of a delicately cultivated enzyme, *Aspergillus oryzae*, and aged for a period of at least eighteen months. During this time a very complex enzymatic action of molds, yeasts and bacteria are left to chemically interact.” The nutritional composition of “Barley miso” is given (based on S. Yamada, editor. 1957. *Manual of the Fermented Food Industries of Japan*. Tokyo, p. 44).

“Thy food shall be thy remedy”–Hippocrates.”

Note: This is the earliest article seen in a new wave of popular articles on miso.

1422. Product Name: Mugi Miso, or Hacho Miso.

Manufacturer’s Name: Erewhon Trading Co., Inc. (Importer). Imported from Muso Shokuhin in Japan.

Manufacturer’s Address: Newbury St., Boston, Massachusetts.

Date of Introduction: 1968. August.

Ingredients: Hacho miso: Soybeans, water, sea salt.

Wt/Vol., Packaging, Price: 16 oz.

How Stored: Refrigerated preferably.

New Product–Documentation: Erewhon Trading Company Inc. 1970. Jan. 1. Wholesale-retail catalogue. Soy bean products: The following types of miso were imported from Japan: Hacho miso (“Soybean puree made from soybeans, salt & water. No chemicals used in fermentation. Aged at least 18 months”; 1 lb, 2 lb, 44 lb keg). Mugi miso (“Soybean puree. A lighter miso made with barley”; 1 lb, 2 lb, 44 lb keg).

Advest Co. 1972. Nov. “Private placement \$500,400. Erewhon Inc.” On page 30 is a photocopy of the label for “hacho miso (soybean paste–soybeans only).” The text reads: “Hacho miso comes from one of the oldest manufacturers of miso in Japan. The company was originally established in 1362 and has been continuously processing miso since that time. In olden times boats would come up the Yahagi River near Nagoya bringing the raw materials for miso including the big stones which were placed on the kegs during aging. The water used in Hacho Miso is drawn from artesian wells located along the same river. The fermentation storerooms and the large cedar wood kegs used in producing Hacho Miso are over one hundred years old. The miso during its two year aging process is placed and situated so that it can freely interact with the four changes of season. Hacho Miso is easily digested and absorbed because the proteins are in a free state due to aging and fermentation. It can be used in the preparation of soups, sauces, and vegetable dishes, adding a rich and hearty flavour to them. New weight: 32 oz. (2 lb).
Ingredients: Well water, soybeans, and sea salt. Distributed by Erewhon Trading Company, Inc.”

Label. 1977, undated. 3.5 by 4.75 inches. Paper. Olive green, greenish brown on white. Vine illustration (hacho miso). “Erewhon Miso is produced by enzymatic fermentation and aging of soybeans a minimum of twenty-four months in wooden kegs. Its concentrated flavor makes it an ideal seasoning for enriching the taste of soups, sauces, vegetable dishes, noodles, casseroles, and fish. Erewhon Miso is completely free of chemical preservatives. Store in a cool place.” Note: In 1971 Erewhon was located at 342 Newbury Street, Boston. Phone: 262-3420.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 236. In 1968 Erewhon started to import miso and shoyu from Japan. “A wholesale and distribution company was started that year and soon it was trucking a line of fine Japanese imported red, barley, and Hacho misos to a growing number of natural food stores.” By 1970 sesame miso and tekka [miso] were added to the Erewhon line. By 1976 brown rice (genmai) miso was added.

Ad (7.5 by 13 inches, full color) in *Natural Foods Merchandiser*. 1989. Feb. p. 25. “Erewhon... Macrobiotic foods you can recommend with confidence.” There are now 4 varieties of miso under the Erewhon brand: Hacho (note new correct spelling), genmai, kome, and mugi.

1423. Product Name: Moromi.

Manufacturer’s Name: Erewhon Trading Co., Inc. (Importer). Imported from Muso Shokuhin in Japan.

Manufacturer’s Address: Newbury St., Boston, Massachusetts.

Date of Introduction: 1968. August.

Wt/Vol., Packaging, Price: 7 oz.

How Stored: Refrigerated preferably.

New Product–Documentation: Erewhon Trading Company Inc. 1970. Jan. 1. Wholesale-retail catalogue. Products imported from Japan include: “Moromi–A thick sauce removed from the bottom of the soy sauce kegs after fermentation. Its uses are unlimited in soups & sauces”; 7 oz.

1424. Sawyers, Scott. 1968. *The soybean market in Japan, Taiwan, and Korea*. *Soybean Digest*. Sept. p. 68, 70-72.

• **Summary:** The American Soybean Assoc. office in Japan, known as the Japanese American Soybean Institute, has concentrated on mass media and consumer promotions to increase the utilization of soybean oil, meal, and traditional foods prepared from soybeans. In Japan, this means liquid cooking oil, tempura oil, salad oil, vegetable oil margarine, miso, tofu, and soy sauce. Also, the growing preference for more meat, milk, and eggs in the Japanese diet requires the use of more soybean meal to support an expanding livestock and poultry industry. Efforts were made to popularize two slogans: “Take Oil Once a Day for Foods Cooked with Vegetable oil.” And: “Take Oil for Health, Stamina, and Vitality.” The key focus is to encourage the Japanese to

consume more soy oil in their diet. A portrait photo shows Scott Sawyers. Address: Country Director, Japanese American Soybean Inst.-American Soybean Assoc., Tokyo.

1425. Hazelton, Nika. 1968. For pyromaniac and pasta-lover. *New York Times*. Dec. 1. p. BR28.

• **Summary:** Short reviews of cookbooks published this fall, including *Zen Macrobiotic Cookbook*, by Michel Abehsera (University Books, \$5.95). The book “pulls in Zen as window dressing for an undistinguished effort. Though much is made of Zen argot, the philosophy is never really explained, nor is it related properly to food.” The reviewer finds the book “very objectionable...”

1426. Narayana Rao, N.; Dwarakanath, C.T.; Ramachandra Rao, T.N. 1968. Development of pre-digested protein-rich food based on Indian oil seed cakes and pulses. I. *J. of Food Science and Technology (Mysore, India)* 5(4):198-201. Dec. [10 ref]

Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1427. Pickles, H. 1968. Are traditional fermented foods and lactic acid nutrition out of date? *British Vegetarian*. Nov/Dec. p. 520-25.

• **Summary:** Includes a discussion of soy sauce, Worcester Sauce, and miso, and of the writings of Dr. Johannes Kuhl (Professor, the Nuclear Research Institute in Rome), and O. Warburg (the Nobel Prize winner).

“In Asia, mould-enzymes are used to break down soya-beans rich in proteins, which making the spicy sauces [i.e., soy sauce]. The well-known Worcester Sauce is made from a Japanese recipe from the enzymes of soya beans with the same mould *Aspergillus orsae* [*sic, oryzae*] that is also present in correctly-prepared muesli.”

1428. Ebine, Hideo; Ito, Hiroshi. 1968. [Evaluation of artificial rice by extrusion cooker as raw materials for making miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 170. p. 1-. [Jap]*

Address: National Food Research Inst., Tokyo.

1429. Ebine, Hideo. 1968. [Detection of defatted soybeans in miso by a microscopical method]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 177. p. 23-. [Jap]*

Address: National Food Research Inst., Tokyo.

1430. Ebine, Hideo; Sakano, K. 1968. [Production of miso from natto]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 173. p. 23-. [Jap]*

Address: National Food Research Inst., Tokyo.

1431. Ebine, H.; Kimura, H.; Wadaka, H. 1968.

[Application of *Rhizopus* for shoyu manufacturing]. *Chomi Kagaku (Seasoning Science)* No. 15. p. 1-. [Jap]*
Address: National Food Research Inst., Tokyo.

1432. Ebine, Hideo; Matsushita, Z.; Sasaki, H. 1968.

[Evaluation of U.S. soybeans as raw materials for making miso: (Part 1) Miso manufacturing test on a laboratory scale (1)]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 181. p. 19-. [Jap]*
Address: National Food Research Inst., Tokyo.

1433. Ouchi, Ichiro; Mochizuki, Tsutomu. 1968. Miso jukusei-chû no chisso seibun no shôchô ni kansuru kenkyû. III. Miso jukusei-chû no yûri amino-san no shôchô ni tsuite [Studies on the degradation of soybean protein during miso making. III. Changes in amino acid content]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Food Science and Technology)* 15:418-21. [11 ref. Jap]

• **Summary:** “Changes in free amino acids during miso making were investigated. Total free amino acids showed a rapid increase in the first 10 days of fermentation and then a slow increase in the latter part. Except for glutamic acid, aspartic acid and proline, liberation of individual free amino acid indicated the same tendency. Free glutamic acid, aspartic acid and proline increased almost linearly with progress in fermentation up to 50 days. The rate of liberation was high for lysine, arginine, threonine, serine, proline and tyrosine, and low for valine, histidine, glycine and aspartic acid. Glutamic acid showed the lowest liberation among all other amino acids.” Address: Shinshu Miso Research Inst., Nagano.

1434. Abehsera, Michel. 1968. Zen macrobiotic cooking. New Hyde Park, New York: University Books/Avon. 224 p. Index. 18 cm. [15 ref]

• **Summary:** Abehsera’s first macrobiotic cookbook contains a strict approach to macrobiotics. Includes many short stories by and about George Ohsawa. Contains the following soy-related recipes: Miso spread (with sesame butter, p. 105). Miso onion spread (p. 106). Miso in green (with green pepper and scallion, p. 106-07). Miso soup (p. 117). Chinese soup (with miso, p. 120). La belle jardiniere (with miso, p. 123). Koi-koku (with carp, burdock, and miso, p. 125-26). French onion soup (with tamari, p. 132). Soup stock made with miso paste (p. 137). There are no tofu or seitan recipes in this book. It is not a vegetarian cookbook, since many recipes call for fish and seafood.

Note: This book was published in London in 1969 by Anchor Press, Ltd. (201 p.). Address: New York.

1435. Akizuki, Tatsuichiro (Akiduki). 1968. Miso. Translated by Herman Aihara. *Macrobiotic Monthly* 8(5):6-12. [1 ref]

• **Summary:** Discusses miso in the treatment of tuberculosis and atomic radiation exposure. On 9 Aug. 1945 the atomic bomb was dropped on Nagasaki. It killed many thousands of people. Dr. Akizuki was in charge of the St. Francis Hospital, located only 1 mile from the center of the blast in Nagasaki. The hospital was completely destroyed. He and his assistants helped many victims who suffered the effects of the bomb. He noticed that none of his co-workers suffered or died from radiation. He attributed this to the fact that they had developed a strong constitution by consuming miso soup and brown rice daily. He considers miso to be the highest form of medicine. It produces an alkaline condition in the body. Address: Chico, California.

1436. Diamant, E.J.; Laxer, S. 1968. Nutritional evaluation of miso. *Israel J. of Chemistry (Proceedings)* 6:147p. (i.e., page 147p. of the Proceedings). Proceedings of the 38th Meeting of the Israel Chemical Society... Held 8-10 Oct. at Beersheba, Israel. [1 ref]

• **Summary:** This miso is made using defatted soybean flakes instead of whole soybeans. Nutritional evaluation (PER) on weanling rats was difficult since this miso, a seasoning, had a high (8%) content of sodium chloride / table salt. The miso was found to contain no methionine and to lack adequate tryptophane, arginine and possibly histidine. Address: Dep. of Biochemistry, Bar-Ilan Univ., Israel.

1437. Hahn, Emily. 1968. *The cooking of China*. New York, NY: Time-Life Books. Series: Foods of the World. 206 p. Illust. (many color photos). Index. 28 cm.

• **Summary:** Another superb work in this superlative series from the editors of Time-Life Books. This book is about cooking in China, where the author lived (in Shanghai), before the 1949 Communist revolution.

Contents: Introduction: The cooking of the world's oldest civilization. 1. An ancient and honorable art. 2. "Chinese cooking" in your own kitchen. 3. Secrets of savor and spice. A reverence for good food. 5. Oriental staff of life. 6. Gentle teas and strong spirits. 7. Feasts for festivals. 8. A cuisine for all continents.

China, the world's oldest existing civilization, has the world's most ancient cuisine—as well as one that is both great and profound (p. 6). When the Red Guards of China's Cultural Revolution appeared in the 1960s, they "attacked every symbol of what they regarded as bourgeois culture. Among the targets in Peking were the city's fine restaurants." In the process they destroyed much of China's culinary heritage—but only inside of China (p. 7). An article by Peggy Durdin in the *New York Times* was titled "Mao's great crime against cuisine" (p. 184). Chinese food is, of course, about life, but it is also about health, and it can resonate on numerous symbolic levels (p. 7).

The southern provinces of China, Fukien, Kwantung, Yunnan, and Kwangsi, enjoy tropical temperatures year round and more than 80 inches of rain. Here rice is the main crop. Yet China is a mountainous country, with 60% of its land at elevation 6,500 feet or higher; only 11% of its land can be cultivated (compared with 80% in the USA) (p. 10). Fukien, a coastal province to the south, makes the best soy sauce in China, and steaming is called "red cooking" because of the color imparted by the soy sauce (p. 16, 42).

Vegetable oil is very important in China because the Chinese rarely use butter (p. 29). "For protein the Chinese depend heavily on the soybean, which has for this reason been called the cow of the East" [sic]. Soybean oil is used for cooking. Soybean milk is a good substitute for cow's milk. And "doctors, even Western doctors—prescribe it for babies who cannot get mothers milk and are allergic to cow's milk" [sic]. From soymilk one can make "bean curd, an exceptionally high-protein food known in China as 'the meat without bones.'" Bean curd is made by curdling soybean milk with gypsum, then pressing the curds into pieces about 3 inches square by ½ inch thick. "The thickened curd skin [sic, yuba] is a food by itself, with a more concentrated flavor. Fermented bean curd tastes much like cheese." Both soy and mung-bean sprouts are used in China, "In one form or another the soybean can be found in dishes eaten at every meal" (p. 29).

A two-page color photo spread and legend (p. 61-63) shows (numbered) basic Chinese ingredients, incl. "13. Fresh bean curd. 14. Dried bean-curd skin" [yuba]. Buddhist monks and nuns in China are strict vegetarians; special foods that simulate meat have been developed for them. These include vegetarian "duck made from crisp beancurd skin, colored and shaped to look like the bird's flesh" and "chicken roll in *hoisin* sauce, the 'chicken' made of soft soybean curd" (p. 64, 67, 70).

A full-page color photo and legend (p. 74-75) shows (numbered) Chinese sauces and condiments, incl. "1. *Hoisin* sauce. 3. Soy sauce. 8. Yellow-bean paste, or thick bean sauce. 11. Fermented black beans. 14. Red bean [azuki] paste." "Among the best known of Chinese seasonings is soy sauce, which was mentioned in several Confucian classics as early as the Fifth Century B.C." [sic]. Other condiments made from soybeans are bean paste (for preserving and flavoring meat) and *hoisin* sauce (widely served with Peking duck). "It is said that the best grades of soy sauce can take as much as six to seven years of aging to reach perfection, and that the making of superb soy sauce requires 'as much art in its preparation as good French wines'" (p. 74-75, 77).

The controversy over M.S.G. is discussed. "A really god Chinese chef considers it a questionable shortcut for giving taste to second-rate foodstuffs, but most Chinese cooks admit that its use in certain dishes is perfectly valid" (p. 77-78).

The emperor Chien Lung (1735-1796), 4th ruler in the Manchu [Qing] dynasty, wrote an *Ode to Tea* (p. 91). In China there is an intimate association between eating and health (p. 91).

Recipes: “Steamed bass with fermented black beans *Tou-shih cheng hsien yu* (with “2 teaspoons fermented black beans,” soy sauce, Chinese rice wine, and shredded fresh ginger root, p. 104).

Most festivals (each with a feast) in China are based on events of agricultural importance; the two most important are New Years and the Moon Festival (p. 155, 162, 164-65). A Peking duck is “brought to the exact degree of plumpness and tenderness through force-feeding,” then roasted slowly, suspended by hooks, in a mud-lined oven “until the thick, fat skin becomes golden in color. This crackled skin is the choice part of the dish.” The skin, a piece of the meat, a spring onion, and thick, sweet hoisin are served enfolded in a thin wheat-flour “pancake” (p. 158, 15).

The history of chop suey (unknown in China) and chow mein (had an honorable origin in China) are discussed (p. 178-79).

The first wave of Chinese to America came with the gold rush and transcontinental railway. Most were laborers from southern China. The first Chinatown in the USA was established in San Francisco (1850s), followed by New York City (Manhattan, 1870s). Most early American Chinese restaurants reflected their social status, serving inexpensive foods. In the early 20th century, as China’s Republican revolution was gaining momentum, a second wave arrived to study. These young people, also mostly from southern China, came from far more prosperous backgrounds than those in the 1st wave and they wanted better food. Restaurants were started or upgraded to suit their tastes. Thus, it “was the southern school of cookery that first spread over the world outside China” (p. 179).

China has three great regional cuisines: Cantonese (southern), northern, and Szechuan (p. 179). Six photos show “The Americanization of the fortune cookie: Assembly line at a factory in New York City’s Chinatown.” A two-page spread shows many of the “fortunes” found in fortune cookies (p. 195-97).

“A guide to ingredients in Chinese cooking” (p. 198-99) includes: Bean curd, fresh: Square. Bean-curd skin [yuba] (“Thin stiff sheets of dried bean curd. Sold by weight... {5 to 6 sheets weigh about 1 ounce}”). Bean sprouts (“Young sprouts of the mung bean”). Black beans, fermented (“Strongly flavored, preserved black soybeans.” Sold in cans or plastic bags). Brown bean sauce (“Thick sauce made from fermented yellow beans [huang dou = yellow soybeans], flour and salt. Sold in cans of 1 pound or more”). Hoisin sauce (“Sweet, brownish-red sauce made from soybeans, flour, sugar, water, spices, garlic and chili for use in cooking. Sold in 1-pound cans and up”). Oyster sauce (“Thick brown sauce with a rich flavor, made from oysters,

soy sauce and brine”). Red bean paste (“Thick, sweet paste made from red soybeans” [sic, azuki beans]). Salted eggs and thousand-year eggs. Sesame seeds and sesame seed oil. Soy sauce (“Pungent, salty, brown liquid made from fermented soybeans, wheat, yeast [sic, mold] and salt”). Vegetable steak (“A vegetarian food that looks like a small beefsteak but is made from wheat gluten. Sold in cans”). Address: Author, lives in England with her husband.

1438. Hawkes, Alex D. 1968. *A world of vegetable cookery: An encyclopedic treasury of recipes, botany and lore of the vegetable kingdom*. New York, NY: Simon and Schuster. See p. 213-14. Illust. by Bill Goldsmith. 28 cm.

• **Summary:** The section titled “Soybean” focuses on green vegetable soybeans, noting: “In the Orient and increasingly in such places as Hawaii and California in this country, green Soybeans are for sale as a fresh vegetable. The plants have pod-laden branches, each short, narrow, very hairy pod containing three or four edible seeds. The fresh Soybean pods are washed, then boiled in lightly salted water until they are soft. Drained, they are seasoned to taste with soy sauce and a bit of sugar, then served, the beans being shucked from the pods at table.”

There is a casserole recipe named “Miss Diddley’s Green Soybeans.” Also discusses briefly dried soybeans, roasted soybeans “ground into a meal and into flours of various degrees of coarseness [roasted soy flour] and “even used as a substitute for coffee, sprouted soybeans (a recipe is given for “Soybean Sprouts Cantonese”), soy oil, soy sauce, tofu, and miso. The author notes: “I often prepare my own version of *miso*, using dried navy or other white beans (see p. 44), instead of utilizing the commercial imported variety.”

“Tôfu is the curd of cooked, mashed white soybeans, which has been precipitated, then pressed into cakes. It is perishable, hence most conveniently bought in cans, water-packed. The rather soft but firm cakes—sometimes baked or even fried prior to canning, and respectively known as *yakidôfu* and *aburage*—have a bland flavor, vaguely reminiscent of a custard. It is just this suavity which makes *tôfu* so valuable, since it quickly absorbs the flavors around it in such things as soups, *sukiyaki*, and *mizutaki*, yet retains its exceptionally pleasant substance. *Tôfu* is to be found in many of our domestic markets, imported from Japan. With its high content of readily digestible protein, it should be better known by all Americans.”

1439. Ito, K. 1968. *Miso no chômi kinô ni tsuite*. II. [Tasting effect of “miso” as a seasoning. II.]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 21(1):1-3. [8 ref. Jap; eng]

• **Summary:** By cooking miso and mackerel together, C-20 and C-22 fatty acids with 5 or 6 double bonds (which are sources of fish odor), were decreased.

1440. Kikkoman Shoyu K.K. 1968. *Kikkōman Shōyu shi* [History of Kikkoman Shoyu]. Noda, Japan: Kikkoman Shoyu K.K. 804 p. Illust. No index. 26 cm. [113 ref. Jap; eng+]

• **Summary:** This is the third (and best) major history of Kikkoman, written largely by Mr. Morio Ichiyama. Contents: Preface. I. Overview–1. Fermented foods. 2. Japanese shoyu. II. Present status: 1. Overview of Noda (p. 15): Location, overview photo of city area. 2. Main building and facilities (p. 18): Main office, Tokyo branch, Osaka branch, plant No. 7, Kansai plant, inside the fermentation plant, bottling plant, sake making plant, food manufacturing plant, Goyo Gura traditional shoyu facility, Central Research Center. 3. The distribution and view of the buildings (p. 36): Distribution chart of the main buildings in the Noda area, view of the plant, water providing facility. 4. Products (p. 41): Shoyu, products made by food manufacturing department and sake brewing department. 5. Sales and marketing (p. 44): Domestic, overseas. 6. Welfare facilities (p. 48): Health center house, attached hospital, cultural gymnasium, dormitory and company housing quarters. 7. Connected enterprises (p. 50): *K.K. Senshūya (Chiaki)*, foundational juridicial person / (*kōfūkai*), foundational juridicial person / (*Noda Sangyo Kagaku Kenkyusho*), *Sōbu-Tsūun K.K.*, Kikkoman International, Inc., Tone Coca-Cola Bottling Co., Kikko Food Industry K.K., Seishin Seiyaku K.K. (pharmaceutical company), Mann's Wine K.K. 8. The staff members (p. 58).

III. History. 1. The history of shoyu (p. 61): History of shoyu, origin of character meaning shoyu, Daishokuzen and Shoin, Zashin of Shoin, the beginning of shoyu exports (p. 76), the first shoyu plant overseas, shoyu which was protected by the Lord of the Han (*Hanko*), references to Noda Shoyu in literature. 2. Trademarks (p. 86): The change of trademark, the origin of the Kikkoman trademark. 3. Management of the organization (p. 91): Changes in organization, changes in management, changes in bookkeeping. 4. Production (p. 118): History of the method, raw materials, processes, containers, sauce, new seasonings, various kinds of sake. 5. The plant (p. 231): Noda plant, Kansai (Osaka-Kyoto area) plant, sake making plant. 6. Research center (p. 265): History of the research center, achievements. 7. Businesses (p. 269): Sales, wholesale, business customs, export, transportation, prices, advertising, business offices, overseas activities. 8. Labor (p. 375): Changes in labor conditions, the labor union, labor relations board. 9. Welfare (p. 393): Health insurance union, medical facilities, dormitories for single workers and company housing quarters, day care center, travel club, fire department, committee for funerals, weddings, etc. (*Kyozaikai*), athletic association, cultural committee, Noda Shoyu co-op.

IV. Pre-history–Before the company's establishment. 1. Natural and environmental history of Noda (p. 415). 2. Development of the shoyu industry in Noda (p. 432). 3. Family tree (p. 440). 4. Brief description of the major contributions (p. 448, incl. Kotohira Shrine, Kameo Mogi's theory of business, founding of the Senshu-kai, the man who emphasized thrift and simplicity, the 1st president of the company, the 2nd president–Mogi-Honke, the 3rd president Chu-do Kikkoman Kuramoto).

V. Company history. 1. Developmental stage and established stage (p. 469): Outline, foundation of the company, beginning of the business, developments and labor problems, overproduction and the business world. 2. The new order and the controlled economy during World War II (p. 494): Outline, changes during the war, process under controlled economy during the war. 3. The U.S. occupation period (p. 519): Outline, development of democracy, danger of the business world, changes caused by international conditions. 4. Development period of new Japan (p. 547): Outline, quickening of economic growth, advancing technology, a step forward to modernization, diversification of the business.

Appendixes: 1. Company time table (20 p.). 2. Charts and graphs concerning the company's history (5 p.). 3. Food history and shoyu (193 p., including many old illustrations, photos, a 38-page chronology of Japanese food culture {p. 137-75}, and a bibliography {p. 191-93}). Closing remarks (2 p.). Contains many photos, illustrations, and copies of early documents.

Note: Ichiyama is not listed in this book as the author, even though he wrote it. On the copyright page the author is given as Kikkoman K.K. Continued. Address: Noda, Japan.

1441. Kikkoman Shoyu K.K. 1968. *Kikkōman Shōyu shi* [History of Kikkoman Shoyu (Continued–Document part II)]. Noda, Japan: Kikkoman Shoyu K.K. 804 p. Illust. [113 ref. Jap; eng+]

• **Summary:** The section on the beginning of shoyu exports (p. 76) states that the exporting of shoyu from Japan began when a group of merchants were allowed to do business after the closing of Japan during the Kan-ei era (1624-30) of the early Tokugawa period. In 1641 a group of Dutchmen moved to Nagasaki from Hirado. At that time, two merchants already in business were allowed to conduct trade: Their names were Koyanagi Heizaemon and Sameya Hisazaemon. They established a stock company with 16 shares. The shareholders were called *Dejima shoshiki urikomimi shōnin*. To the original two merchants, in 1653 four more were added and in 1666 ten more were added, making a total of 16. These were called the “Comprador Merchant Guild” (*Konpura Nakama*). They started exporting shoyu from Japan. According to documents in the Hague: 1668–It was exported to Coromandel on the southeast coast of India. 1670–To Ceylon. 1699–To Ceylon, Bengal, and

Nakabatanam. 1716–To Coromandel. 1717–To Suratt, in northwest India. Furthermore, the Dutch took shoyu to Europe. So we can see that in the late 1600s and early 1700s the people of Europe started to use shoyu.

The section on exports (p. 294-99) states that it is difficult to tell when shoyu from Noda was first exported from Japan. In 1879 a person named Domoto (?) got one Kikkoman brand and its logo (in the shape of a hexagon, but not the current Kikkoman logo) registered in California, and then he started to sell the product there. In about 1899 the Saheiji MOGI family's Kikkoman brand shoyu began to be exported to Hawaii via Okada-shoten, a company with offices at Koamicho 3-5 in Tokyo. In 1907 the Verleysen-Nyssens company in Brussels, Belgium, began to import shoyu in large kegs. They repackaged it in grey ceramic bottles of their own design, then published a pamphlet in French (see p. 295) describing the product (which they called "Soya") and showing a photo of two sizes of bottles. A 1.2 liter bottled retailed for 1.75 francs. Page 296 shows a gift coupon from the year 1922 from America. When a person buys a bottle of shoyu, he or she gets this \$0.50 coupon.

Excerpts from Appendix 3 (p. 152+): Chronology of food history. 1610–Tamari was made in Nagoya using only soybeans when the Nagoya Castle was built. 1615–Dried nori sheets invented in Edo. 1616–Shoyu started to be made in Choshi, Shimousa. 1661–Takanashi (1661) and Mogi (1662) families in Noda started to make shoyu and miso. 1666–Usukuchi shoyu started to be made in Tatsuno, Hanshu / Banshu by a certain man. And Bizen shoyu started to be made in Bizen. 1698–Shoyu wholesaler (*tonya*) first appeared in the literature in *Sonazaki Shinju*, by Chikamatsu Monzaemon. 1781–Kanro shoyu starts to be made. Mr. Takada offered shoyu to Yoshikawa-ko and received the admiration / appreciation of *kanro* ("sweet dew"). 1810–Choshi Shoyu received the *gozengoyô* Tanaka-gen han bakufu. 1829–The Takanashi house of Noda received the Bakufu's order for shoyu (*goryomaru*). Address: Noda, Japan.

1442. Hesseltine, C.W.; Wang, H.L. 1969. Oriental fermented foods made from soybeans. *USDA Agricultural Research Service*. ARS-74-50. p. 45-52. Feb. Proceedings of the Ninth Dry Bean Research Conference.

• **Summary:** Contents: Introduction. Koji. Shoyu or soy sauce. Miso. Hamanatto. Sufu. Tempeh. Natto. Idli. Conclusion. Flow sheets show the basic process used in making most of these foods. A photo taken in Aug. 1948 shows a miso plant in Tokyo, Japan, with large wooden vats in the foreground. A part of this plant was destroyed during World War II. Address: Northern Utilization Research and Development Div., USDA, Peoria, Illinois.

1443. Miyata, K.; Takada, R. 1969. Saikin no tamari shôyu no jôzôhō [Current method for making tamari shoyu]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 64(2):148-52. Feb. [10 ref. Jap]
Address: 1. Aichi-ken Miso Tamari Shoyu Kogyo Kyodo Kumiai; 2. K.K. Aichi Kenjoshu Kenkyu Shitsu.

1444. Ebine, Hideo; Sakano, Keichi. 1969. [Production of miso from natto]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 24. p. 122-24. March. [7 ref. Jap; eng]

• **Summary:** Reprinted from *Miso no Kagaku to Gijutsu (Miso Science and Technology)*. No. 173. p. 23-25 (1968). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1445. Ebine, Hideo. 1969. [Detection of defatted soybeans in miso using a microscope]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 24. p. 119-21. March. [2 ref. Jap; eng]

• **Summary:** Reprinted from *Miso no Kagaku to Gijutsu (Miso Science and Technology)*. No. 170. p. 23-25 (1968). Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1446. Spilsbury, Calvin C. 1969. Three stages in Far East soybean markets. *Foreign Agriculture*. April 14. p. 6-8.

• **Summary:** Today soybean markets in the Far East, the original home of the soybean, have emerged from time-honored Eastern patterns and have differentiated into what may be called three types—traditional, transitional, and industrial. In traditional markets soybeans continue to be sold and used chiefly for human protein foods, and volumes traded are comparatively small. Also, volumes processed by modern methods are small. Transitional markets are characterized by larger volume, the modern processing of considerable quantities of soybeans for oil for human consumption, and the developing use of soybean meal for human food products and for high-protein animal feeds for emerging livestock and poultry industries. In industrial markets very large quantities of soybeans are efficiently imported, marketed, and processed for oils and fats for human use and for meal for vigorous livestock industries; at the same time soybeans are still used in traditional foods and soybean meal is used to make a variety of new food products.

Korea is a traditional soybean market. Nearly all soybeans are processed into human protein foods such as synthetic milk, flour, paste for soup [miso], curd for consumption in more solid form, mash, sprouted beans, soy sauce, and even fermented "cheese". About 60 to 70% of the domestic crop of about 200,000 tonnes annually is sold in the country's food markets directly to private and

commercial consumers. Total imports in 1968 were 28,000 tonnes—all from the U.S.

Most processing of soybeans for human use is done in individual homes by housewives. For example, nearly every Korean family makes a product known as kochojang, or hot bean mash, which consists of powdered, fermented soybeans mixed with red pepper, salt, and water. Some foodmaking (soybean curd and soy sauce) is organized into cottage industry. Most of the soybeans imported from the U.S. are made into traditional soybean foods for rations for the Korean army by one large food factory. Crushing soybeans and other oilseeds for oil is done by about 100 small mills throughout the country. The estimated capacity of all the mills added together is about 200,000 tonnes per year of oilseeds of all types. The largest mills have capacities less than 25 tons per day.

In Taiwan, very little of the imported soybeans are used to make traditional Far East foods. The larger crushing and extraction facilities are clustered around large cities—Taipei, Taichung, Tainan, and Kaohsiung. Only the last is a port, and even there no mills are located on deep water. Imported soybeans are discharged by ships' equipment onto docks, where they are bagged and then stored. Bagged beans are sent by truck or rail to inland processing plants. Modern deep-water bulk discharge facilities are to be built at Kaohsiung along with storage for soybeans and grain.

Japan is the giant of Far Eastern markets for U.S. soybeans. One of the most important recent improvements in soybean logistics has been the development of modern deepwater grain and soybean terminals where soybeans can be rapidly discharged from ships' holds directly to storage, interim transportation, or crushing mills. The first fast-discharge elevator on deep water for soybeans or grain was built by an American-Japanese company. At present four terminals have been built in the Tokyo and Kobe areas, and two more are under construction. Unloading is accomplished by pneumatic suction tubes with capacities of 600 to 800 tons per hour (about 6,000 tonnes per 8-hour day). In Korea and Taiwan, facilities for the fast unloading of large tankers do not exist. Many large, new crushing mills have been built on harbor frontage rather than inland so that they can benefit from bulk transportation methods. The annual capacity of the 15 large, modern mills in Japan is estimated at 1.8 million tons of soybeans. The first mills in Japan were in the mountains because most oilseed crops were grown there. Address: Fats and Oils Div., Foreign Agricultural Service.

1447. Binding, George J. 1969. The soya bean—a vegetable full of body-building protein. *British Vegetarian*. March/April. p. 155-57.

• **Summary:** The “soya bean has the highest protein content of any vegetable. As such it is God's gift to man and is a must for vegetarians. In the Far East it is known as ‘the

meat of the soil.’” The author spent many years in East Asia, where he studied the foods of the region. Soya beans can be used to make a wide variety of foods; the author briefly describes the following: Bean shoots [soy sprouts], soya bean milk, bean curd or vegetable cheese [tofu], yuba, natto, miso, soy sauce, and boiled whole soybeans.

Since World War II, America has become the largest producer of soya beans. Before that war, England was one of the largest importers of soya beans in the world. “All vegetarians should make certain of a sufficient daily intake of protein. There's no more effective and satisfying way of doing so than eating soya beans.” Address: M.B.E.

1448. Ilany-Feigenbaum, J.; Diamant, E.J.; Laxer, S.; Pinsky, A. 1969. Japanese miso-type products prepared by using defatted soybean flakes and various carbohydrate-containing foods. *Food Technology* 23(4):156-58. April. [14 ref]

• **Summary:** Miso was prepared by 6-12 month's fermentation of steamed soybeans with *Aspergillus oryzae* grown on rice and salt. For miso-type products, defatted soyflakes were used and wheat/corn/bananas etc. replaced rice. Differences in fermentation time, flavor color content etc. are given. Address: Dep. of Biochemistry, Bar-Ilan Univ., Ramat-Gan, Israel.

1449. Stanton, W.R.; Wallbridge, A. 1969. Fermented food processes. *Process Biochemistry* 4(4):45-51. April. [34 ref]

• **Summary:** “Fermentation of starch tubers such as cassava with fungal organisms such as *Rhizopus* can result in a food product with significant increases in protein content.” The cassava dough is inoculated then extruded (like noodles) into fermentation trays.

Table 1 shows many different “vegetable cheeses and related fermented foods.” The first such food mentioned is minchin, made from wheat [gluten] in China. The microorganisms used are *Paecilomyces*, *Aspergillus*, *Cladosporium*, *Fusarium*, *Syncephalastrum*, *Penicillium*, and *Trichothecium* species. This is an anaerobic fermentation of wheat gluten for 2-3 weeks at room temperature during the winter, with 10% salt added. The product is cut into strips and used as a condiment. Eaten as a meat substitute, it is rich in protein, nutritious, and healthy.

Fermented soy products include sufu, tempeh, meitauza, Hamanatto, shoyu, miso, and natto. Address: 1. PhD, Head, Microbiology Section, Tropical Products Inst., London, England; 2. Parke Davis Co.

1450. Dosti, Rose. 1969. Happy holiday for Japanese. *Los Angeles Times*. May 8. p. H20.

• **Summary:** On April 29th, the Emperor of Japan celebrated his birthday, and wherever Japanese live there were banzai cheers. The hurrahs were especially loud in Los Angeles,

for more Japanese-Americans live here than in any other part of the United States.

A photo shows Japanese Consul General Kanji Takasugi, with his wife, Shinako. They hosted a party for 800 guests honoring the Emperor's birthday.

The meal is described and recipes are given for tempura and its dipping sauce (*tentsuyu*), based on soy sauce, mirin and grated daikon (white radish). "Plain rice is served with a thin soup called omiso [miso soup] to which soy bean cakes (tofu) and green onion pieces are added."

1451. *Time*. 1969. Cancer: A clue from under the eaves. 93:81. May 9.

• **Summary:** This article discusses the work of Dr. David Seel, who has studied 919 cases of stomach cancer at the Presbyterian Medical Center in Chonju, South Korea. He thinks the culprit "may be a mold used in the preparation of a favorite Oriental delicacy, soya paste."

He explained that each winter, almost every Korean household makes "loaves of soybean mash" [*meju*, soybean koji, used to make Korean soy sauce and soya paste] and stores them in a cool, dark place, often under the eaves, where they become moldy. By early spring, a mycelium of black or gray mold covers the loaves. The Koreans scrape off this mold, then immerse the loaves in brine for a month. Finally, they pour off the black liquid, which is soy sauce, and "make the debris left in the crock into a stiff soya paste," of which some Koreans consume as much as five ounces a day.

Dr. Seel believes the "soya-paste molds" might well be a cause of stomach cancer in South Korea. He suggests there may actually be two causes of the problem: "The most widely used mold is *Aspergillus flavus*, some growths of which secrete substances called aflatoxins. For some animals, these are among the most powerful cancer-causing agents known. Moreover, says Seel, the stomach lining seems especially liable to damage, including cancer. Among Koreans who had both low vitamin A readings and a high consumption of soya paste, stomach cancer was twice as common as among other groups." Aflatoxins have also been found in peanuts, which are consumed by Southern Negroes, among whom vitamin A deficiency is known to be prevalent. A photo shows a person "immersing soya loaf [*meju*] in brine."

Note 1. For another perspective, see the *SoyaScan Notes* interview on this subject with Dr. C.W. Hesseltine (Feb. 1981), an internationally recognized expert on aflatoxins.

Note 2. This is the earliest English-language document seen (March 2009) that uses the term "soya paste" to refer to miso, or to Korean-style miso.

1452. *Medical World News*. 1969. Is the staff of Asian life the stuff of cancer? 10(20):12. May 16.

• **Summary:** This article (under the heading "Late News of the Week") seems to be based, at least in part, on a report in *Time* magazine (9 May 1969, p. 66). *Aspergillus flavus* is "a fungus often found in soya paste or soya sauce. These foods are prepared by molding [i.e. from *meju*]. *Aspergillus flavus* produces toxic metabolites called aflatoxins, apparently the most potent carcinogenic substances ever discovered."

Research on stomach cancer patients in Korea seems to support the theory that low intakes of vitamin A or a vitamin A deficiency may open the way to stomach cancer if the diet is loaded with carcinogens. A Korean team led by American missionary doctors [incl. Dr. David J. Seel, associate director of the Presbyterian Medical Center in Chonju] examined the socioeconomic, clinical, and dietary histories of 70 stomach cancer patients and 70 controls, matched by age and sex. "A striking finding was that the average daily intake of vitamin A for the control group was around 3,331 International Units, but for the cancer patients, only 2,853. 'The typical Korean stomach cancer patient is apt to be a farmer with poor education, at the lowest income level,' reports Dr. Seel. For the poor Korean farmer, soya loaves [*meju*] are a staple. The loaves are prepared each winter from a bean mash and stored for molding in a cool, dark place, often under the eaves of the farmer's house.

"Should the American with exotic tastes limit his horizons to avoid carcinogenic intake? A physician attending the meeting assured MWN [*Medical World News*] that Occidentals who are Chinese and Japanese restaurant buffs have nothing to worry about, since they are probably fully protected by the quantities of vitamin A in Western diets."

1453. Spilsbury, Calvin C. 1969. The U.S. soybean market in the Republic of China (Taiwan). *USDA Foreign Agricultural Service*. FAS M-209. 20 p. Aug. Summarized in *Soybean Digest*, Nov. 1969, p. 52.

• **Summary:** Contents: Foreword, by Howard A. Akers. Introduction. The market. The oilseed crushing industry: Organization and mill location, number and type of mills, crushing capacity. Soybean oil and foods: Soybean meal demand for swine, soybean meal demand for poultry. Domestic oilseed supplies: Soybeans, peanuts, rapeseed, sesame, minor oilseeds. Marketing: Discharging and handling facilities, freight costs, government controls, purchasing, credit, quality problems, crushing margins wide. Appendix: Directory of major soybean and oilseed crushing mills, by region.

The Foreword notes: "This small island made near-phenomenal strides in both agriculture and industry in the late 1950s and early 1960s, and by the mid-1960s was recognized as a growing dollar market for U.S. soybeans and soybean products." In 1965 Taiwan moved from aid to trade status. In 1966 soybeans were removed from controls, and with the booming economy of 1967-68, imports of

soybean from the USA—all paid for in dollars,—leaped to record levels.

Today, Taiwan has one of the world's highest economic growth rates. Since the end of World War II, and especially since 1955, the Taiwan oilseed crushing industry has undergone a complete technological transformation. The country now boasts 36 solvent extraction plants, many of them with modern continuous systems.

In Taiwan today, per capita consumption of soybeans for food is estimated at around 5½ pounds/year, compared with about 4 pounds in 1958. Soybean oil is now Taiwan's major source of edible fats and oils; per capita consumption is about 6 pounds/year compared with 4 pounds/year for peanut oil. Total per capita vegetable oil consumption is about 12 pounds/year. Per capita consumption of animal fats is 6-8 pounds/year.

Domestic production of soybeans rose from 4,000 metric tons (tonnes) in 1935-39 to 72,997 tonnes in 1968. Historically, imports of soybeans and soybean products have been large. In 1938 over 45,000 tonnes of soybeans and about 164,000 tonnes of soybean cake were imported, mainly from Manchuria.

In 1950, Taiwan's vegetable oil crushing industry was first organized into a trade association by a group of 20 crushers using screw presses. By 1967 some 86 crushers were members; this included 35 solvent-extraction operators. Known today as the Taiwan Regional Association of Vegetable Oil Expelling and Refining Industries, the group is located at 82 Nan Yuan Street in Taipei. Today in Taiwan there are 99 oilseed crushing mills with a total crushing capacity of 1.3 million tonnes—up from only 400,000 tonnes in 1954-55.

As in many countries of East Asia, the Taiwanese consumer has a taste preference for crude peanut oil, sesame oil, and rapeseed oil, in that order. For this reason, soybean oil is often marketed as a blend with peanut or rapeseed oil.

The soybeans required for the manufacture of bean curd [tofu], soybean paste [jiang], [soy] sauce, milk, and other foods are largely produced domestically. In 1969 an estimated 40,000 tons of soybeans will be required for bean curd and 3,000 tons for soybean sauce. "In the rural areas of Taiwan, soybean milk cooperatives have been organized under government auspices. Members use their own soybeans and make their soybean milk at common soybean milk shops."

A map (p. 9) shows the island of Taiwan, each of its prefectures, and where each of four oilseeds (soybeans, peanuts, rapeseed, sesame) are produced. Tables show: (1) Production of four oilseeds in Taiwan from 1965-1968. Peanut production decreased from 88,000 to 74,000 tonnes. Soybean production increased from 66,000 to 73,000 tonnes but was still No. 2 after peanuts (p. 8). (2) Taiwanese soybean production, imports, and utilization from 1955 to 1968 (p. 11). Address: Fats and Oils Div.

1454. Takeuchi, Tokuo; Yoshida, M.; Yoshii, H. 1969. Miso, shōyu no peptides ni kansuru kenkyū. VII. Mame miso teibunshi peptides guruupu bunkaku to sono seijō [Studies on peptides in miso and soy-sauce. VI. Group separation of lower peptides in mame-miso (soybean miso) and their properties]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 47(8):496-501. Aug. [16 ref. Jap; eng] Address: Food Research Inst., Aichi prefecture, Nishi-ku, Nagoya, Japan.

1455. *Macrobiotic (The) (Chico, California)*. 1969. Miso and cancer. 9(7):2-8. Sept/Oct. [3 ref]

• **Summary:** Herman Aihara summarizes and comments on two articles about miso and cancer in *Time* magazine (9 May 1969) and *Medical World News* (16 May 1969), then gives a synopsis of what miso is from two articles in *Health Food Business Review* (Sept. 1967 and July 1968). Following a translation of Dr. Akizuki's writings about his experiences with miso following the atomic blast at Nagasaki, Aihara shares his own thoughts about miso's health promoting properties, and about the causes of stomach cancer (sugar, overeating, fish and eggs, tropical fruits). He believes that smoking tobacco does not cause cancer. Address: Ohsawa Foundation, Chico, California.

1456. **Product Name:** Hacho Miso (Soy Paste), Mugi Miso (Barley Soy Paste).

Manufacturer's Name: Eden Organic Foods, Inc. (Marketer-Distributor). Purchased from Erewhon (Boston-Importer). Made in Japan.

Manufacturer's Address: 514 East William St., Ann Arbor, MI 48104.

Date of Introduction: 1969. November.

Wt/Vol., Packaging, Price: 1 lb. plastic bags.

How Stored: Shelf stable.

New Product-Documentation: Eden Foods Inc. 1971. July 26. Wholesale pricelist. "Hacho Miso (Soy Paste), Mugi Miso (Barley Soy Paste)." 1 lb containers.

Eden Foods, Inc. 1974. Feb. 1. Wholesale prices, FOB. "Mugi Miso, barley-soy paste (Erewhon)." This is the first time the word "Erewhon" appears after miso. It looks like Erewhon was requiring Eden to add it—which may have caused bad feelings.

Eden Foods Fall and Winter Catalog. 1977-1978. "Hacho Miso (Eden) soy paste. Mugi Miso (Eden) barley soy paste. Kome Miso (Eden) rice soy paste. Each is available only in 14 oz, 8.8 lb, 22 lb, and 44 lb sizes. Eden has found a way to go around Erewhon, probably by importing via Muso Shokuhin.

Eden Foods Catalog. 1978. Page 18. Eden Foods has now (happily) started to write the names of its misos in English rather than Japanese as follows: Eden Soybean Miso (Hacho), Eden Barley Miso (Mugi), Eden Rice Miso

(Kome), and Eden Brown Rice Miso (Kome). A photo shows Eden's miso line with labels in 1 lb plastic bags and plastic kegs.

Talk with Bill Bolduc, founder, original incorporator, and past president of Eden Foods. 1991. Dec. 8.

Eden Organic Foods first began selling soyfoods commercially in November 1969, starting with their first order from Erewhon in Boston. They would buy "tamari" (actually shoyu) and miso (Hacho = soybean, mugi = barley varieties) in bulk from Erewhon (which imported them from Japan). At their store, Linda Succop (Bill's wife's sister) would repackage the products, putting the shoyu into bottles and the miso into plastic bags. They were labeled using plain white self-adhesive gummed labels with a rubber stamp. One stamp contained the name and ingredients for each product, and another, that was stamped below it, gave the company name and address. They wrote in the weight or volume by hand near the bottom of the label.

1457. *SoyaScan Notes*. 1969. Chronology of Eden Organic Foods, Inc. Renamed Eden Foods, Inc. in April 1971. Part I. 1969 to 1972. 31 Jan. 1992. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1969 Nov. 4—Eden Organic Foods is named and incorporated as a non-profit corporation by Bill Bolduc. Other names on the articles of incorporation are Judith Bolduc, Ronald Teeguarden, Gloria Dunn, and Linda Succop. It is a natural foods co-op retail store at 514 East William St. in Ann Arbor, Michigan. Bill is president of the company and his wife, Judy, is part-time secretary. The date of incorporation, Nov. 4, was selected by an astrologer, Michael Erlewine, because it was astrologically propitious. Michael also designed the Eden logo of four sprouts in a circle. Also in Nov. 1969 Eden begins selling soyfoods, tamari and miso purchased from Erewhon.

Prior to this, starting in about the summer of 1969, Ronnie Teeguarden and Gloria Dunn had started a loosely-knit food buying co-op—which had no name, no assets, no formal structure, and no bank account. Original or very early members included Tim and Pattie Redmond, Mark and Nancy Retzloff, Linda Succop, Iona Teeguarden, and Bob Thorson. On about 3-5 different occasions they collectively ordered macrobiotic staples (including tamari and miso) from Erewhon in Boston, Massachusetts, using the Erewhon catalog. When the foods arrived, the members got together and divided them up at the Teeguarden-Leabu General Store, at 209 South State St. in Ann Arbor. This general store, located in the basement below Marshall's Bookstore, carried mostly antique clothing and records, and the art of local artists. By September 1969, Bill and Judy Bolduc joined the food co-op. They also joined the Zen Macrobiotic Supper Club; all of its members were also members of the food co-op.

In the fall of 1969 the Teeguarden-Leabu second-hand store looked like it was about to close, which would leave the food co-op without a home. The group (especially Ronnie Teeguarden) convinced Bill Bolduc to take charge of the food co-op and find it a permanent home, which he did—in an upstairs apartment at 514 East William St. Members of the informal food-buying co-op who worked at Eden Organic Foods included Bill Bolduc, Gloria Dunn, and Tim Redmond. An environmental group named the Environmental Defense Education Network (EDEN) also operated out of the Teeguarden-Leabu General Store; it was from this group that Eden got its name. That fall, after the Eden Organic Foods co-op was up and running, Tim Redmond went to Boston to work and study at Sanae, a macrobiotic restaurant on 272A Newbury St.

1970 summer—Bill Bolduc establishes Eden's first contact with an organic food grower (Bill Vreeland of Ypsilanti, Michigan, who grows organic wheat and soybeans). He soon makes Eden's first direct purchase of organically grown wheat, which the company mills and sells.

1970 July 6—Eden Organic Foods, Inc is reorganized upon a stock basis. Bill Bolduc (who resides at 6210 Bethel Church Rd., Saline, Michigan) owns all the shares (1,000). Other people listed on this document are Judith Bolduc, Ronald Teeguarden, and Gloria Dunn.

1970 Sept.—The fledgling company has an offer from Cynthia Shevel to move into a newly decorated mini-mall at 211 South State St. on the main street of campus. They need money to finance the move. Tim Redmond's father says he will help finance the expansion only if the business is reorganized as a for-profit corporation. So Eden is changed into a for-profit corporation, and Redmond invests the \$10,000 he borrowed from his father in Eden in exchange for 50% ownership. In Nov. 1970 Eden moves into the mini-mall (they register the new address on Nov. 17) and soon begins to mill flour and bake granola at the new store. Bolduc and Redmond are now equal partners

1971 April 8—Bolduc registers a change in the company name to Eden Foods, Inc. from Eden Organic Foods, Inc. After the store was up and running, Redmond returns to Boston and Sanae restaurant, where he completed his studies.

1971 Jan.—Michael Potter is hired by Bill Bolduc. Mike had initially had a good-paying job at an art gallery in Royal Oak, Michigan. Then he began working for, and eventually became a partner in Joyous Revival, a macrobiotic and natural foods retail store in Birmingham, Michigan. At that time he and his wife, Carol Roller Potter (Ron Roller's sister), moved from Royal Oak to Walnut Lake, Michigan—to be nearer to Joyous Revival. In the fall of 1970 Michael Potter, while still working at Joyous Revival and at Bill Bolduc's request, had done volunteer work to try to help a failing new Eden retail store in downtown Detroit on the

campus of Wayne State University. This store was owned jointly by Eden and two people named John and Darleen—two of the first people in the area interested in macrobiotics. By Jan. 1971 it had become evident that the store would not be able to survive financially, so Michael's first job after being hired was to make one last try to save it, then to help in shutting it down.

1971 May or June—Tim Redmond returns to Ann Arbor permanently, having finished his macrobiotic training in Boston. He planned to open a restaurant like Sanae in Ann Arbor but instead got increasingly involved with Eden Foods.

1971 June—Eden starts to wholesale natural foods out of the back of their retail store at 211 South State Street. They buy increasingly from original sources instead of other wholesalers. Buying clubs and co-ops come to the retail store to pick up their bulk foods.

1971 July—Eden's wholesale pricelist, dated July 26, shows that Eden is selling bulk (50 and 100 lb) soybeans, corn, soft wheat, and rye, which are being grown organically in Michigan (by Tom Vreeland). Eden stone-ground a portion of them into flour—on order. Eden is also selling numerous bulk and packaged grains, cereals, flours, and beans from Arrowhead Mills in Deaf Smith County, Texas; some are organically grown.

1971 early summer—Bill Bolduc asks Mike Potter to manage the Eden retail store at 211 South State St. Mike and his pregnant wife, Carol, move to Ann Arbor from Walnut Lake. By this time the company name was Eden Foods, Inc.

1971 Aug.—Eden Foods starts to distribute its wholesale bulk products, especially in the Detroit area. The company starts to bring in small trailer loads of staples from Arrowhead Mills in Texas. Bolduc and Redmond, realizing that Eden is the only natural foods store in the area, borrow some money and rent a 4,000 square foot Quonset hut warehouse on North Main Street north of Ann Arbor near the Huron River. They expand their wholesale and distribution operations.

1971 Oct.—Mike Potter is given 13.5% of the common stock of Eden Foods, Inc. largely to compensate him for his many hours of unpaid volunteer work. According to Michael Potter (Dec. 1986), at this point the common stock ownership of Eden Foods is: Between Bill and Judy Bolduc 43.5%, Tim Redmond 43.5%, and Michael Potter 13.5%. Potter later says (Feb. 1993) that Bill Bolduc and Tim Redmond now own the same number of shares, but Judy Bolduc owned a small number of shares so the Bolducs owned the largest block.

1972 fall—Ron Roller starts to work part time for Eden Foods. Continued. Address: 514 East William St. in Ann Arbor, Michigan. Phone: 313-769-8444.

1458. *SoyaScan Notes*. 1969. Chronology of Eden Foods, Inc. Part II. 1973 to Nov. 1981. 31 Jan. 1992. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1973 March—Eden moves into a larger warehouse at 310 West Ann Street in Ann Arbor, sharing it with Midwest Natural Foods, which initially was not a competitor. At about this time, Ron Roller starts working full-time for Eden. While at this warehouse, in late 1973 or early 1974, Eden receives its first shipments of imported Japanese natural foods from Mr. Kazama of Mitoku in Tokyo. Tim Redmond had ordered these foods from Mr. Kazama at a meeting of the Natural Foods Distributors Association in Florida. Initially Eden was forced to import Erewhon-branded products. Redmond recalls that at this time he was working at and managing the warehouse and Potter was working at and managing the retail store. Redmond was managing the corporation because he controlled it.

1973 summer.—The Eden retail store moves to a much larger location at 330 Maynard St. in Ann Arbor, on the University of Michigan campus. It now includes three operations under one roof in 6,000 square feet of leased space: A large natural foods retail store, a natural fast-food deli, and a natural foods bakery named Sun Bakery that had relocated itself from Kalamazoo, Michigan. This operation proved to be very profitable; it paid off all Eden's debts and paid for the new warehouse, offices, trucks, and equipment.

1973 July—Bill and Judy Bolduc leave Eden Foods, selling their stock to Mike Potter for \$2,500 cash. Tim Redmond becomes president. Redmond ends up owning 51% and Potter 49% of the shares in Eden Foods. Potter recalls that he bought the stock directly from the Bolducs, then gave a small amount to Redmond so that Redmond would have majority ownership. Redmond recalls that the Bolducs sold their stock back to the corporation, then Redmond sold enough shares to Potter so that he (Redmond) would keep control with 51% of the shares.

1973 late or 1974 early—Potter and Redmond become equal owners of Eden Foods after Potter loans the company \$44,000 (entrusted to him by his father), then converts the loan into an investment in the company in exchange for equal ownership.

1973 Sept.—Mike Potter becomes president of Eden Foods at the unanimous recommendation of an employee steering committee. At about this time Midwest Natural Foods starts to compete with Eden Foods, carrying many of the same products that Eden carries plus dairy products and frozen foods. Eden has never sold dairy products or frozen foods and, in the face of new competition from Midwest, Michael Potter reaffirms this position. This decision makes it impossible for Eden to become a full-line distributor like Midwest, and lays the groundwork for Eden's eventual decision in 1986 or 1987 to discontinue distribution to retail stores and focus on manufacturing of natural foods.

1974 spring—Eden moves from 310 West Ann St. into a larger warehouse at 4601 Platt Road. This move extricates Eden from what had become a “pathetic relationship” with Midwest Natural Foods. Redmond is sure that he and Potter became equal partners before this move.

1974 March 7-8—Michael Potter represents Eden at the meeting of Natural Foods Distributors at the Janus conference room in Seattle, Washington.

1974 Oct.—Potter makes the first of his eleven trips to the People’s Republic of China. On the way back he visits Yuko Okada at the Muso Company in Osaka, Japan. Potter decides to import exclusively from Muso.

1977 Aug.—Eden Foods opens Turtle Island restaurant at 315 South State St. in Ann Arbor.

1979 spring—Cliff Adler, a painter renovating apartments in Ann Arbor, is hired by Michael Potter to work for Eden in Chicago, Illinois, to try to expand their sales to natural food retail stores. During that summer Cliff lends Eden Foods \$100,000, for which he is paid bank interest rates. Tim Redmond, however, believes Cliff was hired as a salesman in 1976, and that on 15 March 1979 Cliff became a shareholder in Eden Foods, buying 10% of the stock.

1979 Nov. 26—The Eden warehouse at 4601 Platt Road is destroyed by a large fire. According to the *Ann Arbor News* (Nov. 27-29) total damages are estimated at \$650,000. Eden Foods, organized in 1970, employs some 100 persons in distribution and production, supplies about 500 natural food stores and restaurants, has annual sales of about \$5 million, and is said by its owners to be “the largest natural foods distributorship in the Midwest.” This fire burned many of Eden’s key records, including records that would have helped in determining dates and facts for this chronology. Eden has never kept a written chronology of key events in the company’s history.

1979 Dec.—Within 10 days after the fire, the board of directors (Potter, Adler, and Redmond) meets, authorizes a large number of additional shares of common stock, and decides to give away (free of charge) shares of Eden Foods’ common stock to six key employees/managers to try to motivate them to stay with the company and help try to rebuild it. They also decide to lay off 35 other people. Shortly thereafter Cliff Adler decides to convert his \$100,000 loan to stock (equity)

1980 Jan.—Tim Redmond decides to leave Eden Foods; he leaves in May, selling most of his stock (he kept 1,000 shares) in exchange for ownership of the Maynard Street Connection, Inc., which has a retail store and restaurant at 330 Maynard St., which are now separate companies.

1980 Feb.—Now Michael Potter and Cliff Adler each own 34% of Eden Foods shares, Frank Dietrich (of Natural Foods, Inc., Toledo, Ohio) owns 10% (which he bought for \$100,000), Ron Roller owns 5%, Michael Gordon 4%, Mark Cook 4%, Kathy Knor 3%, Bill Swaney 3%, and Bob Duha 3%. Michael Potter notes that four things saved Eden

Foods (which now had a negative net worth of more than \$800,000) after the fire: (1) Cliff Adler’s conversion of his \$100,000; (2) The incredible cooperation, generosity, and kindness that Eden received from its suppliers in the natural foods industry, and their trust that Eden would do its best to pay back their money at a time when interest rates were over 20%; (3) Frank Dietrich’s investment of \$100,000 in the company; and (4) The great effort made by natural foods retail stores and consumers to go out of their way help Eden survive by purchasing more Eden products. Note that it was not until Feb. 1982 that Eden ended up receiving from its insurer (Hartford Insurance Company) \$400,000 net, or \$0.50 for each dollar Eden felt it was owed.

1980 Nov.—Eden Foods headquarters moves into a 20,000 square foot building at 701 Tecumseh Road in the tiny town of Clinton (population 2,000) about 60 miles southwest of Detroit.

1981 Nov.—Erewhon Trading Co. files for Chapter 11 bankruptcy protection. Trying to keep up with the super-distributors in their region (especially Balanced Foods) Erewhon had moved into an 80,000 square foot warehouse and added too many items to their product line too fast—which destroyed the company. Stow Mills picked up the bulk of their business, with Westbrae scooping up most of the business for their Japanese imports. Eden had not yet recovered enough financially to take advantage of this opportunity. Continued.

1459. *SoyaScan Notes*. 1969. Chronology of Eden Foods, Inc. Part III. 1983 to present. 31 Jan. 1992. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1983 July—Eden Foods surprises the U.S. natural foods industry by introducing Edensoy, a long-life soymilk in plain, carob, or cranberry flavors, imported from Marusan-Ai Co. in Japan, and packaged in a stand-up foil retort pouch.

1984 Jan.—The Muso Company of Osaka, Japan, appoints Eden Foods its General Agent for North America.

1984 March 2—A series of calamities hit Eden Foods in quick succession. The FDA (U.S. Food and Drug Administration) informs Eden Foods, in a strongly worded letter, that it considers eleven claims in a promotional pamphlet for Edensoy to be erroneous. The FDA advised that the “Good for Babies” section of the pamphlet be deleted.

1985 June 14—The FDA informs Michael Potter that a six-month-old child in Canada had become seriously ill after being fed the company’s soymilk as an infant formula. The mother said her decision to forgo regular infant formula was inspired by Eden’s own literature—the promotional pamphlet cited above which said that Edensoy was “Good for Babies.” Eden took the position: “There’s a problem and were responsible for it.” To date some 18 million packs of Edensoy have been sold.

1985 June 23–Eden Foods voluntarily mails 10,686 requests for a recall of the pamphlet to its distributors and to individual retail stores.

1985 July–Eden Foods forms a joint venture partnership with four Japanese companies, and incorporates in the state of Michigan as American Soy Products, Inc.

1985–Eden opens a west coast sales office and warehouse in San Francisco, California.

1986 May–The Lima Company of Belgium appoints Eden Foods its General Agent for North America.

1986 Nov.–American Soy Products, Inc. launches a new generation of Edensoy soymilk products, in original, vanilla, and carob flavors. Made at a large, new factory in Saline, Michigan, they are packaged in Tetra Brik Aseptic cartons. This is the first aseptic soymilk plant in the USA.

1987 Jan. 1–Eden Foods stops distributing products directly to retail stores (which comprised only 10% of Eden's total sales), drops 150 products, and starts serving as a master distributor, selling only through other distributors. This decision had a very positive effect on Eden's growth; all the energy that was formerly required to attend to 10% of the business was now free to be focused on developing new products and the Eden brand.

1988 April 13–Cliff Adler and Michael Potter are in a serious car accident. Cliff is killed and Michael is seriously injured. Upon Cliff Adler's death, Michael immediately and automatically acquires Cliff's 34% share in the company—because Eden Foods Inc. and Michael and Cliff, jointly and severally, had a buy-sell contract that came into effect in the event that either Cliff or Michael should die. The value of Cliff's stock was \$500,000. Michael pays this amount from his personal funds for the stock. Potter now owns a large majority of Eden Foods' stock.

1988 May–While Eden Foods is still reeling from the effects of the car accident, the FDA files charges against Eden for publishing inaccurate information in a pamphlet which stated that Edensoy was “Good for Babies.” Eden's previous major effort to recall all of these pamphlets from retail stores apparently had little or not effect on the FDA charges.

1988–Eden Foods joins OCIA, the Organic Crop Improvement Association, for independent certification of organically-grown crops.

1989 Jan. 20–Nearly 6 years after Eden Foods published its ill-fated Edensoy pamphlet, the company is fined \$110,000 by a federal judge in Detroit, and its president, Michael Potter, is fined \$25,000 and sentenced to 30 days imprisonment. On Feb. 24 he begins to serve out his sentence in Bay City, Michigan.

1989 Oct. 12–Michael Potter is convicted of manslaughter and sentenced at the circuit court in Ann Arbor to 8-15 years in jail for his role in the April 1988 automobile accident that caused Cliff Adler's death. He begins to serve out his sentence in Oct. 1989 in Coldwater,

Michigan. Ron Roller takes over as president of Eden Foods—the top position.

1989–Eden and OCIA establish standards for food processing as well as growing crops.

1991 mid-June–Ron Roller, president of Eden Foods, is asked to resign from his position. He chooses to leave and go to American Soy products to work full time. There he becomes CEO.

1992–Eden Foods now has 180 distributors, virtually all of whom distribute Edensoy. Owners of stock in Eden Foods include Mike Potter (who owns more than 50% of the shares), Tim Redmond, Mark Cook, Bill Swaney, and at least one other person.

1992 Aug.–Michael Potter returns to work at Eden Foods. He was re-sentenced and his sentence is changed to 60 months probation. 1993 Dec. 31–Potter purchases Tim Redmond's remaining 1,000 shares of Eden Foods stock, which Tim has kept since 1980. \

1460. United Nations Industrial Development Organization (UNIDO). 1969. Expert group meeting on soybean processing and use. UNIDO Document ID/WG.45/3. Held 17-21 Nov. 1969 at Peoria, Illinois.

• **Summary:** Consists of ten papers by various authors, each cited and paginated separately. These proceedings were never published in bound form. Address: Vienna, Austria.

1461. Watanabe, Tokuji. 1969. Industrial production of soybean foods in Japan. Paper presented at United Nations Industrial Development Organization Expert Group Meeting on Soya Bean Processing and Use. 38 p. Document: ID/WG.45/3. Held 17-21 Nov. 1969 at Peoria, IL. [16 ref] Address: Food and Nutrition Div., Food Research Inst., Ministry of Agriculture & Forestry, Tokyo, Japan.

1462. Hesseltine, C.W.; Wang, H.L. 1969. Fermented soybean foods. In: Proceedings of the Third International Conference on Global Impacts of Applied Microbiology. See p. 403-20. Held 7-14 Dec. 1969 at Bombay, India. [11 ref]

• **Summary:** Contents: Introduction: The three fundamental drives of man (food, shelter, reproduction), benefits of soybean fermentation. Sufu. Hamanatto. Natto. Tempeh. Magou (now made in South Africa on a modern industrial scale from fermented corn and soybeans). Address: Northern Utilization Research and Development Div., USDA, Peoria, Illinois.

1463. Shurtleff, William. 1969. The Tassajara food trip. Tassajara, California: Published by the author. 63 p. Dec. 28 cm. [8 ref]

• **Summary:** Each of the 167 recipes is numbered, all show a strong natural foods influence, and many show a macrobiotic influence. Soy-related recipes include: 60.

Fresh daikon nitsuke with miso. 74. Squash in miso-tahini sauce. 76. Nori with tamari. 77. Basic soybean preparation. 78. Soybeans with hijiki. 79. Soybeans with hijiki and tahini (with miso). 80. Soybeans sauteed in miso. 81. Soybeans with lentils and buckwheat flour. 82. Soybeans with carrots and lentil sprouts. 83. Soybeans with dried daikon. 84. Soybean stew. 85. Broiled soyburgers. 86. Roasted soybeans. 87. Tofu sauteed. 96. Miso soup with tofu, carrots, burdock and mushrooms. 97. Miso soup with wakame. 98. Wakame soup with tofu. 99. Soy sauce & lemon soup. 101. Thick lentil soup with miso. 102. Thick lentil soup with miso & vegetables sauteed. 103. Lentil soup with miso and parsley garnish. 105. Aduki/azuki bean soup with miso. 107. Thick split pea soup with miso & vegetables. 110. Navy bean soup with miso. 115. Mushroom soup with dried tofu.

119. Misozuke pickles. 120. Kombu pickled in miso. 122. Bancha with tamari. 123. Kuzu cream with tamari. 125. Ume-syo-kuzu (with umeboshi, tamari and kuzu). 131. Basic soybean spread. 133. Lentil miso spread. 135. Garbanzo and miso spread. 138. Muso (miso-tahini) spread. 139. Peanut butter & tamari spread. 142. Peanut butter, miso, apples, carrot and parsley spread. 161. Sesame tofu (no soy). 163. Nut and seed loaf with miso.

San Francisco's largest natural foods store was New Age Natural Foods, 1326 Ninth Ave. run by Fred Rohé. Also recommended are The Food Mill, 3033 MacArthur, Oakland; and Chico-San, P.O. Box 1004, Chico, California. Selling Spiral Foods miso and tamari in bulk; The General Store, 5th and Junipero in Carmel.

Note 1. This is the earliest document seen (Dec. 2004) concerning the work of William Shurtleff with soyfoods. He wrote the book on a typewriter while practicing at Tassajara Zen Mountain Center, made about 30 photocopies, and sent them to friends as Christmas presents. He did not meet Akiko Aoyagi until 25 Dec. 1971 in Tokyo, Japan.

Note 2. This is the earliest document seen (Dec. 2004) in the SoyaScan database concerning or under the subject heading "Soyfoods Movement." Address: Zen Mountain Center, Carmel Valley, California.

1464. Diamant, E.J.; Ilani-Feigenbaum, Y.; Pinsky, A. 1969. Process for producing mix-type food products. *Israeli Patent 25,917*. *
Address: Bar-Ilan Univ., Israel.

1465. Ebine, Hideo; Matsushita, Z.; Sasaki, H. 1969. [Evaluation of U.S. soybeans as raw materials for making miso: (Part 1) Miso manufacturing test on a laboratory scale (2)]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 183. p. 18-. [Jap]*
Address: National Food Research Inst., Tokyo.

1466. Ebine, Hideo; Matsushita, Z.; Sasaki, H. 1969. [Evaluation of U.S. soybeans as raw materials for making miso: (Part 1) Miso manufacturing test on a laboratory scale (3)]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 185. p. 22-. [Jap]*
Address: National Food Research Inst., Tokyo.

1467. Ebine, Hideo; Matsushita, Z.; Sasaki, H.; Yanai, S.; Ariyoshi, M.; Machii, M. 1969. [Evaluation of U.S. soybeans as raw materials for making miso: (Part 1) Miso manufacturing test on a laboratory scale (4)]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 186. p. 21-. [Jap]*
Address: National Food Research Inst., Tokyo.

1468. Ebine, H.; Matsuura, M. 1969. [Application of *Rhizopus* for shoyu manufacturing: (Part II) Properties of *Rhizopus* enzymes]. *Chomi Kagaku (Seasoning Science)* No. 16. p. 15-. [Jap]*
Address: National Food Research Inst., Tokyo.

1469. **Product Name:** Harmony Foods Miso, and Tamari.
Manufacturer's Name: Harmony Foods (Importer-Distributor). Made in Japan. Imported from Muso Shokuhin.

Manufacturer's Address: Ladbroke Rd., London, England.

Date of Introduction: 1969.

Wt/Vol., Packaging, Price: Imported nulk, in wooden kegs. Miso repacked in plastic bags. Tamari in glass bottles.

How Stored: Shelf stable.

New Product-Documentation: Interview with Bill Tara. 1991. Aug. 18. Among the early Japanese foods imported by Harmony Foods were bulk miso and "tamari" (actually shoyu), imported from Muso in wooden kegs. They repackaged the miso in plastic bags and the shoyu in glass bottles under the Harmony Foods label in London. This was the first Japanese miso and shoyu sold in England.

Listing in *The Vegetarian Health Food Handbook (UK)*. 1974. p. 173. "Tamari Soya Sauce, and Miso (Soya Bean Sauce) by Harmony Foods."

1470. *Cooking good food*. 1969. Order of the Universe Publications, Box 203, Prudential Center Station, Boston, MA 02199. 34 p. No index. 28 cm.

• **Summary:** A simple, concise source of the basic macrobiotic ideas adapted to the American way. Note 1. This booklet was written by Jim Ledbetter, a student of macrobiotic teacher Michio Kushi, although his name does not appear in it.

Contents: The traditional food of man. The way of eating. Salt and oil. Special foods. Useful kitchen items. Cooking brown rice. Cooking other grains. Cooking vegetables. Cooking sea vegetables. Cooking beans.

Cooking soups. Cooking with flours (Cooking noodles, cooking creams, baking bread, variations with flour). Cooking animal food. Preparing salads. Preparing condiments. Preparing drinks. Cooking desserts. Plasters. Traveling and eating out. The manner of eating. The seven levels of cooking.

In Chapter 4, titled “Special Foods” is a section on “Soybean foods” (p. 6), which states: “The soybean has been called the ‘Vegetable Cow’ of the Orient. It is full of good vegetable quality protein (43%). It was not traditionally eaten without special preparation, because it is fairly yin, except by monks who wished to limit their sexual desires. When cured with salt, however, it was used as a daily food. You will find these traditional preparations very helpful in your kitchen.

“Tamari is the ancient form of soysauce, fermented for at least eighteen months from soybeans, salt, wheat or barley, and water, without chemicals or preservatives. It has a very distinctive, delicious taste. It is used mainly in cooking vegetables when it is added after salting and just before the end of cooking time, and in broths. It is rarely used directly on grains, but is often found on the table to use with deep-fried foods. Some women mix tamari with an equal amount of water to make it less strong.

“Miso is a paste made from the same ingredients as tamari. There are two varieties; one (Hacho) is a little harder and darker in texture than the other. It has many uses, especially in soups, in which case it is added towards the end of cooking time so that the wonderful digestion-aiding bacteria it contains will not be destroyed. (All of these soybean condiments produce their best flavor when cooked slightly.) Miso soup has a deep, satisfying bouillon flavor, and is often taken every day as a delicious source of energy. It is helpful to thin miso in a little water before adding it to soups and sauces.

“Morromi [sic, moromi] is the pulp from which tamari has been made. It has a very special tangy flavor, and is used like miso.

“Seitan or ‘Protein X’ is made from the same ingredients as the above condiments. A slightly different process produces a strong jerky which, when boiled or sauteed, resembles beef in appearance and taste. It is very good in soups” (p. 6). Note 2. This is the earliest document seen (July 2005) that mentions “seitan.” It is also the earliest English-language document seen (July 2005) that contains the word “seitan.” By placing seitan in the category of “Soybean Foods,” the author is apparently emphasizing the importance of soy sauce as one of its two main ingredients. He seems to have tasted seitan, but it is not clear that he knows what its other main ingredients are (wheat gluten, ginger, sesame oil) or how it is prepared.

“Tofu is made from fresh soybeans. This curd or ‘cheese’ is a good quality, strong yin food which is very refreshing for occasional use in summer when it is cooked

with tamari. It is helpful to store tofu in water. The more yang pulp, which is usually thrown away, can sometimes be obtained from the Oriental stores which make tofu, and used to make delicious casseroles or well-sauteed vegetable dishes.”

The section on “Condiments” (p. 6-7) discusses Gomasio (Sesame salt), umeboshi (salted plums), and Tekka. The section on “Oriental vegetables” (p. 7) discusses lotus root, daikon, ginger root, Chinese cabbage, jinenjo (Japanese potato), and kuzu arrowroot.

In the chapter titled “Cooking Beans” the author considers “Aduki Beans” to be the “King of Beans.”

“Black Beans: The imported Japanese black beans are higher nutritional quality and superior taste. They are very sweet, delicious beans. They should be soaked and boiled, because their skin can become loose and clog a pressure cooker spout.”

“Miso Soup: This hearty bouillon is the staple everyday soup. Prepare vegetables and boil for at least one-half hour (if you want a really good soup); thin miso with a little of the stock in a bowl and add it to the soup towards the end. Do not boil the soup after adding miso or the beneficial digestion-aiding bacteria will be harmed. If it is simmered very slowly, it can be cooked from 5 minutes to one hour.

“Tamari Soup: Prepare as above using tamari instead of miso for flavoring. A simple tamari broth with onions or carrots and onions is often served over dishes such as noodles.”

In the chapter titled “Preparing Condiments” (p. 27) we read: “Vegetable Miso. Slice vegetables finely and saute. Add diluted miso and water and cook. Scallions, chives, carrot tops and many other vegetables are good prepared in this manner. ‘Tekka’ is made from lotus root, burdock root and carrots. ‘Sigure’ [Shigure] (‘November Rain’) is prepared with lotus roots, carrots, and onions. A little freshly grated ginger is often added towards the end of the cooking. A small amount of these condiments is usually sufficient.”

The chapter titled “Preparing drinks” (p. 28-29) discusses Mu tea, umeboshi tea, chicory, Yannoh [Ohsawa coffee], dandelion coffee, Bardan, Kokkoh, kuzu, ume-syo-kuzu, and daikon drink.

The chapter titled “Cooking Desserts” (p. 30) states: “Amasake (Homemade Rice Wine). For special occasions this drink is very smooth and sweet.”

Tofu is also mentioned in the chapter titled “Plasters” (p. 31). “Tofu Plaster. Squeeze tofu (soy bean curd, see *Special Foods*) and mix with 10% flour to make it more manageable. Apply this to any painful, feverish, or inflamed area. Alternating tofu plasters with ginger compresses often helps stubborn cases.”

Note 3 This is the earliest document seen (July 2000) that mentions “Hacho” miso (spelled that way).

Subsequently, many macrobiotic publications used this word and spelled it that way.

The chapter titled "Cooking sea vegetables" briefly defines kombu, wakame, hiziki (the incorrect idea concerning "black rice" comes from a casual remark by Evan Root), arame, dulse, and nori (laver).

Note 4 One original edition of this booklet, sent to Soyfoods Center by Tim Redmond (a founder of Eden Foods), has one dark blue stalk of wheat against a light blue background. In the lower right corner of the cover the following has been stamped with a blue ink stamp: "Eden Organic Food Store, 514 E. William, Ann Arbor, Mich. [Michigan] 48104." Address: [Massachusetts].

1471. Cowan, J.C. 1969. Soybeans. In: Encyclopedia of Chemical Technology. Vol. 18. 2nd ed. New York: John Wiley & Sons (Interscience Publishers). See p. 599-614. 27 cm. [44 ref]

• **Summary:** Contents: Introduction: Composition, standards and trading rules. Handling and storage. Processing: Preparation, screw-press and extruder-cooker operations, solvent extraction. Soybean products: Oil, meal and meal products, soy flour and related products, soy sauce and other food specialties (soybean milk, tofu, miso, natto, tempeh, sprouted soybeans, green vegetable soybeans). Production and export. Bibliography.

"An estimated 50 million lb of soy flour was marketed in 1967. About one-half of this went into pet foods and the rest into foods for humans." Address: USDA.

1472. Hosokawa, Nobuo; Nanba, T.; Takeuchi, T.; Yoshida, T.; Yoshida, M.; Amano, T.; Yoshii, H. 1969. Miso shōyu jōzō ni okeru kōso-zai no riyō ni kansuru kenkyū. III. Kōso-zai ni yoru tanshoku-kei kara miso no shijō [Studies on the use of enzyme preparations in miso and soy sauce brewing. III. Trials on the application of some kind of mold protease preparation for light-colored salty miso]. *Aichi-ken Shokuhin Kogyo Shikenjo Nenpo (Annual Reports of the Food Research Institute, Aichi Prefecture)* 9:83-88. For the year 1968. [10 ref. Jap]

• **Summary:** Enzymes used included Takadiastase and papain. Address: Food Research Inst., Aichi prefecture, 2-1 Shinpukuji-cho, Nishi-ku, Nagoya-shi 451, Japan.

1473. Hosokawa, Nobuo; Yoshii, H.; Takeuchi, T.; Yoshida, M.; Nanba, T.; Amano, T. 1969. Miso shōyu jōzō ni okeru kōso-zai no riyō ni kansuru kenkyū. II. Tamari shōyu ni taisurusansei puroteaze seizai no tenka kōka [Studies on the use of enzyme preparations in miso and soy sauce brewing. II. On the effect of acid protease preparation for tamari soy sauce brewing]. *Aichi-ken Shokuhin Kogyo Shikenjo Nenpo (Annual Reports of the Food Research Institute, Aichi Prefecture)* 9:80-82. For the year 1968. [7 ref. Jap]

Address: Food Research Inst., Aichi prefecture, 2-1 Shinpukuji-cho, Nishi-ku, Nagoya-shi 451, Japan.

1474. Kwon, Shin Han. 1969. Soybeans and soybean products in Vietnam. Saigon: Republic of Vietnam, Ministry of Land Reform and Development of Agriculture and Fisheries, Agricultural Research Inst. 113 p. 28 cm. [60 ref. Eng]

• **Summary:** Contents: 1. Introduction: History of soybean, production and trade in the world and in Vietnam, utilization of soybean (uses, nutritive value of the soybean). 2. Botany of the soybean plant: Seed, stem and pubescence, leaves, flower parts, root and nodule bacteria, genetics. 3. Ecological requirement: Germination, temperature, rainfall, day length, soil. 4. Cultivation and storage: Planting (land preparation, depth of seeding, methods of seeding, rate of seeding, time of seeding, rotation, erosion), fertilizer (manure, nodule bacteria, nitrogen, phosphorus, calcium, potash, molybdenum, application), insects (maggot fly, soybean insects found in Vietnam, control), diseases (root disease, foliage disease, seed disease), weed control, harvesting and threshing (harvesting time, methods of harvesting, drying). 5. Variety improvement: Aims of improvement (high yielding variety, disease resistance, insect resistance, day length, varieties tolerant to unfavorable soil conditions, seed size, seed color, oil and protein content in seed, palatability), introduction method, pure line selection method, breeding method (making the cross, pedigree method, bulk method), regional trials, variety purification and multiplication (breeder's seed, foundation seed, stock seed, extension seed, maintenance). 6. Seed certification standard. 7. Bibliography.

The author thanks for their help: Dr. Thai-Cong-Tung, Director of the Agriculture Research Institute, and Mr. Nguyen-Huu-Quy, Manager of Eakmat Experiment Station.

In Vietnam, the soybean is still not a very familiar crop to the majority of farmers. Although the acreage has gradually increased since 1958, it has not yet reached 10,000 tons by 1967. According to the *Agric. Statistics Yearbook*, in 1966 in South Vietnam, total soybean acreage was 6,610 hectares and production was 7,585 metric tons, or 1.148 tonnes/ha. The main soybean producing provinces are all in the southern half of the country: Long-Khanh (40% of total South Vietnamese acreage), An-Giang (20.4%), Chau-Doc, Kien-Phong, and Binh-Dinh (5%). In 1963 some 1,440 tones of soybeans were imported and in 1966 some 100 tonnes were exported.

Table 4 shows an estimate of the costs and returns per hectare of growing soybeans at the Eakmat Agricultural Experiment Station in Ban-Me-Thuot in 1968. The net income or profit from one hectare was about VN\$26,000, which is larger than for any other field crops, including: cassava (VN\$22,766), mung beans (\$20,267), sweet

potatoes (\$19,269), upland rice (\$6,828), corn (\$6,569), and peanuts (VN\$5,100).

Uses: "In Vietnam, the soybean is not commonly used in daily food, but a number of foods such as soysauce, tuong [a soft kind of miso resembling Chinese chiang in consistency, and sold in crocks], bean curd, vermicelli, soymilk, soybean wine, chao [fermented tofu, sold in bottles], soybean oil, [soy] bean sprouts, and green pods [green vegetable soybeans] are available in the market and they are gradually becoming popular among Vietnamese.

The highest yielding soybean varieties in Vietnam are presently Palmetto and E-32. In trials, they yield about 1 tonne per hectare. Address: FAO Agricultural Officer. Phone: Saigon 91.746.

1475. Misumi, Kan. 1969. *Miso daigaku* [Miso university: The great teaching on miso]. Tokyo: Bungeisha. 230 p. Illust. 22 cm. Reprinted in 2001 by Gendai Shokan in Tokyo. [Jap]

• **Summary:** Contents: 1. The art and skill of making miso. 2. Thoughts about miso. 3. Barley miso. 4. Aged miso. 5. The limitless art of miso. 6. Wheat miso. 7. American miso. 8. Farmhouse miso. 9. Kumakusu miso. 10. Selective art. 11. Hangover treatment. 12. Kinzanji miso. The author's thoughts about miso. Additional discussion on pickles.

Kan Misumi, the author, lived 1903-1971. This book, which contains numerous excellent photos (many in color) and recipes, is a highly personal and literary approach to the subject of miso by a Kyushu-born novelist who, upon retirement, turned his spacious Tokyo home into a center for the study and preparation of miso and miso pickles. This volume and its companion, *Pickle University (Tsukemono Daigaku)* contain a wealth of information about the preparation of both these foods in the traditional, natural way.

Note: This is the earliest document seen (March 2009) that gives detailed, illustrated directions for making miso at home. Address: Dr. of Literature (Bungei Hakase), Tokyo.

1476. Misumi, Kan. 1969. *Tsukemono daigaku* [The great teaching on pickles]. Tokyo: Bungeisha. 266 p. Illust. No index. 22 cm. [Jap]

• **Summary:** This book contains many excellent photos and recipes. Contents: Pickles and health. Then 25 chapters on various types of pickles. Chapter 10 is umeboshi (salt plums). Chapter 15 is koji pickles. Chapter 16 is miso pickles and sand pickles (*sunazuke*). Address: Bungei hakase, Tokyo.

1477. Nishiyama, Buichi; Kumashiro, Yukio. trans. 1969. *Seimin yôjutsu*. 2nd ed. [Ch'i-min yao-shu (Qimin yaoshu)]. Tokyo: Asian Economic Press (Ajiya Keizai Press). [Jap]

• **Summary:** Translation into Japanese with explanatory notes and extensive general discussion.

1478. Ohsawa, Georges (Nyoiti Sakurazawa). 1969. *Le Zen macrobiotique; ou, l'art du rajeunissement et de la longévité* [Zen macrobiotics, or the art of rejuvenation and longevity]. Paris: Librairie Philosophique J. Vrin. 212 p. Index. 19 cm. Preface by Cauvet-Duhamel. [Fre]

• **Summary:** Contents: Preface, by Cauvet-Duhamel. Foreword, by G. Ohsawa. 1. Macrobiotics and the medicine of the Orient. My therapeutics. 3. The seven conditions of health and happiness. 4. With faith, nothing is impossible. 5. Yin and yang. 6. My macrobiotic cuisine and the ten ways of eating properly. 7 Principal foods (*Les aliments principaux*). 8. Secondary foods. 9. Special dishes. 10. Suggestions for some illnesses / maladies. 11. Healing regimens. 12. Food for infants. 13. Some ideas.

Appendixes: A cure in 10 hours. Pro-forma death certificate for the world empire of the American gold dynasty. My talks in the United States (starting in Nov. 1959, in New York, Los Angeles, and San Francisco). The despair of American doctors according to the *Times* of 7 March 1960 (listing of the number of people with 17 incurable diseases). How much does the death of a civilization cost? The real cause of sickness, unhappiness, and war. Professional education and religion. Medicine's last cry of despair. The medical revolution in the China of Mao Tse-tung. Medicine: God alone understands it. My prophecy.

The following foods are discussed: Rice, buckwheat, millet and other cereals (p. 67-77). Azuki beans (p. 98). Sesame tofu (p. 98). Sea vegetables (konbu, hijiki, p. 101-05). Miso and miso recipes (p. 105-08, incl. Tekka). Shoyu and shoyu recipes (p. 108-10). Ohsawa coffee (Yannoh, with azuki, p. 111-12). Syo-ban (Natural green tea with shoyu, p. 113-14). Kuzu (p. 114). Umeboshi juice (p. 116-17). Ume-syo-ban (umeboshi and tamari shoyu, p. 117). Ume syo-kuzu (with umeboshi, shoyu, and kuzu, p. 117). Miso fried in sesame oil (p. 118).

Note 2. The author, born in 1893, lists his name on the title page as "Georges Ohsawa (Nyoiti Sakurazawa)."

1479. Rudzinski, Russ. 1969. *Japanese country cookbook*. San Francisco, California: Nitty Gritty Productions. xvi + 198 p. Illust. by Mike Nelson. 14 x 22 cm.

• **Summary:** A surprisingly large number of the recipes in this cookbook contain soyfoods. Soy-related recipes include: Sukiyaki (with tofu and shoyu, p. 5-10). Teriyaki (normally done on a hibachi grill; *teri* = shiny or glazed and *yaki* = broiled, p. 16). Miso shiru (p. 20). Chicken teriyaki with sesame seeds (with shoyu, p. 24). Chicken liver teriyaki (with shoyu, p. 26). Shrimp teriyaki (with shoyu, p. 28). Spicy shrimp teriyaki (with shoyu, p. 28-29). Tofu dengaku (p. 29). Tofu yaki (fried) (with miso and shoyu, p.

29). Tofu soup (p. 48). Kaki no miso suimono (Oyster soup with soybean paste, p. 55). Vegetable and noodle miso soup (p. 56). Shrimp miso (p. 56). Takara yaki (omelette with tofu, p. 65). Tofu-egg cakes (p. 66). Tofu-egg omelette with white toasted sesame seeds (p. 66). Fried tofu with egg (p. 67). Cabbage with miso sauce (p. 85). Horenso (spinach) with miso (p. 89). Karai nasubi miso (Spicy eggplant with miso, p. 94). Goma nasubi miso (Eggplant with miso and sesame seed paste, p. 95). Tofu sauce (p. 102). Inari sushi (with aburage, p. 110-11). Miso dango (meatless rice-based patties / balls, p. 117). Soba (buckwheat noodles) with miso sauce (p. 122). Tofu to niku donburi (bowl with meat and tofu, p. 127). Sakana no nitsuke (fish cooked with miso, p. 135). Shiroy sakana no nitsuke (white fish with miso, p. 136). Tofu to ebi no kuzu-ni (tofu and prawns in kuzu sauce, p. 139). Simple kaki (oyster) miso (p. 140). Kaki nabe (pot of oysters with miso, p. 141). Kaki to tofu nabe (oyster pot with tofu and white miso, p. 141). Yaki hamaguri (broiled clams with white miso, p. 143). Kawari tofu nori zuke (prawn dumplings with tofu, p. 148). Tori dango miso (fried ground chicken with miso, p. 162). Tofu, pork and vegetables (p. 167). Mashed tofu and ground pork (p. 168). Buta nabe (pou-au-pork with tofu, p. 168). Pork mizutaki (with tofu, p. 169). Beef mizutaki (with tofu, p. 175-76). Shabu-shabu (with tofu, p. 181). Shoyu is used in many, if not most, of the recipes in this book.

At the back is a glossary, which includes definitions of aburage, miso, shoyu, and tofu. Address: California.

1480. Saito, Akio. 1969. [Chronology of soybeans in Japan, 1950 to 1969] (Document part). In: Akio Saito. 1985. Daizu Geppo (Soybean Monthly News). Feb. p. 15-16. [Jap]

• **Summary:** 1950–The production of soybeans increases greatly to 446,900 tonnes (2.1 times more than in recent years).

1950–In March, the food ration system organization is closed. In July the ration systems for miso and shoyu are removed.

1951 March–The restrictions for soybeans and rapeseed are removed. From this time on, the number of natto makers increases rapidly.

1952–Soybean production in Japan reaches 521,500 tonnes, the largest since World War II.

1953 Jan.–Restrictions are imposed on imports of foreign soybeans paid for in foreign currencies.

1955. Rice production in Japan this year is 12,390,000 tonnes (up 35.9% over last year). This is the first time it has topped 12,000,000 tonnes. Irrigated rice cultivation (*suiden*) is 20% more than last year. The days of rice shortages are over and the black-market price of rice falls. The per-capita direct consumption of soybeans for the year is 4.5 kg (This information comes from *Norin Suisan-sho, Shokuryo Jukyu-ho*).

1955 April–Soybeans from Brazil are graded using the AA system (*Yunyu jido shonin sei*).

1956–A new natto container is invented, made of shaved wood (*kyogi*) lined with a polyethylene sheet.

1956 June 13–New regulations for agricultural products and price stabilization. Domestic soybeans are added to them.

1956 Oct.–The tax on imported soybeans rises to 10% and the no-tax system for soybeans is removed.

1959–The first instant miso soup is introduced by Yamajirushi Miso in Nagano. It contains dried green onions, wakame, dried tofu [probably dried-frozen tofu], etc.

1959–At about this time research begins on meat analogs made from soy protein.

1960–Per capita consumption of shoyu drops to 13.7 kg. It has now fallen below 14 kg/person.

1960–Soybean imports rise to 1,128,000 topping the 1,000,000 level of the first time.

1961 July 1–The tax on imported soybeans is removed.

1962–A new natto container made of Styrofoam is invented (*PHP yoki, happo suchiroru*).

1963–In the USA General Mills starts to sell meat analogs made from soy protein.

1965–Per capita miso consumption drops to 7.8 kg, falling below 8 kg/person.

1965–Production of defatted soybean meal reaches 1,074,000 tonnes, passing the 1 million tonne mark for the first time. Production has risen 56% in during the past 5 years.

1966–At about this time meat analogs based on soy protein start to be sold commercially in Japan–to institutions.

1966–Soybean imports rise to 2,168,467 tonnes, passing the 2 million tonne mark for the first time.

1966–Production of soybeans in Japan drops below 200,000 tonnes for the first time. Japan now produces only 9% of the soybeans it consumes.

1966 May–Kikkoman starts selling low-salt shoyu.

1968–Meat analogs based on soy protein start to be sold to the general public in Japan.

1968 June–Research conducted by the *Mainichi Shinbun* shows that the size and price of tofu is now different in different areas. In Tokyo it sells for 25 yen per 300 gm or over. Cakes of tofu sold in downtown Tokyo (*shitamachi*) are smaller than those sold uptown (in the hilly sections) (*yamanote*). Some tofu shops that are not members of the tofu association sell it for 15 yen per 350 gm. In Nagoya it retails for 30 yen per 450 gm, and in Northern Kyushu 25 yen per 450 gm. Per capita consumption of tofu is 33 cakes (*cho*) a year.

1969–Per capita consumption of soy oil in Japan rises to 3.2 kg, passing the 3 kg mark for the first time. In 1969 it was 1.2 kg/person. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

1481. Shinojima, Chu; Ashihara, Tamako. 1969. Practical shoyu cooking: Delicious dishes with Japanese soy sauce. Tokyo: Japan Publications Inc. 61 p. Illust. No index. 26 cm. [Eng]

• **Summary:** Contents: Introduction. Helpful hints on how to use this book. Egg dishes. Beef and veal dishes. Okinawan dishes. Chicken dishes. Japanese soy sauce–Shoyu. Pork dishes. Modern Japanese cooking. Canned foods and salads. Desserts. Tofu dishes and soups. Fish dishes.

Contains many full-page color photos. The word “shoyu” is used throughout the book, and all recipes call for the use of “shoyu.” The chapter titled “Japanese soy sauce–Shoyu” (p. 32-33) begins: “Shoyu is the single seasoning without which the art of Japanese cooking would be impossible. Its flavor and fragrance also blend beautifully with food of other countries, and shoyu is now in use throughout the world. Japan’s largest shoyu producer, the Kikkoman Shoyu Company, exports its product to 51 countries around the world.” It also notes that among the traditional influences on Japanese cooking, that “of Buddhism was especially strong in regard to developing a respect for the natural flavor of each food item. The best means of bringing out the flavor of each food was found to be through the use of shoyu.”

1482. Steinberg, Raphael. 1969. The cooking of Japan. New York, NY: Time-Life Books. 208 p. Illust. General index. Recipe index (English). Recipe index (Japanese). 28 cm.

• **Summary:** A superb, elegant book, that (with its spiral-bound companion volume of recipes) captures in both words and photos (by Eliot Elisfon) the true spirit of Japanese food and cookery. Contents: Introduction: Solving the mysteries of Japan’s marvelous cuisine, by Faubion Bowers. 1. The heritage of a remarkable past. 2. Foods to suit the seasons. 3. The logic of Japanese cookery. 4. The world’s greatest seafood. 5. Simple, satisfying foods of home. 6. A ceremony that sired a cuisine (*kaiseki* or tea ceremony cooking, with roots in 13th century Zen Buddhism). 7. Eating out as a way of life. 8. Magnificent meals in elegant settings.

Soy-related: The writer of the introduction snacked on odorous, fermented soy beans (*natto*) at night before retiring (p. 6). His son said to him recently, “Please, Dad. Not *tofu* again!” (p. 7). Importance of the soybean (p. 16-17; China has had a huge impact on Japanese culture. “Perhaps the most important food innovation contributed by China was the soybean, which in various disguises is still the foundation stone of Japanese cooking.”). Shoyu is the Japanese word for soy sauce (p. 26). Tofu (soybean curd), which is cooked with other foods throughout most of the year, becomes a dish in its own right during the summer, served on ice and flavored with soy sauce (as *hiyayakko*, p. 32). Photos of tofu, shoyu, green soybeans [*edamamé*] and

akadashi miso in prepared festival dishes (p. 34-35). *Matsutake* mushrooms with tofu or shoyu. “The most important lesson to be learned deals with the ubiquitous role of the soybean. Generally considered by Westerners to be the most humble of vegetables, the soybean is in fact the king of the Japanese kitchen. One might almost say that Japanese cuisine is built upon a tripod of soybean products: *miso*, a fermented soybean paste; *tofu*, a custardlike soybean cake; and soy sauce, used both to season foods as they are being cooked and to make dipping mixtures that enhance the flavors of the foods as they are being eaten.” Details about these three products and their uses is then given (p. 41-42). Teriyaki or “shining broil” (p. 43). Two-page color photo shows (p. 44-45): Azuki beans and *kuromame* (black soybeans), sesame seeds, sesame oil, *fu* (wheat gluten croutons), *aonoriko* (powdered green seaweed), Kikkoman shoyu, *aka miso*, *shiro miso*, *tofu*, nori and wakame. Ponzu, a dipping sauce which is half soy sauce and half lemon or lime juice (p. 46). Sukiyaki (p. 46). Tempura (p. 49). *Aemono* and *sunomono* with tofu, miso, or soy sauce (p. 48). Photo of a tofu-slicing knife with a serrated blade (p. 50). Recipes: Clear soup with tofu and shrimp (*Sumashi wan*, p. 55). Miso soup with red and white miso (p. 56-57, 59). Miso-flavored pork and vegetable stew (*Satsuma-jiru*, p. 61). Soy and sesame-seed dressing with string beans (*Goma joyu-ae*, p. 62; with “½ cup white sesame seeds, toasted and ground to a paste”). Tofu and sesame-seed dressing with vegetables (*Shira-ae*, p. 63; “Add the sesame seeds..., warm them until lightly toasted. Grind them to a paste in a *suribachi* (serrated mixing bowl) or, more easily, pulverize them at high speed in an electric blender with 1/8 teaspoon of soy sauce. Transfer the sesame-seed paste to a mixing bowl...” Two color photos show: (1) Toasted sesame seeds in a *suribachi* with a wooden pestle. (2) When ground, they “quickly release their oil and turn into a paste”). White miso dressing (*Neri shiro miso*, p. 67). Photo of *zensai*, incl. miso-marinated asparagus, and abalone cooked in soy sauce (p. 72). Sashimi dipped in soy sauce (p. 81-83, 90-91).

Undersea vegetables: nori, kombu, wakame, hijiki (p. 88-89). Recipes: Sushi (p. 95-101). Tempura (p. 103). Mirin and soy dipping sauce for tempura and noodles (*Soba tsuyu*, p. 104). Deep-fried tofu in soy-seasoned sauce (*Agedashi*, p. 105).

Tofu is the Japanese word for soybean curd (p. 108). Umeboshi (p. 109). Miso soup (p. 109-10). Natto and miso (p. 115). Tofu and shoyu in *yudofu* (p. 116). Sekihan and azuki (red beans, p. 120). *Mame* (“beans”) are served at traditional wedding feasts; the word also means good health. Mochi (p. 121). Recipes: Sekihan (p. 126). Fox noodles with deep-fried tofu (*Kitsune udon*, p. 127). Bubbling tofu (*Yudofu*, p. 132-33). *Sukiyaki* (p. 134). *Shabu shabu* (with tofu, p. 135).

Tofu and miso in *kaiseki* cuisine based on Zen Buddhism and the tea ceremony (p. 146-49). Teriyaki, mirin, ponzu, tofu (p. 152). Tofu and shoyu (p. 159). Sasanoyuki restaurant in Tokyo (uses tofu as a main ingredient in every dish, p. 160-61). Sukiyaki, with tofu and soy sauce (photo, p. 166-67). Broiled mackerel in miso marinade (*Miso zuke*, p. 169). Dengaku tofu (p. 172-73, with color photo). Beef teriyaki (with shoyu, p. 174-75). Yakitori (with teriyaki sauce, p. 174-75). Grilled chicken with sweet soy-seasoned glaze (*Tori teriyaki*, p. 176). Black soybeans and tofu (p. 188). At a geisha house, shoyu is called *murasaki* ("the purple").

A guide to Japanese ingredients (glossary): Incl. aji-nomoto, aonoriko, azuki, fu, goma, goma-abura, hichimi (shichimi) togarashi, kombu, konnyaku, mirin, miso, MSG, nori, shoyu, soba, tofu, umeboshi, wakame, wasabi.

Note: The spiral-bound recipe book accompanying this volume contains the recipes in the parent volume and no new information; the binding makes it easier to use in the kitchen. Address: USA.

1483. Ucko, P.J.; Dimbleby, G.W. eds. 1969. The domestication and exploitation of plants and animals: Proceedings of a meeting of the Research Seminar in Archaeology and Related Subjects held [18-19 May 1968] at the Institute of Archaeology, London University. Chicago, Illinois: Aldine Publishing Co.; London: Gerald Duckworth & Co. Ltd. xxvi + 581 p. Illust. General index. Index of sites and localities. Index of authors. 26 cm. [500+* ref]
 • **Summary:** One goal of this seminar is to gain an "insight into modern man's relationship to his habitat. In the last decade or two a change in methods of investigating these events has taken place, due to the mutual realization by archaeologists and natural scientists that each held part of the key and neither alone had the whole. Inevitably, perhaps, the floodgate which was opened has resulted in a new spate of knowledge..." "This meeting was called so that workers in the archaeological, anthropological, and biological fields could bridge the gap between their respective disciplines..." (p. ix).

"Mankind took an immensely long time to learn how to gain food by any other means than hunting, fishing and gathering. Our record of manufactured tools goes back over one million years but evidence of domesticated animals and plants only starts at a date somewhere near the end of the European Ice Age, i.e. after ca. 10,000 BC" (p. xvii).

While archaeology is presently best suited to study domestication, a movement is taking place in archaeological thought which recognizes the essential unity of the ecological approach; man is increasing being viewed as part of an ecosystem in which he has played a significant, if not dominant, role for some millennia. Increasingly man is seen as "another animal in the world of nature" (p. xxiii).

One cannot solve a problem unless one asks the right questions. And to ask the right questions one must look at the problem from a particular viewpoint. "That viewpoint, so far as the origin of domesticated plants is concerned, is, I am convinced, the ecological one... we must look at wild and cultivated plants associated with man as an ecological complex and view this in relation to the ecology of man himself." Scientists must search for exact "archaeobotanical data."

Vavilov considered the soyabean a primary crop (Hawkes, p. 25). In Indonesia, "fermented cakes of soya beans and groundnut [tempeh and onchom] provide about one-third of the total crude protein requirement of the population..." (Stanton, p. 464). In Japan, advanced fermentation processes are used to make miso and shoyu. Today these fermentations take place under highly controlled, industrial conditions in highly specialized environments (Stanton, p. 467).

This book shows clearly that many crops were domesticated before the soybean. In China, foxtail millet (*Setaria italica* var. *germanica*), broom corn millet (*Panicum miliaceum*), rice (*Oryzae sativa*), and wheats (*Triticum* spp.) have been identified in neolithic contexts (Watson, p. 398-99). In Tehuacan, Mexico, radiocarbon datings for common beans (*Phaseolus vulgaris*) have been reported from 5,300 B.P. [before the present] (Smartt, p. 452-53). Chili peppers (*Capsicum annuum*) share with *Phaseolus* beans and the Cucurbits (squashes) the distinction of being among the first plants cultivated in the New World (Americas). Chili peppers have been found in early sites in both Middle and South America. In Mexico, they have been dated back to about 7,000 BC. "This antedates the development of agriculture and implies that wild plants were being exploited." The first plants cultivated in Peru appear to be gourds and squashes, but by 2000 BC peppers were grown in the Ancon area on the central coast (Pickersgill, p. 443, 446-47). Address: 1. Dep. of Anthropology, University College, London; 2. Dep. of Human Environment, Inst. of Archaeology, London.

1484. Yamaguchi, Kozo. 1969. Jôzô kikai: Sake, miso, shôyu seizô no kindaika o hakaru [Brewing machines: Designing for the modernization of sake, miso, and shoyu production]. Tokyo: Chijin Shokan. 169 p. (Modern Engineering Library). [20+ ref. Jap]*

1485. Erewon Trading Co., Inc. 1970. Traditional foods: Importers, processors, distributors. Wholesale-retail catalogue. Boston, Massachusetts. 12 p. Jan. 1. 22 cm. [2 ref]

• **Summary:** On the cover is the silhouette of three heads of grain on the plant, by a Japanese crest. The company sells the following types of foods: 1. Grains: Brown rice (short grain Kokuho Rose grown by Koda Brothers), Sweet brown

rice (Koda Bros., more glutinous than brown rice). 2. Beans: Azuki beans (imported from Hokkaido), Black beans (“Kuromame, a black soy bean import”), Chickpeas (Garbanzo, imported from southern Europe). 3. Sea vegetables: Dulse (From Grand Manan Island, Canada), hiziki, kombu, nori (dried laver), wakame (the latter 4 imported from Japan).

4. Soy Bean Products: Soy sauce (“Aged naturally in wooden kegs at least 18 months”; 16 oz, 32 oz, 18 litre keg). Hacho miso (“Soybean puree made from soybeans, salt & water. No chemicals used in fermentation. Aged at least 18 months”; 1 lb, 2 lb, 44 lb keg). Mugi miso (“Soybean puree. A lighter miso made with barley”; 1 lb, 2 lb, 44 lb keg). Moromi (“A thick sauce removed from the bottom of the soy sauce kegs after fermentation. Its uses are unlimited in soups & sauces”; 7 oz.). Seitan (“Wheat and soy sauce cooked together for a long time. When used in soups or sauteed in vegetables it has a taste much like beef”; 3½ oz.). Note 1. This is the earliest document seen (July 2005) that mentions seitan and clearly understands what it is.

5. Condiments: *Furikake* (“A tangy sesame condiment made from Miso, sesame seeds, soy flour, nori and bonito [sic, bonito] flakes”; 3½ oz.), Daikon pickle, Sesame miso (“A hearty condiment for use on rice and other grains. Made from miso and unhulled sesame seeds”; 3½ oz). Tekka (“A strong dark condiment; famous for its medicinal qualities. Made from carrots, burdock, lotus, ginger, sesame oil, and miso”; 3½ oz), Sesame seeds, Sesame tahini.

6. Sea salt: Grey unrefined (from the Mediterranean Sea, unwashed and unground), White unrefined. 7. Oils: Corn germ oil (unrefined, pressed. No solvents, chemicals, or preservatives), Sesame oil. 8. Noodles: Ito soba, Kame soba, Udon. 9. Beverages: Kukicha, Kohren (Lotus root powder), Mu beverage (made from 16 different herbs), Yannoh (coffee-like drink made from grains and beans).

10. Miscellaneous: Dentie toothpowder (made from eggplant and salt), Kuzu arrowroot, Umeboshi & chiso [shiso, shisonoha, or beefsteak leaves], Umeboshi (“Salt plums aged in wooden kegs for at least 3 years”).

11. Cookbooks (written in America): *Cooking Good Food*, and *Cooking with Grains and Vegetables*.

The majority of the above products are imported, mostly from Japan.

The inside front cover states: “Due to the growth of our business and our belief that good quality food should be available at low cost, we have eliminated many items from our wholesale list. We have eliminated most grains because excellent quality grains are available from many sources at more reasonable prices than we are able to charge. Two excellent sources for grains are Arrowhead Mills, Box 866, Hereford, Texas, and Pioneer Specialty Foods, Box 427, Fargo, North Dakota. Also eliminated from our wholesale list is Chico-San products. For these please write directly to

Chico-San, 1262 Humboldt Ave., Chico, California, or contact any health food distributor.”

Note 2. The products in this catalog do not require refrigeration; they contain no refined sugar / white sugar, no meat, and no dairy products—just like the catalogs of almost all subsequent natural food distributors during the 1970s and 1980s.

Note 3. This is the earliest existing Erewhon catalog seen, and the earliest document seen (Sept. 2005) concerning Erewhon and soy.

Note 4. This is the earliest document seen (March 2006) that mentions Arrowhead Mills, of Hereford, Texas. Address: 342 Newbury Street, Boston, Massachusetts 02115. Phone: 617-262-3420.

1486. Hellendoorn, E.W. 1970. Onbewerkte en bewerkte peulvruchten in onze voeding [Unprocessed and processed legumes in our food]. *Voeding* 31(1):1-14. Jan. 15. [10 ref. Dut]

• **Summary:** The soybean (*de sojaboon*) and soyfoods (p. 6-7) include: Soybean meal (*sojameel*), soy oil (*de olie*), soy sprouts (*gekiemde sojaboonen*), tofu (*tahu*), soy sauce (*sojasaus*), miso, and tempeh. Address: Doctor, Centraal Instituut voor Voedingsonderzoek TNO, Zeist.

1487. Centre de Documentation Internationale des Industries Utilisatrices de Produits Agricoles (CDIUPA). 1970—. IALINE (Industries Agro-Alimentaires en Ligne) base de données [IALINE (Food and Agricultural Industries On-Line) database]. 1, avenue des Olympiades—91300 Massy, France. [271542 ref. Fre]

• **Summary:** This is the world’s best database for French-language publications related to food and nutrition. It first became available for use in Jan. 1970, and that is also the date of the earliest record in the database. It is produced by the Center for International Documentation on Industrial Utilization of Agricultural Products (CDIUPA), founded in 1965 by the French Ministry of Agriculture. CDIUPA is administered by APRIA (*Association pour la Promotion Industrie Agricole*), which is a member of the International Commission of Agricultural and Food Industries.

The current contents of the database is published in a monthly journal titled “Industries Agro-Alimentaires: Bibliographie Internationale,” which began under that title in Jan. 1983. It was preceded by *Bibliographie Internationale des Industries Agro-Alimentaires. Bulletin Bibliographique* (published from Jan. 1967 to Dec. 1982). In the monthly journal, the citations are grouped under 6 broad headings: 1. General (with 8 subcategories). 2. Agro-food industries (industries agroalimentaires; with 17 subcategories; Many documents on soyfoods are cited in subcategory N titled “*Protéines d’origine animale, végétale, microbiologique, algues et levures aliments*”). 3. Fermentation industries (with 6 subcategories). 4. Food

microbiology. 5. Food toxicology. 6. Utilization and adding value to agricultural and food-industry by-products. Biotechnology. The journal contains 3 indexes: Subject index. Index of sources (periodicals [with journal names written out in full], acts of congress, books, theses). Author index.

Information related to soyfoods is likely to be found under the following headings in the subject index: *Aspergillus oryzae*; Farine de soja (incl. soy flour, and roasted soy flour or kinako); Huile de soja (soy oil); Koji; Lait de soja (soymilk); Miso; Nato (incl. natto); Produit à base de soja (incl. dawa-dawa, kinema, soy cheese [western style], soy nuggets/Hamanatto, soynuts, soy ice cream, soy yogurt, thua-nao, yuba), Protéine de soja (soy protein products); Protéine de soja, Produit extrudé (extruded soy products); Protéines d'origine animale, végétale; Sauce de soja (soy sauce); Soja (incl. green vegetable soybeans); Soja, germe (soy sprouts); Sufu (fermented tofu); Tempeh; Tofu. Address: Massy, France. Phone: (1) 69.20.97.38.

1488. **Product Name:** Furikake, Sesame Miso, Tekka. **Manufacturer's Name:** Erehwon Trading Co., Inc. (Importer). Imported from Muso Shokuhin in Japan. **Manufacturer's Address:** 342 Newbury St., Boston, MA 02115.

Date of Introduction: 1970. January.

How Stored: Shelf stable.

New Product–Documentation: Erehwon Trading Company Inc. 1970. Jan. 1. Wholesale-retail catalogue. Products imported from Japan include the following “Condiments,” each made with miso: *Furikake* (“A tangy sesame condiment made from Miso, sesame seeds, soy flour, nori and bonita [sic, bonito] flakes”; 3½ oz.), Sesame miso (“A hearty condiment for use on rice and other grains. Made from miso and unhulled sesame seeds”; 3½ oz). Tekka (“A strong dark condiment; famous for its medicinal qualities. Made from carrots, burdock, lotus, ginger, sesame oil, and miso”; 3½ oz).

Label sent to Lorenz Schaller, perhaps by Chico-San. 1973. Sept. Tekka vegetable condiment. Product of Japan. Distributed by Erehwon Trading Co., Boston and Los Angeles. 3.5 oz. 3.75 by 2.5 inches. Paper. Light green, yellow, and black on white. “Tekka is an iron rich condiment prepared by cooking several root vegetables for one day in sesame oil and miso.” Tekka “has a nutty taste and pleasing flavor. It is delicious as a seasoning on brown rice and rice cream.” Ingredients: Carrots, burdock root, lotus root, miso, sesame oil, ginger.

1489. **Product Name:** Tamari (Soya Sauce), Miso (Soya Bean Paste), Daiya Tofu (Bean Curd).

Manufacturer's Name: Hunzana Foods Limited (Importer-Marketer). Made in Japan.

Manufacturer's Address: 34 Dryden Chambers, 119 Oxford St., London, W.1, England.

Date of Introduction: 1970. January.

New Product–Documentation: Ad (full-page) in *The British Vegetarian*. 1970. Jan/Feb. p. 9. Hunzana imports these health foods from Japan. ½ litre of “Tamari (Soya Sauce)” sells for 6 shillings 9 pence (6/9). 1 lb of “Miso (Soya Bean Paste)” sells for 5/6. 188 gm of “Daiya Tofu (Bean Curd)” sells for 6/6. Hunzana also imports other foods from India, North Ireland, Eire, Germany, and Greece.

1490. Ebine, Hideo; Matsushita, Zenichi; Sasaki, Hirokuni. 1970. Beikoku-san daizu no miso genryô to shite no tekisei hyôka. I. Beisan daizu ni yoru shôkibo miso jôzô shiken (1) [Evaluation of U.S. soybeans as raw materials for making miso. I. Miso manufacturing on a laboratory scale (1)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 25. p. 97-105. Feb. Reprinted from *Miso no Kagaku to Gijutsu* No. 181, p. 19-27 (1969). [6 ref. Jap; eng]

• **Summary:** Among the U.S. varieties tested, Comet, Yelnanda, and Harosoy were promising. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1491. Ebine, Hideo; Matsushita, Z.; Sasaki, H. 1970. Beikoku-san daizu no miso genryô to shite no tekisei hyôka. I. Beisan daizu ni yoru shôkibo miso jôzô shiken (2) [Evaluation of U.S. soybeans as raw materials for making miso. I. Miso manufacturing on a laboratory scale (2)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 25. p. 106-16. Feb. Reprinted from *Miso no Kagaku to Gijutsu* No. 183, p. 18-27 (1969). [1 ref. Jap; eng]

Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan (Norinsho Shokuryo Kenkyujo).

1492. Ebine, Hideo; Matsushita, Z.; Sasaki, H. 1970. Beikoku-san daizu no miso genryô to shite no tekisei hyôka. I. Beisan daizu ni yoru shôkibo miso jôzô shiken (3) [Evaluation of U.S. soybeans as raw materials for making miso. I. Miso manufacturing on a laboratory scale (3)]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 25. p. 117-25. Feb. Reprinted from *Miso no Kagaku to Gijutsu* No. 185, p. 22-29 (1969). [3 ref. Jap; eng]

Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan (Norinsho Shokuryo Kenkyujo).

1493. Ebine, Hideo; Matsushita, Z.; Sasaki, H.; Yanai, S.; Ariyoshi, M.; Machi, M. 1970. Beikoku-san daizu no miso genryô to shite no tekisei hyôka. I. Beisan daizu ni yoru shôkibo miso jôzô shiken (4) [Evaluation of U.S. soybeans as raw materials for making miso. I. Miso manufacturing on a laboratory scale (4)]. *Shokuryo Kenkyujo Kenkyu Hokoku*

(*Report of the Food Research Institute*) No. 25. p. 126-35. Feb. Reprinted from *Miso no Kagaku to Gijutsu* No. 186, p. 21-29 (1969). [4 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan (Norinsho Shokuryo Kenkyujo).

1494. Ebine, Hideo; Ito, Hiroshi. 1970. Hijôsha jinzô mai no seikôji to miso genryô to shite no hyôka [Evaluation of artificial rice by extrusion cooker as a raw material for making miso]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 25. p. 136-39. Feb. Reprinted from *Miso no Kagaku to Gijutsu* No. 170, p. 1-3 (1969). [10 ref. Jap; eng]
Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan (Norinsho Shokuryo Kenkyujo).

1495. Erewhon Trading Co., Inc. 1970. Traditional foods: Importers, processors, distributors. Mail order catalogue. Boston, Massachusetts. 16 p. March 1. [2 ref]
• **Summary:** On the orange cover is the silhouette of three heads of grain on the plant, by a Japanese crest. The company sells the following types of foods: 1. Whole grains: Brown rice (short grain grown by Koda Brothers. "Not strictly organic, but the finest available in the U.S. today"), sweet brown rice (also grown by Koda Bros.), buckwheat groats (Kasha, from Pocono Mts. in Pennsylvania), wheat berries (organically grown in the Golden Valley of North Dakota), millet (organically grown), barley, yellow and white corn (organically grown in Deaf Smith County, Texas), oats, rye (organically grown in Deaf Smith County, Texas). Table of prices for different weights. 2. Fresh stone ground flours. 3. Cereals, made from whole grains and milled in a manner to allow quick cooking, incl. Kokoh (which can be used as a milk substitute or prepared as a cereal for children). 3. Noodles (udon, soba, and shonai fu-wheat gluten cakes). 4. Beans: Azuki beans ("The King of Beans... Organically grown on the island of Hokkaido, Japan), black beans (a sweet black soybean imported from Japan. Organically grown), chickpeas, soybeans ("Organically grown in Pennsylvania. A food high in protein, vitamins and minerals. Should be soaked many hours before cooking. Particularly good if cooked with Kombu"), pinto beans, whole green lentils, red split lentils. Table of prices for different weights.

5. Sea vegetables: Nori (dried laver), kombu, wakame, hiziki, agar-agar. 6. Dried fish and vegetables: Bonita [sic, Bonito] flakes, chirimen iriko, daikon pickle, gourd strips (dried), daikon (dried radish). 6. Order form. 7. Beverages: Kukicha, mu herbal beverage, yannah, lotus root powder, mugicha (barley tea), peppermint tea.

8. Soybean Products (imported from Japan): Soy sauce ("aged for at least 18 months"; 16 oz, 32 oz, ½ gallon, 1 gallon, 4.75 gallon keg). Mugi miso-Soybean puree ("Made by a special enzymatic process, this Miso is aged for 18

months. It is made from soybeans, barley, water and salt. It is ideal for making soups and sauces and blends well with tahini to make a spread for bread." 1 lb, 2 lb, 4 lb, 44 lb keg). Hacho miso-Soybean puree ("A darker, stronger miso than Mugi Miso..."). Moromi ("A thick sauce removed from the bottom of the Soy Sauce kegs after fermentation. Its uses are unlimited in soups & sauces"; 7 oz.). Seitan ("A concentrated protein source made from wheat and soy sauce. When used in soups or sauteed in vegetables, it has a taste much like beef"; 3½ oz.).

9. Condiments: *Furikake*, kuzu arrowroot, tekka, umeboshi, sesame butter, Erewhon sesame tahini, sesame salt, white sea salt, grey sea salt. 10. Oils: Refined corn oil, corn germ oil, sesame oil. 11. Sundries: Sesame seeds, sunflower seeds, pumpkin seeds, popcorn, raisons (Thompsons), dried apricots, wheat germ (raw), apple butter, whole dried chestnuts. 12. Toilet articles: Dentie (tooth powder made from eggplant and salt), Aditi sesame shampoo, Orgene [Orjene] herbal shampoo, Fu-nori (seaweed shampoo), sesame coconut soap, vege oat soap.

13. Kitchen and tableware: Cookbooks: *Zen Cookery*, *Cooking with Grains and Vegetables*, *Cooking Good Food*, *Zen Macrobiotic Cooking*. Tableware: Rice paddles (bamboo), soy sauce dispenser, oil skimmer, bamboo tea strainer, vegetable press, vegetable brush, bamboo chopsticks (Japanese), chopsticks (Chinese), MAC knife (vegetable), vegetable knife, fish knife, grater, suribachi (3 sizes), Corona hand grinding flour mill (\$10.95).

On the inside rear cover is a United Parcel Service rate chart. Address: 342 Newbury Street, Boston, Massachusetts 02115. Phone: 617-262-3420.

1496. Descamps, Hubert. 1970. Tamari et kokkoh: Source d'acides aminés [Tamari and kokkoh: Source of amino acids]. *Spirale (Brussels, Belgium)* No. 36. p. 13-16. May. [1 ref. Fre]

• **Summary:** Prof. Christophe of the laboratory of biochemistry and nutrition on the faculty of medicine of the U.L.B. has done an analysis of Kokkoh (grain coffee) and tamari. The composition of 8 amino acids is given for each product.

"Miso, another source of vegetable proteins, strongly resembles tamari, except that the dry extract is superior. Miso contains about 30-40% moisture. Thus it contains about 3 times the concentration of amino acids and other nutrients found in tamari. It is also clear that one cannot consume large quantities of miso. It is interesting to note that miso is very useful for making soups."

Note: This magazine began publication in 1964.

1497. Gray, William D. 1970. The use of fungi as food and in food processing. *CRC Critical Reviews in Food Technology* 1(2):225-329. May. (Chemical Rubber Co. Press, Cleveland, Ohio). [348* ref]

• **Summary:** The section titled “Oriental fungus-processed foods (p. 263)” discusses: Broad differences between fermentation processes in the Occident and Orient, miso, shoyu, Hamanatto, tempeh, ang-khak, ontjom, sufu, meitauza, ketjap, katsuobushi, and other fungus-fermented foods: Chee-fan (a type of sufu), fermented minchin (wheat gluten), fermented soybean prepared from black soybeans in China (soy nuggets), tao-cho, tao-si, and taotjo (the last 3 foods made from soybeans). Address: Dep. of Botany, Southern Illinois Univ., Carbondale, Illinois.

1498. Erehwon Trading Co., Inc. 1970. Traditional foods: Importers, processors, distributors. Wholesale catalogue addition. Boston, Massachusetts. 5 p. July 1.

• **Summary:** On the cover is the silhouette of three heads of grain on the plant, by a Japanese crest. “As of July 1st., we will be set-up in our new warehouse... All orders that are to be picked-up, will be from 33 Farnsworth Street, South Boston, Mass. The new phone number for wholesale information and offices is (617-542-1358). Please continue to direct all correspondence and payments to 342 Newbury Street, Boston, Massachusetts 02115.”

New products include: Soybeans in 100 lb (\$26.00), 50 lb, 25 lb, 10 lb, and 1 lb quantities. Kome Miso (Made with rice. It is younger and contains less salt than other Miso’s. Used more as a delicacy; 44 lb (\$24.50), 2 lb, 1 lb). Koji rice, imported from Japan, will be available soon. Address: 342 Newbury Street, Boston, Massachusetts 02115.

1499. **Product Name:** Kome Miso–Made with Rice.
Manufacturer’s Name: Erehwon Trading Co., Inc.
Manufacturer’s Address: 33 Farnsworth St., Boston, MA 02110. Phone: (617) 542-1358.
Date of Introduction: 1970. July.
Wt/Vol., Packaging, Price: 44 lb, 2 lb, or 1 lb.
New Product–Documentation: Erehwon Trading Company Inc. 1970. July. Wholesale-retail catalogue. “New imports from Japan... It is younger and contains less salt than other Miso’s. Used more as a delicacy. 44 lb for \$24.50, 2 lb for \$1.49, 1 lb for \$0.85.”

1500. *Los Angeles Times*. 1970. Mastering the menu: Learn how to order your Kaffee mit Schlagobers. Oct. 2. p. I2.

• **Summary:** For each of 15 countries where Americans travel, gives a list of words that are useful when ordering in a restaurant. Under Japan: “Kabayaki: Broiled eels. Miso: Bean paste [soy]. Natto: Steamed and fermented [soy] bean. Sashimi: Raw fish dish... Shoyu: Soy sauce. Soba: Buckwheat noodles. Sukiyaki: A quick-cooked meat stew [with tofu and shoyu]. Sushi: Flavored rice and raw fish [sic, many kinds without raw fish]. Tempura: Deep-fried shrimp, fish and vegetables. Tofu: Bean curd. Unagi: Eel.”

Note: This same article appeared under the title “Are menus a puzzle? Master a few of those foreign food

phrases” in the Oct. 6 issue (p. F16) of this newspaper.

1501. *Time*. 1970. The kosher of the counterculture. 96:59-60, 63. Nov. 16.

• **Summary:** “‘Tell me what you eat and I will tell you what you are,’ said Jean Anthelme Brillat-Savarin, the 18th century French gastronome. This aphorism is especially true today.” The youth of Woodstock Nation, with almost religious zeal, “are becoming vegetarians. They are also in the vanguard of the flourishing organic-food movement, insisting on produce grown without chemical fertilizers or pesticides.

“Diet is very central to the revolution,” says the leader of a north California commune. Why the new vegetarian trend? (1) It’s inexpensive; (2) The eco-activists are concerned about the amount of DDT and other chemicals in meat; (3) There is the vegetarian influence of East Asian religions such as Buddhism, Yoga, and Hinduism; (4) The Macrobiotic diet is vegetarian except that it allows fish and seafoods, but it discourages use of dairy products. There is a lengthy, critical discussion of macrobiotics, George Ohsawa (“who wrote dozens of abstruse books on ancient Oriental diet and medicine and was the principal proselytizer for macrobiotics in Europe and the U.S.”), and Beth Ann Simon (“Macrobiotics can be dangerous. The diet became notorious 5 years ago when a 24-year-old Greenwich Village housewife named Beth Ann Simon died after losing 50 lbs.” on Macrobiotic Regimen No. 7); (5) Diet and yoga have become a substitute for drugs for many people. They lead to a more real and spiritual consciousness. “The young are beginning to realize that drugs aren’t real. They thought it was a shortcut to the spiritual.”

“Anthropologist Claude Lévi-Strauss has shown that a society’s cuisine is a language into which it unconsciously translates its structure. Thus frozen foods, packaged foods, TV dinners, fast-food franchises, preservatives and additives all stem from a culture that made pragmatism, step saving and time saving virtues in themselves. Because there are different values and plenty of free time in the new culture, gardening (organically), grinding wheat, baking bread, preparing yogurt and making a quiet ceremony of cooking and eating are all parts of the scene... For the more earnest of the cultists, the kitchen has become a holy place, as it is to the Hindus and the Buddhists.”

The new diets are filtering to the suburbs via the teenagers. Rows of unfamiliar foods, such as brown rice, miso, aduki, and gomasio [sesame salt], are appearing in middle-class cupboards.

1502. *Soybean Digest*. 1970. A Southeast Asia soy food firm. [Yeo Hiap Seng Ltd.]. Nov. p. 3.

• **Summary:** “A company that started as a family business making soybean products is today one of the largest food and beverage concerns in Southeast Asia. Yeo Hiap Seng

Ltd. owns a number of manufacturing plants in Singapore and Malaysia and makes soybean products and also soft drinks and canned foods.

“Yeo Hiap Seng Ltd. started off using soybeans as a base for all its products. It made soy sauce, soybean paste, and other products that are basic necessities for Chinese food...”

“In 1950, Yeo Hiap Seng Ltd. decided to undertake the processing of soy milk on a commercial scale. The firm successfully launched the first soy milk in bottles in 1952. This is marketed as a food beverage known as ‘Beanvit’ and retailed at the same price as other soft drinks...”

In 1968 the company successfully introduced soymilk in a modern one-way container. “This form of packaging, which has been widely used for milk, is the tetrahedron-shape kraft paper lined with polyethylene-coated aluminum foil. The product is sterilized before filling.

“The soy milk is heated to 142°C and held for 4 seconds, cooled instantly to the original temperature, then poured into the containers. This method of packaging under sterile conditions will enable the product to be kept for about 8 months without refrigeration. The product is much better in both appearance and taste than with the normal sterilization at 115°C for 15 minutes. The container can be discarded after use.

“Yeo Hiap Seng Ltd. has recently introduced an improved soy milk, ‘Vitabean.’ Packed the same way, Vitabean is enriched with vitamins A, B1, B2, B6, C, D3 nicotinamide and pantothenic acid sufficient to provide half the normal daily vitamin requirements for adults. It has been found there are no great losses of heat-sensitive vitamins processed with this UHT [ultrahigh temperature] method.

“The company says it is looking forward to establishing Vitabean plants in other parts of the world.” A photo shows a machine packaging Beanvit and Vitabean, with a woman standing nearby.

1503. Crane, Paul S.; Rhee, S.U.; Seel, D.J. 1970. Experience with 1,079 cases of cancer of the stomach seen in Korea from 1962 to 1968. *American J. of Surgery* 120(6):747-51. Dec. [14 ref]

• **Summary:** This case-control study shows a very high incidence of stomach cancer when compared with other forms of cancer seen in a rural Korean mission hospital. Consumption of miso soup or miso (“soya paste” [doenjang]) was associated with increased risk of stomach cancer. “The fact that *Aspergillus flavus* is found in soya bean cakes raises the possibility that aflatoxins produced by this mold which grows on the soya cakes (from which soya bean paste is made) may be a possible etiologic factor in the high incidence of stomach cancer seen in 1,079 patients with stomach cancer in a 130 bed hospital in the seven year period from 1962 through 1968 in Southwest Korea.” Soya sauce intake was also studied. Address: 1. Nashville, Tennessee; 2-3. Chonju, Korea.

1504. Wang, H.L.; Hesselstine, C.W. 1970. Oriental fermented foods. Paper presented at Part I, Seminar on Protein Food Promotion. 5 p. Typed manuscript. Held Nov. 22 to Dec. 1, 1970 at Inst. of Food Research and Product Development, Kasetsart Univ., Bangkok, Thailand. [13 ref]

• **Summary:** Contents: Introduction. Miso. Hamanatto. Sufu. Natto. Tempeh. Nutritional value of fermented foods. Absence of aflatoxin in fermented food products.

A note on page 1 of this manuscript states: “To be published in Part I of Seminar on Protein Food Promotion, November 22-December 1, 1970, Institute of Food Research and Product Development, Bangkok, Thailand.” This was an invited paper. Address: NRRL, Peoria, Illinois.

1505. Ebine, Hideo; Miyairi, M. 1970. [Studies on enriched miso: (Part 8) Trial to enrich miso with iron]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 196. p. 28-. [Jap]*

Address: National Food Research Inst., Tokyo.

1506. Ito, Hideo; Ebine, H. 1970. Miso no kôki seibun no kenkyû. I. Heddo gasu ni yoru kenshitsu [Studies on the flavor components of miso. I. Detection of flavor in the head space]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 191. p. 22-. [12 ref. Jap; eng]*

Address: National Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1507. Ito, H.; Ebine, H. 1970. Miso no kôki seibun no kenkyû. II. Fukureta miso no kihatsusei seibun [Studies on the flavor components of miso. II. Volatile substances in swollen miso packages]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 191. p. 25-. [5 ref. Jap; eng]*

Address: National Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1508. Ito, H.; Ebine, H. 1970. Miso no kôki seibun no kenkyû. IV. Kaku shu miso no kihatsusei kôki seibun [Studies on the flavor components of miso. IV. Flavor substances in different varieties of commercial miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 198. p. 19-. [5 ref. Jap; eng]*

Address: National Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1509. Ito, H.; Ebine, H. 1970. Miso no kôki seibun no kenkyû. III. Arukoru rui to saikuramin san no dôtei hôhō [Studies on the flavor components of miso. III. Detection of alcohols and cyclamic acid as nitrite ester]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 194. p. 14-. [4 ref. Jap; eng]*

Address: National Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1510. Shim, M.J. 1970. [Analysis of aflatoxins in Korean fermented foods]. *Journal of the College of Home Economics, Yonsei University* 3:32. [Kor]*

1511. Abehsera, Michel. 1970. *Cooking for life*. Swan House, P.O. Box 638, Binghamton, NY 13902. xiv + 364 p. First Avon Flare Books printing, March 1972. Index. 21cm.
 • **Summary:** Contains many imaginative and joyous macrobiotic recipes. The author uses the term “black beans” and from his definition on page 18 it seems that he is referring to black soybeans: “Black Beans, twin brothers of the red aduki in size, are sold in Chinese, Japanese and natural-food stores. They are the milk and honey of the bean family, and their flavor and texture impart a delightful sweetness and richness to any soup or vegetable dish.” No definition is given of soybeans. In the section titled “Condiments” (p. 20-21), the author defines soya sauce, miso, seitan, salted plums, tofu, kuzu, etc. “Tofu is another name for soya-bean curd. In Chinatown, you’ll see it in wooden barrels. It looks like Feta Greek Cheese and some people would swear it tastes like chicken. It is excellent served with sauteed vegetables, sauces, fried or cooked in Miso Soup.

“Seitan: Your guests will almost certainly mistake this for meat. Teeth find it pleasant to chew. A combination of wheat gluten, wheat soya beans [sic], water and salt, it comes in handy when mixed with vegetables, sauces and soups.” Note 1. No recipe for making or using seitan appears in this book.

Soy-related recipes include: *Cooking beans in a pressure-cooker* (p. 66; “Do not pressure cook black beans. Their skins may come off and clog the pressure cooker spout. It is quite dangerous!”). *Cooking beans in a pot* (incl. soya beans, p. 67). *Black-bean stew* (with miso, p. 70). *Soja jardiniere* (with whole soya beans and miso).

In the chapter titled “Soups,” the author tells the story of how the famous Japanese physician, Dr. Tatsuichiro Akizuki, used miso to strengthen his constitution and to survive the atomic bomb dropped on Nagasaki on 9 Aug. 1945. Under “Minerals” in that chapter he discusses other virtues possessed by miso, then gives a recipe for Miso soup (p. 86).

Radishes sauteed in miso (p. 114). *Sandwich au gratin* (with miso spread, p. 114). *Macrobiotic marbles* (with miso, p. 155). *Claudia’s pizza* (with miso, p. 158). *Salade au cresson* (with miso, p. 169). *Nato* [sic, Natto] (Japanese salad with natto, p. 171; Note 2. The author describes “Nato” as “sour soy-beans, bought in a Japanese store”). *Miso sauce* (p. 178). *Miso spread* (with tahini, p. 187). *Oat-miso spread* (p. 188). *Scallion spread* (with miso, p. 188). *Miso pâté* (p. 189). *Komoku* (with tofu, deep-fried and cut into strips, p. 212). *O’Sushi* (with tofu, p. 217). *Kasha à l’Orientale* (with tofu, p. 220). *Bi-Cuan* (Vietnamese recipe

with fried tofu, p. 226). *Kagetsu ice cream* (with fine soya powder [perhaps Jolly Joan from Ener-G foods in Seattle], p. 334; “Kagetsu is a beautiful restaurant in Seattle”). *Yellow pompidou* (with soya bean powder, p. 336).

“Ten years ago I was a sick man, struggling to stay alive and to finish a novel. I suspected I might fail in both matters and the doctors of Paris agreed. They abandoned me as a hopeless case. It was then that I discovered a way of life called Macrobiotics. After a year of eating grains and vegetables, my health restored, I ventured to New York to discover America and finish my novel.”

Note 3. *Webster’s Dictionary* (1985) defines feta, a word first used in English in 1940, as “a white semisoft Greek cheese made from sheep’s or goat’s milk and cured in brine.” Address: New York.

1512. Binding, George Joseph. 1970. *About soya beans: Wonder source of protein and energy*. London: Thorsons Publishers Ltd. 64 p. No index. 18 cm. About series, no. 35.
 • **Summary:** Contents: 1. Beans in general. 2. History of the soya bean. 3. Content of soya beans. 4. About lecithin—vital for retaining youth. 5. The soya bean in the Far East: La Choy Products, cooking in China, soya sauce, bean curd or tofu [sic, tofu], bean sprouts, soya bean milk, candied beans, Japan, natto, miso, Japanese soya sauce. 6. American influence on the soya bean. 7. Industrial uses in America. 8. The soya bean and world food shortage. 9. Soya bean recipes.

On page 10 we read: “For over 5,000 years this tiny seed has been the staple food of certain parts of the East, including North China, Japan, Korea, and some areas of India. The ancient Yogis, who were among the world’s first vegetarians, placed great faith in the soya bean as a supplement to their meatless diet.” Note: Soyfoods Center has been unable (Aug. 2004) to find any documentation for the statement that the ancient yogis consumed soya beans. The earliest date we have seen (Aug. 2004) for the soybean growing in India is 1798 (Roxburgh 1832). The earliest document we have seen concerning the soybean in India is by Beckmann (1798). The earliest document seen (Aug. 2004) for soy products in India (soy sauce) is by Locke (1679). Address: England.

1513. Bock, Felicia Gressitt. trans. 1970. *Engi-shiki: Procedures of the Engi era*. Books I-V. Tokyo: Sophia University. xi + 216 p. Index. 27 cm. [196* ref. Eng]
 • **Summary:** This is volume 1 of a two-volume series. The second volume (ix + 190 p.), published in 1972, contains Books V-IX. These “Procedures of the Engi era (A.D. 901-922) are a great body of regulations designed to supplement the administrative codes which were drawn up in the early eighth century. Because of their wide scope and the minute details included, they are an invaluable source of

information about Japan in the Nara and early Heian periods—eighth, ninth, and early tenth centuries.”

“At first glance the *Engi-shiki* appear to be huge aggregate lists, enumerations, specifications, registers, and statistics. Such they are, but in relation to the department of government under which they fall, they provide many essential regulations for carrying out day-to-day details of civil and religious administration” (Preface, p. v).

The contents of the five books translated here are as follows: Book one: Festivals of the four seasons (Part I). Festivals of the second month, festivals of the fourth month, festivals of the sixth month (repeated in the twelfth month). Book two: Festivals of the four seasons (Part II). Festivals of the ninth month, festivals of the eleventh month, festivals of the twelfth month. Book three: Extraordinary festivals. Book four: The Shrine of the Great Deity in Ise. Book five: Bureau of the Consecrated Imperial Princess. The back matter includes: A map (p. 186) showing the Provinces and Circuits at the time of the *Engi-shiki* (circuits—from east to west: Tokai-do, Tosan-do/Tozan-do, Hokuriku-do, Nankai-do, San’yo-do, San’in-do/Sanin-do, Saikai-do), a table of ancient Japanese measurements, eight appendixes, a bibliography, and a glossary and key.

In the many long list of ritual objects, two types of sea vegetables (wakame and arame) appear very frequently (see p. 61, footnote 161). Other common objects are hemp and bark cloth (primeval clothing materials), salt, sake, rice, abalone, sea-bream, bonito, and silk.

In Book Five, included in the list of “Monthly Requirements” (p. 163) are: 2 *kin* 13 *ryō* each of laver and codium, 11 *kin* 4 *ryō* each of wakame and gelidium,... 6 *shō* of fermented soybeans,... 2 *shō* of fermented bean paste, 1 to 5 *shō* of barley sugar, 3 to each of glutinous rice, soybeans, red beans [azuki], wheat, sorghum, sesame seeds...”

In Book Five, included in the list of things “Required for the Three Occasions in the First Month” after New Year (p. 163) are “1 *kin* each of laver [nori] and wakame, 3 *shō* of salt, 1 *shō* 5 *gō* each of pickles, bean paste [kuki, miso] and vinegar, 6 to of sake, 9 *shō* of glutinous rice, 3 *shō* each of soybeans, red beans [azuki], millet and sorghum, 6 *shō* each of wheat, sesame, and raw chestnuts...”

In Book Five, in the List of Pharmacopoeia required (p. 178+) is included “1 *gō* 1 *shaku* of fermented bean sauce (p. 179) [kuki, the ancestor of miso; see p. 194], and 6 *koku* each of soybeans and red beans [azuki], 1 *koku* of sesame seed... and 3 *koku* of sesame seed oil... and 1 to of dried sweet arrowroot [kudzu powder, see footnote 591] (p. 182).

1514. Kirkup, James. 1970. *Japan behind the fan*. London: J.M. Dent & Sons Ltd. xii + 228 p. See p. 104. Illust. Index. 23 cm.

• **Summary:** The author traveled to Japan in the late 1960s to study the language and culture. While staying with the

Sato family, he and Mrs. Sato are in the kitchen cooking. He describes the preparations including: “... a red lacquer bowl of rich *miso* soy (bean paste) soup.”

1515. Matsuura, Shinji. 1970. Aflatoxins and fermented foods in Japan. *JARQ (Japan Agricultural Research Quarterly)* 5(1):46-51. [6 ref. Eng]*

• **Summary:** No aflatoxins were detected in any samples of miso or shoyu examined. However, aflatoxin-like compounds were detected in about 30% of the koji molds examined, but these compounds differed from aflatoxins in their ultraviolet absorption spectra. Address: Chief, Lab. of Fermentation Technology, Fermentation Div., National Food Research Institute, Tokyo.

1516. *Shokuhin daijiten* [Great Japanese encyclopedia of foods]. 1970. Tokyo. [Jap]*

1517. Trager, James. 1970. *The enriched, fortified, concentrated, country-fresh, lip-smacking, finger-licking, international, unexpurgated foodbook*. New York, NY: Grossman Publishers. xv + 579 p. Illust. Index. 24 cm. [350+* ref]

• **Summary:** This hefty volume is packed with information about a multitude of interesting, little known, or bizarre subjects related to food. It is divided into 11 major chapters, each of which contains many mini-chapters, often with witty or enticing (but often un-descriptive) titles such as “mushrooms take savvy” or “Farmer Jefferson.” The extensive index is very useful, containing entries for such things as Accent/MSG (p. 445-48), prehistoric agriculture and food (p. 3-11), meat analogs and Bac*Os (p. 450-51, 457, 501), Archer Daniels Midland (p. 450), bean curd (p. 333, 362), Battle Creek Sanitarium (p. 460), Kellogg (p. 384, 460-61), miso soup (p. 362), soybeans (p. 21, 262, 382, 450-51, 518), soy protein (p. 450), vegetarianism and vegetarians (p. 3, 324, 343, 457-59).

In Chapter 10, titled “Nuts in the Fruitcake” (p. 455-86), the author takes the opportunity to make fun of anything he discusses related to health/natural foods or vegetarianism. To him, it all smacks of food faddism and extremists. There are sections about vegetarians past and present (“there are no convincing nutritional justifications for vegetarianism”), Sylvester Graham (“One of America’s first home-grown food faddists”), Horace Fletcher, Dr. William Howard Hay and acidosis, Gayelord Hauser (“Perhaps the most prominent diet and health mythologist in recent years”), organic foods baloney (“DDT has not yet been shown to have harmful effects for humans”), Carlton Fredericks and Adolphus Hohensee, Tiger’s Milk, aphrodisiac foods, and food and astrology. Address: New York.

1518. Wiener Bordow, Joan (Sita). 1970. *Victory through vegetables: With a section of recipes from the macrobiotic*

diet by Barbara Thralls. New York, NY, Chicago, Illinois, and San Francisco, California: Holt, Rinehart and Winston. ix + 163 p. 22 cm.

• **Summary:** A vegetarian cookbook. The author, whose name on the title page is given as Joan Wiener, was born in 1944. Soy-related recipes include: Soybean milk and soy chaff [Okara] (p. 15). Bean curd and instant bean curd (homemade, p. 15-16). Cream of rice and soybean soup (p. 31). Soy nut salad (with soy nuts, p. 42). Bean curd sukiyaki (p. 49). Far Eastern dumplings (filled with cooked and mashed soybeans, p. 54). Macao noodles and vegetables (with bean curd and soy sauce, p. 56). Whole wheat role filled with bean curd (p. 59). Soybean tomato mix in stuffed peppers (with soy chaff [okara], p. 71-72). Soybean nuts (fried in butter, with salt, p. 93). Tahini miso spread (p. 136).

1519. Carberry, James F. 1971. Our daily bread—Food faddism spurts as young, old people shift to organic diets: Concern on pesticides cited, but some see deception by quacks claiming cures. Yin and yang ice cream. *Wall Street Journal*. Jan. 21. p. 1, 12.

• **Summary:** Written from Hollywood, California, this article reports that “food faddism has been particularly prevalent lately.” Kahan & Lessin Co., one of the nation’s biggest distributors of organic foods, reports that its sales have doubled to \$12 million a year from \$6 million in 1968. New Age Foods of San Francisco [owned by Fred Rohé] recently opened a branch store in suburban Palo Alto, where it expects to gross \$1 million during its first year.

“Health and organic food advocates say the popularity of such items—as well as the more conventional products grown under ‘natural’ conditions—reflects the growing public concern over pesticide poisoning and the publicity over the dangers of food additives, preservatives, and substitutes like cyclamates.”

Richard Hansen is a sociologist at the University of California at Davis; he is researching the organic food movement.

“New insights into universe: Bruce MacDonald [sic Macdonald], president of Erewhon Trading Co., a Boston and Los Angeles concern that specializes in such exotic foods as hacho miso (a soybean paste), says that organic foods appeal to many dropouts from the drug culture. ‘It’s not just that the body’s malnourished from being on drugs a long time,’ he says. ‘It’s also that organic foods can give a person new insights into the order of the universe.’”

Warren Stagg, the bearded proprietor of H.E.L.P., a popular vegetarian restaurant, believes in the mystical, spiritual value of certain foods. A vegetarian diet can help elevate a person to a higher level of consciousness and bring him into harmony with the order of the universe, he says. Since 75% of H.E.L.P.’s clientele are nonvegetarians, the “restaurant offers some meat substitutes such as ‘beef

stroganoff made from vegetable protein, mushrooms, scallions, bell peppers and sour cream sauce, and a ‘vegeburger’ sandwich that’s also made from vegetable protein. Other dishes on its menu include braised tofu (soybean cake) with brown rice and a salad of cottage cheese, alfalfa sprouts, sunflower seeds, grated carrots, scallions, figs and apricots.”

A group of young people following a macrobiotic diet live in an old Victorian mansion above Hollywood’s Sunset Strip. They are students of the late Georges Ohsawa, a Japanese philosopher who taught about the delicate balance between yin and yang; they eat ascetic meals that include pressure-cooked brown rice and seaweed soup. There have recently been well-publicized cases of the deaths or severe illnesses of a few young people subsisting on only brown rice, the extreme form of the macrobiotic diet.

“Another famous food-faddist helped found a huge business in breakfast cereals. He was John Harvey Kellogg...” according to Ronald Deutsch, author of a history of food fads called “The Nuts Among the Berries.” Deutsch then tells his inaccurate version of how Mr. [sic, Dr.] Kellogg got into the cereal business.

“One man who spends a great deal of time pooh-pooing various nutritional eccentricities is Dr. Fred Stare, chairman of the department of nutrition at Harvard University’s School of Public Health.” Dr. Stare discusses his pet peeves.

Note: Bruce Macdonald recalls (April 1992): “In early 1971 *The Wall Street Journal* ran a front-page feature story on the emerging new natural foods industry. A person from Merrill-Lynch came in and said, ‘We could package this business and raise millions for you.’”

Advest Co. 1972. Dec. “A recent *Wall Street Journal* article named this industry as one of the ten highest growth industries for the 1970s.” Address: Staff Reporter.

1520. Ebine, Hideo; Miyairi, Masao. 1971. Eiyô kyôka miso no kenkyû. VIII. Tetsu no kyôka no kokoromi [Studies on enriched miso. VIII. Trial to enrich miso with iron]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 26. p. 141-44. Feb. Reprinted from *Miso no Kagaku to Gijutsu*. No. 193. p. 28-30 (1970). [2 ref. Jap; eng]

• **Summary:** Commercial miso was found to contain 2.94 ± 0.36 mg per 100 gm at the 5% level of error. This value is very low compared with the 5.95 ± 1.15 mg per 100 gm obtained in 1955. When ferric citrate was used to enrich the iron content of miso, the addition of 1 mg of iron to 100 gm of miso gave satisfactory results, but 2.5 mg of iron gave an unfavorable effect on both the color and flavor. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1521. Eden. 1971. Eden: Organic foods, natural foods (Ad). *East West Journal* 1(2):8.

• **Summary:** “Organic grains and vegetables. Miso and tamari. Oils, teas, and condiments. Nuts and seeds. Fresh and dried fruits. Book and utensils. Traveling accommodations on advance notice.” The Eden logo is 4 sprouts in a double circle.

Note: This is the earliest document seen (June 2001) that advertises or markets miso. Address: 211 South State St., Ann Arbor, Michigan; 347 Ludlow Ave., Cincinnati, Ohio. Phone: 313-769-8444.

1522. Essene. 1971. Essene (Ad). *East West Journal* 1(2):10. Feb.

• **Summary:** “Organic grains–vegetables–beans. Miso–tamari–sea vegetables. Flour stone ground on premises. Distributors of natural and traditional foods. Retail. Wholesale. Mail order. Mon. thru Sat. 9–6:30.”

Note: This is the earliest document seen (March 2006) concerning Essene, an early natural foods and macrobiotic company and distributor in Philadelphia. Address: 320 South St., Philadelphia, Pennsylvania. Phone: WA2-1146.

1523. Ito, Hiroshi; Ebine, Hideo. 1971. Miso no kôki seibun no kenkyû. II. Fukureta miso no kihatsusei seibun [Studies on the flavor components of miso. II. Volatile substances in swollen miso packages]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 26. p. 123-27. Feb. Reprinted from *Miso no Kagaku to Gijutsu*. No. 191. p. 25-29 (1970). [5 ref. Jap; eng]

• **Summary:** “The composition of gases in a polyethylene bag in which miso swelled by the action of microorganisms during storage was examined by gas chromatography. Carbon dioxide was the major component and nitrogen and oxygen were also detected. Acetaldehyde, ethyl formate, ethyl acetate, ethanol, butyl acetate, amyl acetate, *iso*-amyl acetates, *iso*-amyl alcohol and ethyl lactate were detected. The amounts of ethanol and acetaldehyde increased remarkably when the swelling proceeded in the polyethylene bag.” Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1524. Ito, Hiroshi; Ebine, Hideo. 1971. Miso no kôki seibun no kenkyû. I. Heddo gasu ni yoru kenshitsu [Studies on the flavor components of miso. I. Detection of flavor in the head space]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 26. p. 119-22. Feb. Reprinted from *Miso no Kagaku to Gijutsu*. No. 191. p. 22-24 (1970). [12 ref. Jap; eng]

Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1525. Ito, Hiroshi; Ebine, Hideo. 1971. Miso no kôki seibun no kenkyû. IV. Kaku shu miso no kihatsusei kôki seibun [Studies on the flavor components of miso. IV. Flavor substances in different varieties of commercial miso].

Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute) No. 26. p. 135-40. Feb. Reprinted from *Miso no Kagaku to Gijutsu*. No. 198. p. 19-24 (1970). [5 ref. Jap; eng]

Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1526. Marsh, Elisabeth. 1971. Macrobiotique pour les Américains [Macrobiotics for Americans]. *Spirale (Brussels, Belgium)* No. 46. p. 8-11. Feb. [Fre]

• **Summary:** Translated from the English by Josiane Bagno. Contains 8 lines about miso and 4 lines about tamari. *Spirale* is located at Avenue Voltaire 141, 1030 Brussels.

1527. Mother Nature & Sons Ltd. 1971. Natural foods. Organic and macrobiotic foods (Ad). *East West Journal* 1(2):10. Feb.

• **Summary:** “Full line of grains, vegetables, beans, sea vegetables, miso, tamari, umeboshi, fruits, nuts, teas, baked goods. From: Lima [Belgium], Chico San, Infinity, Spiral, Hain, Caldron, and Paradox. Located at: 351 Bleeker Street, New York City, NY 10014. Phone: 212-924-7572.

Note: *East West Journal* is edited by Ron Dobrin [a former New York journalist], published by Order of the Universe Publications, and distributed by Tao Books & Publications, Inc., 303b Newbury St., Boston, MA 02115. Address: 351 Bleeker Street, New York City, NY 10014. Phone: 212-924-7572.

1528. Erhard, Darla. 1971. Nutrition education for the “now” generation. *J. of Nutrition Education* 2(4):135-39. Spring. [41 ref]

• **Summary:** Describes the author’s efforts in Berkeley, California, to provide factual nutritional information to members of various San Francisco Bay Area counterculture groups, including Zen macrobiotics, the One World Family Commune, Krishna Consciousness devotees, and fruitarians.

“Food faddism—which used to be associated with older population groups—coupled with vegetarianism has now become the panacea for some members of the younger generation, often called ‘hippies.’

“The majority of my information on the Zen Macrobiotic diet was derived from classes that I attended taught by a former pupil of George Ohsawa, believed by some to be the originator of Zen Macrobiotics. From these groups, I learned that the widely publicized, all-cereal diet originating from the seven levels of eating (dietary eating pattern with initial allowance of certain percentages of all foods with seven progressions to the ultimate all-cereal diet) was the result of mistranslation and misuse of the Zen Macrobiotic principles by the American public.” The author then gives a fair and balanced description of a macrobiotic diet; miso, soy sauce and tofu are listed as part of a typical

daily macrobiotic menu. Address: 323 Monte Vista Ave., Oakland, California 94611.

1529. Kosuge, Takuo; Zenda, Hiroshi; Tsuji, Kunio; Yamamoto, Takeshi; Narita, Hiroko. 1971. Studies on flavor components of foodstuffs. I. Distribution of tetramethylpyrazine in fermented foodstuffs. *Agricultural and Biological Chemistry* 35(5):693-96. May. [17 ref]

• **Summary:** Tetramethylpyrazine (T.M.P.) was detected in many Japanese fermented foodstuffs, especially miso (29 mcg/kg), natto (22), and soy sauce (4). Moreover, the amount of T.M.P. in miso increased almost tenfold (from 29 to 265 mcg/kg) after storage for 1 year. This fact indicates that T.M.P. may play an important part in the flavor of these fermented foods. Roasted foods, such as coffee, cocoa, and peanuts, are a rich source of alkylpyrazines. Address: Shizuoka College of Pharmacy, Shizuoka, Japan.

1530. Kushi, Aveline. 1971. Recipes from *The Book of Miso*. *East West Journal* 1(7):7.

• **Summary:** Contains a drawing by Aveline Kushi of a family making miso, plus five soup recipes and two miso relish recipes from her forthcoming cookbook.

Note 1. This is the earliest document seen by either Michio or Aveline Kushi.

Note 2. This is the earliest article on soy seen (Aug. 2002) in the *East West Journal*. Address: EWJ, P.O. Box 203, Prudential Center Station, Boston, Massachusetts 02199. \$6.00 for 20 issues.

1531. Ohsawa, George. 1971. *Macrobiotics: An invitation to health and happiness*. Edited and appended by Herman Aihara. Oroville, California: George Ohsawa Macrobiotic Foundation. 95 p. Illust. 21 cm.

• **Summary:** Contents: Introduction. What is happiness? Judgment and health. Seven conditions of health. Foods for health and happiness. How to eat. Macrobiotic external treatment.

Appendixes (by Herman Aihara). A. History of macrobiotics. B. Warning of Diet No. 7. C. How to start macrobiotics. D. Macrobiotic cooking. E. Recipes (Cornellia Aihara). F. Does the macrobiotic diet supply enough protein. G. Vitamins. H. Conclusion: Eight macrobiotic principles, the Unifying Principle, the Order of the Universe.

Soy-related recipes include: Creamed onion-miso soup (p. 41). A table showing the amount of protein in various foods includes soybeans, soy sauce, natto, and miso.

Note: In his book *Learning from Salmon*, Herman Aihara says that this was his first book, published in June 1971. The copyright page says "Copyright 1971," but the National Union Catalog seems to indicate that it was not copyrighted until 1976. The 6th printing was 1984.

1532. Sokolov, Raymond A. 1971. Macrobiotic cooking—Learning the secrets of yin and yang. *New York Times*. July 8. p. 41.

• **Summary:** Cornelia Aihara, from San Francisco, California, is teaching a macrobiotic cooking class to 30 local enthusiasts in downtown Brooklyn. Each "paid \$6 to attend the class, a dinner, and a lecture" by Herman Aihara. In "the mystical world of macrobiotic diet the Aihara family are the equivalent of Pope, President, and Julia Child." Herman is the director of the George Ohsawa Macrobiotic Foundation. Ohsawa, now deceased, "brought the gospel of the grain-centered diet of Zen Buddhism to the United States and Europe.

Recipes are given for Brown rice, Wakame soup with miso, and Ohsawa coffee pudding.

1533. Eden Foods, Inc. 1971. Wholesale pricelist. 211 South State St., Ann Arbor, MI 48108. 2 p. July 26.

• **Summary:** This is the earliest existing Eden Foods catalog seen that is dated. The company was wholesaling the following products: Bulk grains (including some organically grown: Wheat (Deaf Smith), organic [from Texas]; Rye, soft wheat, and open-pollinated corn, organic from Michigan; Brown rice (natural, unsprayed), and sweet brown rice), bulk cereals or packaged cereals (incl. organic cracked wheat, corn flakes, wheat flakes, and rye flakes from Deaf Smith, Texas), bulk flour (all flour is stone ground on order in Ann Arbor, incl. organic soy flour), beans (incl. organic soybeans from Michigan [60 lb], and azuki beans [out of stock until fall]), noodles, oil and nut/seed butters (all unrefined and pressed, incl. soy oil in pint, quart, and 5-gallon sizes), dried fruit.

Soybean products: Tamari soy sauce (pints, quarts, and liters), Hacho Miso (Soy Paste; 1 lb), Mugi Miso (Barley Soy Paste). Note: The Eden logo with 4 sprouts in a circle is shown. Many of these soy products were obtained from Erewhon, and the grains from Arrowhead Mills. The format of the catalog, the product categories, and the product names and spellings are very similar to those used in the Erewhon catalog at this time. Address: Ann Arbor, Michigan. Phone: (313) 769-8444.

1534. Bell, Don. 1971. Ohsawa and the yin and yang of health. *Chicago Tribune*. Aug. 1. p. F23.

• **Summary:** The film "Joe" [1970] has a scene shot in an unusual restaurant in New York City's East Village. The dishes have unusual names like miso soup, hiziki [hijiki], and wakame salad. One man calls it "Jap food," but the waiter explains that it's "food in accordance with the order of the universe"—a definition of macrobiotics. We are what we eat. A respected scientist has stated that each year, 98% of the atoms in our bodies are replaced by new atoms that we take in from the food we eat, the water we drink, and the air we breathe.

Popular foods in the macrobiotic diet include seaweed, tahini (made from sesame seeds, a replacement for butter), Japanese azuki beans, and miso and tamari (protein-rich seasonings).

1535. Daniels, Mary. 1971. A loaf of whole-grain bread, a jug of bancha and thou: "Food for Life" is food that's "in accord with the Universe"—even on Halsted Street. *Chicago Tribune*. Aug. 1. p. F18-F25.

• **Summary:** "The mecca of macrobiotics in the United States today is Boston, and its Mohammed [Muhammad] is a Japanese professor of Oriental studies, Michio Kushi. Kushi is a disciple of Georges Ohsawa, who gave his first lectures in New York's Buddhist Temple in 1959." Ohsawa's followers went in two directions. In Oct. 1961, one group went to [Chico] California under the leadership of Herman Aihara. The other followed Kushi to Boston.

The first macrobiotic study house in the Boston area was established very informally about 7-8 years ago in the Kushi's home in Brookline. Soon thereafter his students founded Tao Books and Erewhon. By word of mouth and by his writings, Michio Kushi has attracted young people from all over the USA, many of them seeking something better than drugs. Soon the demands on his time were so great that Kushi had to give up his classes at Harvard to teach from his home and lecture twice a week on the true path to happiness.

Erewhon is now almost the size of a supermarket; it owns a large warehouse near the Boston docks. Eight large photos show foods sold at Erewhon retail stores. One caption mentions miso.

Part II of this article, titled "Macrobiotics: where it's at in Chicago," is about Tom Swan and his macrobiotic food store "Food for Life." This store, around which the local macrobiotic community revolves, was started in Feb. 1970 at 2356 Seminary by Ron Kotsch, a Harvard student who had worked at the Erewhon store in Boston.

On the shelves are cans and bottles of corn germ oil and sesame oil (both auger pressed, and both with a rich, natural flavor), sesame butter, a variety of seaweeds imported from Japan, buckwheat noodles, "a fermented soy paste rich in energy called miso (dancers down it before a performance), and a natural soy sauce called tamari that makes you realize how much the supermarket stuff cheats you in taste. All of these things are proudly labeled 'no preservatives.'"

Also mentions: John Palumbo, Bill Tara, Loren McCune, The Caldron, Dr. Walter Kempner, Burl Ives, brown rice from Chico San, organic foods, Gloria Swanson, and William Dufty. Includes five macrobiotic recipes: Brown rice with gomasio [gomashio]; leftovers fried and served with tamari (soy) sauce. Seaweed and carrots. Bancha tea. Tempura batter. Raisin muffins.

1536. *SoyaScan Notes*. 1971. Chronology of Laurelbrook in Maryland. 16 March 1992. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1971 Aug. 23—Laurelbrook Foods begins as a macrobiotic natural foods wholesale distributor in Forest Hill, Harford County, Maryland (about 25 miles northeast of Baltimore). The company started as a division of Cycle Parts & Accessories, Inc., a motorcycle parts company that Rod was planning to start in late 1970 shortly before the idea of starting a natural foods distribution company took form. Laurelbrook company never moved from its original location, but they kept a post office box (P.O. Box 47) in nearby Bel Air. Their original price list shows that they carried 11 products, mostly bulk organic grains and beans (including soybeans) purchased from Arrowhead Mills. Erewhon was their other major supplier from the outset. The company was founded by Rod and Margy Coates, the parents of five daughters (including Sally, Judy, Marion [Ronnie], and Dora Coates) and one son (Dan). Dora was Paul Hawken's first wife; they were married in June 1971. Judy was John Deming's first wife; they were married in Aug. 1972. Both Paul and John worked with Erewhon. Rod and Margy decided to call the company Laurelbrook since they lived on Laurelbrook Road in Fallston, Maryland. Rod and Margy first got interested in natural foods in 1967 when their next to oldest daughter, Judy, who had been studying macrobiotics with Michio and Aveline Kushi in Boston, Massachusetts, and had worked for Erewhon, offered to come home and cook for her parents for two weeks and let them try out the diet.

1971 Sept. 30—Laurelbrook is still considered by Rod Coates to be a division of his Cycle Parts & Accessories, Inc.

1973 Dec.—Laurelbrook opens a new, second warehouse in Raleigh, North Carolina (at 330 West Davie St.). Four people start and run the operation.

1974—Laurelbrook, which now employs 24 people, enlarges its warehouse.

1975—Feb.—Laurelbrook publishes a 6-page booklet showing that the company now distributes about 43 different food products—including soy flour, tamari, and miso.

1976 Nov.—One of Laurelbrook's employees is trying to start a labor union. Management vigorously opposes it. Laurelbrook now employs 32 people and has a fleet of 12 trucks that delivers to 350 stores. It is still a family operation, with Rod and Margy Coates, their 3 children, a son-in-law, a niece, and a nephew working at Laurelbrook.

1977—Laurelbrook outgrows its warehouse at 330 West Davie St. in Raleigh, North Carolina, so they move into a larger warehouse facility at 2319 Laurelbrook Street in Raleigh.

1977 Nov.—Laurelbrook has 44 employees. Sales last year were about \$3 million.

1978 June–Laurelbrook is now importing foods from Mitoku in Japan.

1979 May–Rod Coates hires Richard Curry as accountant and general manager.

1980 March 17–At a special meeting of the board of directors, Rod informs the board that he will be retiring in one week, on 23 March 1980, his 65th birthday. He recommends that he be replaced as president by Richard Curry and that his (Rod's) official position be chairman of the board.

1981 March–Things are not going well at Laurelbrook. Rod and Marge feel that Richard is not doing a good job in running the company. Employee morale is down. But Richard blames the problems on Rod, and wants Rod to be less actively involved with Laurelbrook on a daily basis.

1981 March–Dora Hawken is fired from her position in the Laurelbrook office.

1981 July 21–Rod, Margy, and Dan Coates, constituting all the board of directors of Laurelbrook, resign, effective immediately. They are upset with the way Richard Curry is running the company.

1981 Aug.–Richard Curry offers to buy out the Coates' interest in Laurelbrook foods. They accept the offer. Rod and Margy keep ownership of the property and Richard was to pay them rent for using it.

1981 Nov. 21–Over the next 30 days Richard Curry places five large orders with Hain Pure Foods in the amount of \$35,577.

1982 Feb. 15–Laurelbrook Foods files for Chapter 11 bankruptcy protection and does business under Chapter 11 for about 18 months. Richard Curry is president.

1982 Dec. 22–Rod Coates presents a list of items that he alleges Richard Curry sold illegally after the bankruptcy of Laurelbrook, and before the auction of the company's assets. Attached to this are letters between attorneys.

1983 Oct-Dec.–Rod and Margy Coates have to pay off the debt of \$35,577 to Hain—even though they no longer own the company. In Dec. 1983 the last of the equipment in the warehouse was auctioned off.

1990 March 4–Rod Coates dies of Alzheimer's disease. As of early 1992, Judy Coates lives in Ross, California, and Dora lives in Marin, California. Address: 505 Granary Rd., Forest Hill, Maryland 21050.

1537. Murakami, Hideya. 1971. Classification of the koji mold. *J. of General and Applied Microbiology (Tokyo)* 17(4):281-309. Aug. [40 ref. Eng]
Address: Research Inst. of Brewing, Tax Administration Agency of Finance Ministry, Takinogawa 2-6, Kita-ku, Tokyo 114, Japan.

1538. Lappé, Frances Moore. 1971. Diet for a small planet. New York, NY: Ballantine Books. xiv + 301 p. Illust. by

Kathleen Zimmerman & Ralph Iwamoto. Index. 18 cm. [90 ref]

• **Summary:** This one of the most important and influential books written about food, nutrition, and world hunger during the 1970s. Published on 1 Sept. 1971, it introduced the concepts of "protein complementarity" and "eating low on the food chain" to millions of Americans. By April 1973 the book had been reprinted 7 times. The book's roots lie in the University of California at Berkeley, where Ms. Lappé was enrolled in the School of Social Work in 1968. A committed community organizer of welfare recipients, she was frustrated in her inability to find an agenda that would truly end the people's suffering. So she began to study the political economy of food in the Natural Resources library. From this research came a 1-page handout, then a 5-page handout, then a 70-page booklet, and finally this landmark book.

Contents: Acknowledgments. Foreword. Part I: Earth's labor lost. Part II: Bringing protein theory down to earth. Part III: Eating from the earth: Protein theory applied. Part IV: Combining non-meat foods to increase protein values. Appendixes. Notes.

Key quotes: "This book is about PROTEIN—how we as a nation are caught in a pattern that squanders it... I propose that our meat-centered diet is at the very heart of our waste of the earth's productivity" (p. xi). "Fully *one-half* of the harvested agricultural land in the U.S. is planted with feed crops. We feed 78% of all our grain to animals. This is the largest percentage of any country in the world" (p. 5). We feed animals "89% of our corn crop, 98% of our grain sorghum crop, 87% of our oat crop, 64% of our barley crop, as well as 95% of our unexported soybean crop. To make beef or veal, "a cow must be fed 21 pounds of protein [from feed] in order to produce 1 pound of protein from human consumption."

This vegetarian book contains 125 pages of recipes and makes extensive use of soybeans and soyfoods—though mostly in the form of whole dry soybeans or grits (*) or soy flour (+), which are two of the least interesting ways of using soybeans. In the section titled "Getting the most protein for the least calories," subsection 5 on "Legumes" (p. 106) states: "Soybean curd (tofu) has the fewest calories for the amount of usable protein, largely because most of the fat is removed in its processing. Tofu is truly an excellent protein source. Lightly sautéed with a fresh vegetable accompaniment, one could easily eat 7 ounces of tofu and fulfill 25 to 30 percent of a day's need for protein—At the cost of only about 5 to 7 percent of a day's calorie allotment. I've included several tofu dishes among the recipes given later in this book."

Tofu is not mentioned in the index, but under "Soy Curd" we find one recipe titled "Leafy Chinese tofu (Soy curd)" (p. 144). It notes that soy + rice, and soy + sesame are complementary proteins.

The recipes are grouped by complementary combinations. Rice and soy (p. 140-45; combining in the proper proportions gives a 32% increase in usable protein): Crusty soybean casserole*. Stuffed cabbage leaves*. Curry rice*. Leafy Chinese tofu (soy curd). Sukiyaki (with tofu).

Rice and wheat and soy (p. 146-50; 24% increase in usable protein): Hearty vegetable soup (with miso and soy sauce)*. Sweet and pungent vegetable curry*. Mexican grains*. Rice-wheat “kasha”*.

Whole wheat and soy (p. 181-88; 32% increase): “Complementary” pizza+. Savory onion quiche+. Wheat-soy waffles+. Chameleon spice cake+. Wheat-soy pudding+.

Wheat, soy, and sesame (p. 189-94; 42% increase): Sesame crisp crackers+. Sesame dream bars+. Journey cakes+. Orange sesame muffins+. wheat-soy-sesame bread+.

Cornmeal and soy and milk (p. 202-08; 13% increase): My favorite cornbread+. Boston brown bread+. Pineapple-corn muffins+. Corn spice coffee cake+. Cornmeal-soy waffles+. Indian pudding*.

Soy, wheat, rice, and peanuts (p. 220-26; 15% increase): Curried soybeans and peanuts*. Nutty bean tacos*. Soybean croquettes*. Spanish soybeans over mixed grains*+. Deep dish vegetable pie*.

Soy and sesame seeds (or sunflower seeds) and peanuts (p. 227-32; 25% increase): Nutty noodle casserole*. Soy-sesame-peanut spread+ (with roasted soy flour). Peanut-sesame loaf supreme+. Soy-pea sesame snacks*. Bean burgers*.

This was one of the first popular books to show the connection between intensive livestock production and environmental degradation. Part I, titled “Earth’s Labor Lost,” shows how: (1) Animal wastes from huge feedlots cause water pollution (p. 15-16); (2) Growing crops for livestock feed and overgrazing leads to soil erosion, loss of topsoil, and soil depletion (p. 17-18); (3) The increased pressure on our land to grow livestock feeds has led to increased use of pesticides, which kill untargeted species and cause water pollution (p. 26-27). In short, a vegetarian diet “maximizes the earth’s potential to meet man’s nutritional needs and, at the same time, minimizes the disruption of the earth necessary to sustain him. It’s as simple as that” (p. 3).

Also gives a recipe for “Crunchy granola” (p. 251, based on rolled oats, coconut shreds, sesame seeds, and wheat germ).

Note 1. As of Sept. 1991, this book had sold about 4 million copies, and of that 3 million copies in English-language editions.

Note 2. This is the earliest document seen (May 2002) concerning the environmental impact of a vegetarian diet. Address: California.

1539. Spicer, A. 1971. Synthetic proteins for human and animal consumption. *Veterinary Record* 89(18):482-87. Oct. 30.

• **Summary:** Microbial protein can be textured into meat-like strands. “As regards the Eastern world, microfungi are extensively used in the processing of soya beans to make them suitable human food products. Miso and tempeh are but two examples. The average Indonesian eats 154 gm per day of tempeh, thus consuming several grams of *Rhizopus* in his daily diet.” Address: The Lord Rank Research Centre, High Wycombe, Bucks, England.

1540. B.W. [Becky Wood]. 1971. Making miso in America. *East West Journal* 1(14):6.

• **Summary:** Contains a description with photos of how miso is made at Norio and Fujimoto, but without the details necessary to actually make miso on a commercial scale.

Chico-San is developing a domestic miso which it hopes to offer commercially in the near future. Miso expert, Junsei Yamazaki, has tested and developed miso in Chico, California for the last seven years. Mr. Yamazaki has one batch which has been aging for a year. He hopes to market this batch in six months. Chico-San will expand its plant for large-scale production as the miso is perfected.

“We called Erewhon to ask if they had plans for the production of miso and Bill Tara reported that there is a big and rapidly growing market for miso. But, he said, ideally miso should be made in a given area for consumption in that area.” Erewhon will introduce to the domestic market a yeast grain called koji, essential to the production of miso.

There are currently two companies in the continental U.S. which produce miso on a commercial basis. One is located San Francisco and the other in Salt Lake City. Each produces rice miso made from white rice. The Norio Company has been located on the outskirts of San Francisco’s Japan-town, at 1532 Post Street, since the company started in 1919. The company is owned and solely operated by Mr. and Mrs. Minoru Arikawa and son.

Fujimoto and Company, which originated in Oakland, California, moved to 302 South Fourth West, Salt Lake City, Utah, in 1945. Mr. Sekino heads the three-man plant. He speaks little English. Address: EWJ, P.O. Box 203, Prudential Center Station, Boston, Massachusetts 02199. \$6.00 for 20 issues.

1541. Erewhon Trading Co., Inc. 1971. Natural and organic foods. Price list. Boston, Massachusetts. 4 p. Effective Thanksgiving day, Nov. 1971.

• **Summary:** This price list has no cover. Products include: Grains (incl. organically grown brown rice [short, medium, or long grain; Note: The short grain was probably grown by the Lundberg Brothers of Wehah Farms, Richvale, California], Ted Whitmer [in Bloomfield, Montana] organically grown wheat, hard red spring and hard amber

durum, and Deaf Smith [Hereford, Texas] organically grown wheat [hard red winter], rye, and corn). Cereals. Stoneground flours (incl. Soybean flour, full fat, organic Deaf Smith; Sweet brown rice flour). Beans (incl. azuki beans, black beans [Japanese, probably black soybeans], soybeans [organic]). Seeds. Tamari & miso: Tamari soy sauce (pints, quarts, half gallon, gallon, 4.7 gallon can, 4.7 gallon wooden keg). Hacho miso (soy paste, 1 lb or 44 lb keg). Mugi miso (barley-soy paste, 1 lb, 2 lb, 44 lb keg). Kome miso (rice-soy paste, 1 lb, 2 lb, 44 lb keg).

Sea vegetables: agar agar (kanten), dulse, hiziki, kombu, nori (dried laver), wakame, wakame root, wakame (thin sheet). Tea: Lotus root tea. Dandelio herbal coffee. Mu herbal beverage. Kukicha twig tea.

Pasta. Crackers (Chico-San Rice Cakes, organic-salted, unsalted, with buckwheat, or with millet). Snacks (incl. Corn munchies [organic corn chips with soy sauce], Chico-San "Yinnies" organic rice candy [made in Chico, California]). Hopi seeds: Sunflower seeds, pumpkin seeds, almonds, cashews, or soybeans, each dry roasted with tamari. Dried fruits. Virgin oils (incl. Soybean oil, pressed and unrefined in pints, quarts, half gallon, gallon, and 5-gallon can). Nut butters. Condiments (incl. sesame salt, and Tekka [vegetable condiment]). Unusual foods: Umeboshi (plums pickled in brine) and Kuzu arrowroot. For cleanliness [body care products]: Sesame lotion [organic and biodegradable], Sesame shampoo, Orjene shampoo, Peppermint Castile soap, Toothpowder, charred eggplant and sea salt [Dentie in bag or jar], Clearlake all purpose cleaner, biodegradable. For cooking (utensils, incl. 2 sizes of "soy dispenser," suribachi with pestle, Save A Tree canvas shopping bag). Flyers: The Organic Merchants NOT List. The Sugar Story. The Oil Story. The Macrobiotic Way.

On the last page is a note from Paul Hawken, with his signature, thanking customers for their orders. Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: (617) 542-1358.

1542. Teegarden, Iona. 1971. Freedom through cooking: The macrobiotic way. Order of the Universe Publications, P.O. Box 203, Prudential Center Station, Boston, MA 02199. 128 p. Illust. by Mary Purcell.

• **Summary:** Soy beans: These are the most yin of the commonly eaten beans, and it's suggested that they be used only occasionally... It's good to add a yang vegetable, sauteed, such as carrot or, better still, burdock or jinenjo. Soy beans are frequently utilized in the form of miso, which is delightful in soups (see p. 43). In this form we derive all the nutritional benefits of soy beans, and yet the preparation is yang and very energy-giving (p. 40).

Discusses miso soup and also contains a recipe for Miso-Tahini Spread (for sandwiches).

Ad in East West Journal. 1971, Vol. 1, No. 16. p. 8. It will be published on Nov. 15, 1971. Price: \$2.15. Written

through Iona Teegarden.

Miso "soup is excellent for people who are trying to regain mental and physical health. Miso (soybean puree aged a minimum of three years with salt) is an excellent source of high-quality protein; it also contains many minerals and is a great aid in digestion because of the enzymes it contains. In my own home, I usually serve it once a day, in the morning. It's a marvellous replacement for coffee, and gives greater and more lasting energy!"

1543. Clark, Marion; Sinick, Heidi. 1971. Try it! *Washington Post, Times Herald*. Dec. 12. p. 314.

• **Summary:** The section titled "Organic food feasts" states that "Mother Nature on the Run will cater organic food feasts for any occasion." This catering service was recently formed by six young health-food enthusiasts who love to cook and who believe that happy food makes happy people. At a recent church dinner, the group served a meal that included "brown rice with miso, tamari and natural peanut-butter sauce."

1544. Chico-San Inc. 1971. Portfolio. Chico, California. 6 sheets. Dec. 1971. 28 cm.

• **Summary:** Includes the following (all printed back-to-back with dark brown ink on golden yellow paper with a new complex spiral logo): (1) Form letter from J. Robert Kennedy to Lorenz A. Schaller, Pasadena, California. (2) "Rice cakes is our bag." Three varieties, made from brown rice, grown organically by Wehah Farms. (3) "How Chico-San guarantees Oriental-type, organically grown brown rice," article reprinted from *Health Food Business* magazine. (4-5) Chico food news 1, about Lima soysauce and sweet brown rice, with recipes. Ingredients include soybean flour and Yinnies Grain Syrup ("made from barley and brown rice is a new product from Chico-San"). (6-7) Chico food news 2, about rice chips, corn chips, Yinnies, mochi, with recipes. (8-9) Chico food news 3, about wild American ginseng and Chico-San rice vinegar. (10-11) Chico food news 6, about sea vegetables: Hijiki, nori, wakame, kombu, kanten. Address: 1262 Humboldt Ave., Chico, California 95926. Phone: (916) 343-6770.

1545. Chico-San Inc. 1971. Products: A catalog of macrobiotic foods. Chico, California. 8 p. Undated. 22 cm.

• **Summary:** The cover is with dark brown ink on golden yellow paper with a new complex circular spiral logo neat the top and three sheaves of grain across the bottom. The term OEI, applied to some products, means "Our Exclusive Import." Address: Chico, California. Phone: (916) 343-6770.

1546. Joyous Revival. 1971. Natural Foods (Ad). *East West Journal* 1(20):20.

• **Summary:** The company sells: Miso. Nuts. Seeds. Beans. Grains. Tamari. Fresh ground flours.

Note: Michael Potter, later head of Eden Foods, worked with this company in the early 1970s, until Dec. 1970. He was not a founder of the company, but he eventually rose to become a partner. Address: 1810 S. Woodward Ave., Birmingham, Michigan 48011. Phone: 313-644-9756.

1547. Spiral Foods Inc. 1971. Price list of macrobiotic foods. Chico, California. 2 p. Undated. 35 x 25 cm.

• **Summary:** This single-sheet catalog and price list, printed front and back with reddish-orange ink on green paper, contains 8 panels and is undated. Yet it was sent by Chico-San in a portfolio of sell sheets with a cover letter dated 8 Dec. 1971—from which we can estimate the date. It is also larger Spiral Foods catalogs issue after the disastrous 1972 fire that destroyed the company's plant. Under the name of each food is given a brief description. It includes the following foods:

Condiments: Tekka ("A traditional flavoring prepared from carrot, burdock, ginger, lotus root, Soybean Puree {Miso}, and sesame oil"), seitan ("A meat substitute made from vegetable protein of wheat gluten and tamari soy sauce"), salt plums, kuzu arrowroot, sesame salt, sesame butter, sesame oil (from organically grown seeds), Lima sesame oil (imported), crude sea salt ("Unrefined, unprocessed, trace sea minerals retained"), white unrefined sea salt, Mishio (Lima, with kombu), moromi ("Mash of soy sauce before pressing. A pungent flavor"), furikake ("A seasoning made from Miso, sesame seed, nori, bonita [sic, bonito] powder, whole brown rice and kombu" {kelp}), Goma Muso ("A seasoning prepared from traditional Miso and whole sesame seeds"), bainiku ekisu (concentrate of green [ume] plums), sesame seeds. Dried fish. Cosmetics. Beverages: Yano (grain beverage), Whole grain cereals. Whole grain noodles. Beans: Azuki red (Dainagon, or Korean), black [soy] beans. Sea vegetables. 100% whole grain brown rice. Sweet rice—mochi gome. Rice cakes. Lima soy sauce ("A traditional soy sauce of exceptional quality"), tamari ("The traditional soysauce, fermented naturally and aged 18 months. Prepared from soybean, wheat, salt and water"). Soybean puree (Miso) ("Made from the cultivation of a special enzyme and aged 18 months. The soybean puree is ideal mixed with sesame butter and used as a spread or can be added to soups and sauces"). Utensils.

Note: This is the earliest English-language document seen (Dec. 2006) that uses the Japanese-language term "bainiku ekisu" (literally "plum flesh extract") to refer to a commercial extract of ume plums. Address: 1017 Willow Street, Chico, California 95926.

1548. Ito, Hiroshi; Ebine, Hideo. 1971. Miso no kôki seibun no kenkyû. III. Arukooru rui to saikuramin san no dôtei hôhō [Studies on the flavor components of miso. III.

Detection of alcohols and cyclamic acid as nitrite ester]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 26. p. 128-34. Feb. Reprinted from *Miso no Kagaku to Gijutsu*. No. 194. p. 14-20 (1970). [4 ref. Jap; eng]

Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1549. Hesseltine, C.W. 1971. Problems of supply of inocula for fermentations, especially solid state fermentations. In: G.C. Ainsworth and J. Webster, eds. 1971. *First International Mycological Congress, Abstracts*. Unwin Brothers Ltd., The Gresham Press, Old Woking, Surrey England. 113 p. See p. 44-45. Congress held Sept. 1971 at Exeter, England.

Address: NRRL, Peoria, Illinois.

1550. Joo, Hyune Kyu. 1971. [Studies on the manufacturing of chungkukjang]. *Hanguk Sikp'um Kwahakhoe Chi (Korean J. of Food Science and Technology)* 3(1):64-67. [19 ref. Kor; eng]

• **Summary:** Discusses *Bacillus subtilis*. Address: Dep. of Agricultural Chemistry, Agricultural College, Kon Kuk Univ.

1551. Kim, Sang Jae. 1971. [Taxonomical studies of Korean *Aspergilli*]. *Misaengmul Hakhoe Chi (Korean J. of Microbiology)* 9(1):1-26. [39 ref. Kor; eng]

Address: Dep. of Biology, Graduate School, Kon Kuk Univ., South Korea.

1552. Aihara, Cornelia. 1971. Macrobiotic child care. *Macroguide* No. 8. 41 p. (George Ohsawa Macrobiotic Foundation, 1544 Oak St., Oroville, CA 95965).

• **Summary:** Contents: What is macrobiotic? About the author (autobiographical). Two pages of photos of the Ohsawa and Aihara families. Macrobiotic child care. First solid foods for baby. Prenatal and postnatal care. How to be a beautiful and loved wife. Recipes for baby's solid food. What is the Foundation? [GOMF].

Pages 35-41 contain "Recipes for baby's solid foods." These include: Mochi made with rice flour. Miso zoni (mochi in miso soup). Amasake (describes how to make amasake at home using either (A) 2 cups sweet brown rice, ¼ cup koji, and 4 cups water, or (B) 7 cups sweet brown rice flour, 1 cup koji, and 8 cups boiling water). Address: California.

1553. Hesseltine, C.W.; Wang, H.L. 1971. Fermented soybean foods. In: Y.M. Freitas and F. Fernandes, eds. 1971. *Global Impacts of Applied Microbiology, GIAM III*. India: Univ. of Bombay. See p. 403-20. Conference held in 1969 in Bombay, India. [11 ref]

• **Summary:** Contents: Introduction: Nine advantages of fermenting soybeans. Sufu. Hamanatto. Natto. Tempeh. Magou (from South Africa).

“In South Africa, an interesting fermented native food (*magou*) is now made on a modern industrial scale from fermented corn and soybeans. *Magou* is prepared by the fermentation of coarsely ground white corn meal (maize). Pure cultures of *Lactobacillus* used in this fermentation were isolated from native *magou*. The culture, which is not pure, is started in coarse whole wheat flour.” Then it is used to ferment corn meal for 22-24 hours. “The mash from the fermentation tanks is mixed with defatted soybean meal, sugar, whey, or buttermilk powder and yeast. The soybean meals used contain at least 52 per cent protein. After thorough mixing of all the ingredients, the mix is spray dried. Currently this product sells for about 10 cents a pound in 50 pound bags... *Magou* is used principally for feeding miners and other workers employed in heavy industry. It is well adapted to being taken into the mines and reconstituted at the point of consumption.” Address: NRRL, Peoria, Illinois.

1554. Hirayama, Takeshi. 1971. Epidemiology of stomach cancer. In: Tadashige Murakami, ed. 1971. *Early Gastric Cancer*. Baltimore, Maryland: University Park Press. Gann Monograph on Cancer Research No. 11. viii + 301 p. See p. 3-19. (Tokyo: Tokyo Univ. Press). [18 ref]

• **Summary:** This paper outlines the results of an epidemiological case-control study of stomach cancer in Japan. Table 1 (p. 10) shows “Factors associated with the standardized death rate for stomach cancer in 46 prefectures in Japan.” Many foods and nutritional elements are included. A negative association means: The more one consumes, the less one’s risk of dying from stomach cancer in Japan. The author reported a significant negative association for tofu (-5.28), vitamin A (- 4.12), and calcium (-6.54), and a very significant negative association for milk (-9.19). Thus these foods and nutrients appear to protect against stomach cancer. There was a significant positive association for fermented soybeans (+4.90; probably natto) and with a large amount of highly salted foods, including highly salted miso, but not including soy sauce or regular miso.

“The number of deaths from cancer of the stomach is still on the increase in Japan. Most of the increase, however, was found to be due to the increase in population itself. When the change in age structure was taken into account, the disease was noted to be on the downward trend since 1958. The death rate for age 45-49 in 1970 was 29% less for males and 14% less for females than in 1955.” The standardized death rate from stomach cancer for men in Japan (68.57) was the highest in the world, and over 7 times higher than for U.S. whites (9.42). By marital status, widowed men have the highest rate (376.3), followed by

separated men (273.6), then married men (116.4), with single men (75.1) having the lowest rate.

“In an international survey of 24 countries, the decline in the death rate for stomach cancer in recent years was found to be closely correlated to milk consumption.”

Address: Epidemiology Div., National Cancer Center Research Inst., Tsukiji 5-1-1, Chuo-ku, Tokyo, Japan 104.

1555. Korean Society of Food Science and Technology. 1971. *Comprehensive review of the literature on Korean foods (1917-1968)*. Seoul, South Korea: 71 p. * Address: Korea.

1556. Max, Peter; Proust, Ronwen Vathsala. 1971. *The Peter Max new age organic vegetarian cookbook*. New York, NY: Pyramid Communications. 128 p. Color illust. Index. 14 x 21 cm.

• **Summary:** Peter Max (the first author) was born in 1939. Soy-related recipes include: Miso soup (with aduki beans, p. 39). Soya poppy-seed rolls (with soya flour, p. 87). To sprout seeds, berries and beans (incl. soybeans).

1557. Ohsawa, Lima. 1971. *Makurobiotiku ryôri: Shokuyô katei ryôri 700 shu* [Macrobiotic cookery: Food-cure home cookery—700 recipes]. Tokyo: Nihon CI Kyokai. xix + 7 + 200 + 6 p. Illust. (many color plates). Index. 26 cm. [Jap]

• **Summary:** This macrobiotic classic contains many chapters and recipes related to soyfoods and other interesting Japanese foods: Azuki and bean cookery (p. 96-98). Tofu cookery (p. 99-104). Miso cookery (p. 104-08; tofu, miso, and shoyu recipes are also scattered throughout the book). The chapter titled “Other Vegetable Cookery” (p. 110-24) contains many recipes for *kôfû*, a term used to refer to fresh wheat gluten. There are recipes for Kofu cutlets and Kofu croquettes (#419, p. 112). Skewered kofu cutlets. Kofu fukume-ni. Kofu rolls (p. 113). Deep-fried kofu chunks (#423, p. 114; it states that kofu can be purchased at Chinese grocery stores). Interestingly, there is no mention of seitan. The same chapter contains 9 yuba recipes (p. 121-22). Recipes for sea vegetables are scattered throughout the book, especially in the chapter on wild vegetables (p. 135-37). Two recipes using amazake as a sweetener appear on p. 152, and homemade amazake beverage is found on p. 169

An extensively revised English-language translation of this book was published in 1974 under the title *The Art of Just Cooking* by Autumn Press. Address: Tokyo.

1558. Rose, Carrie; Peterson, Melinda. 1971. *The whole wheat heart of Yasha Aginsky: A vegetarian cookbook*. New York, NY: E.P. Dutton & Co., Inc. 128 p. Illust. Recipe index. 31 cm.

• **Summary:** Contains 3 soy-related recipes: (1) “Tofu.” A simple recipe for how to make tofu at home from full fat soy flour, using lemon juice as a curding agent. “Tofu,

better known as bean curd, is rich in protein and mainly used in soups, much as are chopped vegetables. Save the residue [okara] to use in breads, casseroles, loafs or soup.” (2) “Soy Nuts.” Soaked soybeans fried a few at a time in 1 inch of hot oil, then drained and salted. “One handful gives you an enormous amount of protein.” (3) “A Loving Soy Pat or Two.” Deep-fried patties containing whole and chopped soybeans, miso, vegetables, tahini, and whole wheat flour.

1559. Takashima, Shizuye 1971. *A child in prison camp* [1st ed]. Plattsburg, New York: Tundra Books. [74] p. Illust. so x 25 cm. *

• **Summary:** “The people in Japan, hearing how we have been treated by the Canadian Government, and that we are living in camps in the woods, send us barrels of soya sauce and miso paste.”

Note 1. This book is written for elementary and junior high school students. A Japanese-Canadian girl recalls her experiences of the three years (1942-1945) that she and her family spent in a Canadian internment (evacuation and relocation) camp during World War II. It was the New Denver Relocation Center in British Columbia.

1560. Tamura, Heiji; Hirano, Masaaki. 1971. *Shōyu no hon* [The book of shoyu]. Tokyo: Shibata Shoten. 286 + vi p. Illust. Index. 19 cm. [15 ref. Jap; eng+]

• **Summary:** Contents: Part I: Knowledge of shoyu. History of shoyu. How shoyu is made. Topography of shoyu: Shoyu in the provinces. Varieties of shoyu. Races of shoyu. How shoyu is used. Talk on various topics concerning shoyu. The science of shoyu. How to use shoyu and its near future. Part II: Shoyu cookery. Japanese cookery. Chinese cookery. Western cookery. One drop of shoyu can enliven. Part III: Shoyu and me. Short essays by famous Japanese about their fond, often childhood, memories of shoyu and its significance in their lives and in Japanese culture.

Mr. Tamura is a cooking teacher; he is said to have gotten most of his information other than recipes and reminiscences from another book, *History of Kikkoman Shoyu* (*Kikkoman Shoyu shi*, by Ichiyama 1968). Address: Tokyo, Japan.

1561. Tsuji, Kaichi. 1971. *Kaiseki: Zen tastes in Japanese cooking*. Tokyo and Palo Alto: Kodansha International Ltd. 207 p. With 96 color plates. Original woodcuts by Masakazu Kuwata. 29 cm.

• **Summary:** Contents: Foreword by Yasunari Kawabata (winner of the Nobel Prize for literature in 1968). Foreword: The tea ceremony and kaiseki by Sōshitsu Sen (head of the Urasenke School of Tea and the 15th generation descendent of Sen no Rikyu, founder of the school). Utensils and Kaiseki by Seizō Hayashiya (chief curator of the Ceramics Department at the Tokyo National

Museum). The twelve months of kaiseki. The kaiseki courses (defines and describes each course, such as Mukōzuke, Misoshiru [pages 168-71 give a fine description of miso and miso soup], Wanmori, Yakimono, Azukebachi, Hassun, etc.). Postscript. Notes on utensils. List of recipes. Glossary: Includes descriptions of miso, natto (incl. *Daitokuji-nattō*), shoyu, tofu, and yuba, plus azuki and Dainagon-azuki, many types of wheat gluten (fu), kuzu, mochi, sea vegetables (konbu, nori, wakame), fresh-water algae (Kamogawa-nori, Suizenji-nori (= Kotobuki-nori)), and umeboshi.

This is a magnificent, beautiful book, the finest work available on Japan’s highest form of haute cuisine, Tea Ceremony Cuisine, by a great Japanese Kaiseki chef. It was first published in Japanese by Tan-kōsha Inc. of Kyoto. Soyfoods are used throughout the book—especially miso, since one of the fixed courses in a kaiseki meal is miso soup (*misoshiru*). Many recipes use soy sauce, often the light colored type, usukuchi. Most recipes are shown in an accompanying full-color photo. The tea ceremony was developed at the court of the shogun in late Ashikaga times under such men as Soami, and his father and grandfather, Geiami (1431-1485) and Noami, who were painters, landscape gardeners, and poets in Kyoto. The greatest of the tea masters, under whom the tea ceremony (*chanoyu*) took final shape, was Sen no Rikyu (1521-1591). Zen preached the importance of the simple, uncluttered life. As a Zen priest and tea instructor, “Rikyu believed that amid the solitude of calm withdrawal from worldly cares sought by those who practice *chanoyu*, there should exist an element of creativity that leads to the serene enjoyment of beauty. The heart of this creativity, according to Rikyu’s Zen aesthetics, lies in the careful avoidance of the trite, the obvious, and the emphatic. Beauty has its most powerful effects when it arises from suggestion and restraint...

“Centuries ago, it was a rule that Zen priests ate only two regular meals a day—morning and noon. But since the priests engaged in rather strenuous work, by evening they were often hungry, and to assuage this hunger they would eat a light meal, which was called *yakuseki* (‘hot stones’). This term came from the practice of putting heated stones inside their clothing, by which the priests staved off hunger and cold during long sessions of meditation. When the tea masters developed the custom of serving a meal during the tea ceremony, they called it *kaiseki* (‘breast stones’). By evoking the image used in the Zen term, they seasoned their speciality with religious connotations.”

Soy-related recipes include: Miso soup (with aonorifu, azuki beans, and mustard, p. 29, plate 1, at Opening, the first of the 12 kaiseki months). Miso soup (with sesame custard, ginkgo nuts, and mustard), and Mukōzuke (with yuba and bonito flakes, p. 41, plate 9, at Evening). Miso soup (with wakanafu, kampyo, and mustard), and Azukebachi (hot dish, with sea cucumbers boiled in saké

and mirin, boiled yuba, citron peel garnish, p. 53, plate 17 & 22, at New Year's). Miso soup (with Sanshu miso, roasted momen bean curd [grilled tofu], and black [soy] beans), and Hassun (with natto wrapped in sea bream fillets, and miso-pickled chisha stems, p. 65-66, plate 25 & 31, at Spring). Miso soup (with icicle radish, temarifu, and mustard), and Azukebachi (hot dish, with octopus boiled in saké, and yuba, garnished with Japanese pepper, p. 77, plate 33 & 36, at Doll Festival). Miso soup (with yuba, warabi fern shoots, and mustard, p. 89, plate 41, at Flower Viewing). Miso soup (with walnut custard, trefoil, and mustard, p. 101, plate 49, at Brazier). Miso soup (with eggplants, bamboo shoots, and mustard) and Wanmori (abalone and bean curd custard, chisa leaves [a variety of lettuce], and grated ginger, p. 113, plate 57 & 59, at Off Season). Miso soup (with Sanshu miso, shiratamako, junsai) and Wanmori (with yuba and egg custard, asauri, and wasabi, p. 125, plate 65 & 68, at Morning). Miso soup (with Sendai and Sanshu-miso, koimo, and hojiso), and Yakimono (with deep-fried eggplant slices coated with white miso and broiled), and Hassun (broiled burdock wrapped in yuba, and deep-fried green peppers, p. 137-38, plate 73 & 76, at All Soul's Day). Miso soup (with namaifu, shirouri, and mustard), and Azukebachi (hot dish, with deep-fried dumplings of bean curd and hamo {sea/conger eel}, and broiled eggplants), and Hassun (with abalone cooked in saké and miso, soy beans in the pod [green vegetable soybeans] p. 149-50, plate 81, 85 & 86, at Moon Viewing). Miso soup (with koimo, zuiki, and sesame seeds), and Mukôzuke (with abalone, bean curd, and sesame seeds), and Wanmori (with boiled pine mushrooms and bean curd, nori, citron peel, p. 161, plate 89 & 92, at Closing).

Interesting Glossary entries: (1) *Daitokuji-nattô*, a "variety to which extra salt has been added, from the Daitokuji temple in Kyoto where it was first made as a preserve to be eaten in times of famine." (2) "*Fu* is the general name for a light cake made of wheat gluten. The two basic types of this cake are uncooked (*namaifu*) and baked (*yakifu*). The names that precede the suffix refer to what has been added to the gluten, the shape of the cake, or the area famous for a certain kind of cake. *Aonorifu* is baked and contains *Aonokiro*. *Chôjifu* is made long (=cho-) and cut to fit the bowl. *Daitokujifu* is fried cake that originated from the Daitokuji temple in Kyoto. *Temarifu* is a cake in the shape of a child's ball (=temari). *Wakanafu* contains several kinds of young greens (=wakana) that give it a fresh springlike color."

Note: This is the earliest English-language document seen (Oct. 2008) that uses the term *Daitokuji-nattô* (with a diacritical mark above the o -> ô) to refer to this Japanese type of "soy nuggets." Address: Kyoto, Japan.

1562. Watanabe, Tokujii; Ebine, Hideo; Ohta, Teruo. eds. 1971. *Daizu shokuhin* [Soyfoods]. Tokyo: Korin Shoin. 271

p. Illust. Index. 22 cm. [134 ref. Jap; eng+]

• **Summary:** This is the best book published to date on soyfoods in Japan. Contents: 1. Classifications and varieties of soybeans (p. 1). 2. Physical characteristics of soybeans (p. 5). 3. Chemical characteristics of soybeans (p. 9). 4. Standards and methods of examining soybeans (p. 47). 5. Special characteristics and problems of using soybeans for food (p. 53). 6. Current status of the soybean industry in Japan (p. 63). 7. Soymilk and various types of tofu: Aburage (deep-fried tofu pouches), ganmodoki (deep-fried tofu burgers), kôri-dofu (dried frozen tofu), soymilk, and yuba (p. 75). 8. Fermented soyfoods: Natto, shoyu, miso, fermented tofu (*rufu*) (p. 123). 9. Other soyfoods (incl. kinako, soy sprouts or moyashi, tempeh or tenpe, p. 203). 10. Quality and usage of defatted soybeans (*dasshi daizu*) (p. 219). 11. New food uses of soybeans and especially defatted soybeans (incl. 70% soy protein powder, soy protein curds, soy protein isolate, surimi gel, spun soy protein fibers) (p. 229). 12. Advice regarding supplying protein from organizations such as the United Nations and FAO (p. 257).

A 47-page translation of portions of this book (parts of Chapter 6 and all of Chapters 7) by Akiko Aoyagi and Chapters 8.1 and 8.2 by Alfred Birnbaum are available at Soyfoods Center.

Tokuji Watanabe was born in 1917. Hideo Ebine was born in 1921. Teruo Ota was born in 1926. Address: National Food Research Inst., Tokyo.

1563. Dimler, R.J. 1972. Oriental ceremonies at groundbreaking for a new rural industry. *Notes from the Director of the Northern Division* No. 1058. p. 2. Jan. 21.

• **Summary:** Describes the groundbreaking ceremonies on Jan. 19 for the new \$12 million Kikkoman shoyu plant at Walworth, Wisconsin. "Kikkoman sells 100 million gallons of shoyu annually, besides a line of dehydrated soups, miso,... The shoyu fermentation takes about 3 months and Kikkoman expects to start their first fermentations in October or November 1972 with the first sales in 1973. Initial production will amount to about 2,500,000 gallons annually which will use about 500,000 bushels total of wheat and soybeans per year. The plant brings to fruition the results from PL-480 research that NMN sponsored under the direction of Dr. C.W. Hesseltine (FL= Fermentation Lab), and that Kikkoman continued after the project itself terminated."

Dr. Hesseltine was among the honored guests. He found it cold standing in a corn field for almost 2 hours. Note: NMN probably stands for Northern Marketing and Nutrition Division—according to Dr. Walter Wolf, who worked there for many years. Address: Director [NRRL, Peoria, Illinois].

1564. Chico-San Inc. 1972. Chico-San Inc. products: A catalog of unique foods. P.O. Box 1004, Chico, CA 95926.

24 p. Revised Jan. 1972.

• **Summary:** The cover of this catalog is printed with dark brown ink on pea-green paper. A complex, circular orange-red spiral is above the title. Three sheafs of grain are across the bottom. Soyfoods imported from Japan include Lima Soy Sauce, Soybean Puree (Miso), and dehydrated miso. They also sell black [soy] beans.

Contents: Rice cakes is our bag. "How Chico-San guarantees Oriental-type, organically-grown brown rice." Wehah Farms is mentioned often in this article. Whole grains and flours. Cereals. Whole grain noodles. Beans. Specialties (incl. Yinnies / Ame). Seeds. Condiments. Sea vegetables. Dried foods. Beverages. Cosmetics. Dentifrice. Utensils. Recipes.

"Chico-San products have gained increasing acceptance throughout the country since their introduction in 1960." The booklet contains 11 pages of recipes (p. 13-23) including: Miso-sesame spread. Miso soup (p. 20). Address: P.O. Box 1004, Chico, California 95926.

1565. *SoyaScan Notes*. 1972. Chronology of Janus Natural Foods, macrobiotic and natural foods distributor in Seattle, Washington. And of Granum. 17 March. 1992. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1972 Jan.—Janus Foods Inc. is established at 712 Seventh Ave. South in Seattle, Washington, by George Gearhart and Blake Rankin, formerly of Spiral Foods. Some background: In 1969, while a student at UCLA, Rankin came in contact with Erewhon, Los Angeles. After graduation from UCLA he and several friends set up a small health food store in Victoria, BC, Canada. Then he spent 3 months in Boston, Massachusetts, living in a Kushi study house and working in an Erewhon warehouse. Back in Seattle, he worked at Spiral Foods, a wholesale operation that was an offshoot of Chico-San. Spiral Foods owned the O-Soba Noodle Nook in Seattle. Shortly after that he and George Gearhart, the proprietor, closed Spiral Foods and in Jan. 1972 opened Janus Foods as a macrobiotic and natural foods wholesale and distribution company. Tim Hartman was third of the original incorporators; all three men managed the company. It was successful. From opening day, Janus sold miso and shoyu, imported from Japan; they were among the company's best-selling products. Janus never owned a natural foods retail store or restaurant, and never sold foods retail from their warehouse.

1972 Sept.—Rankin leaves Seattle on a trip to Japan via Hawaii. He leaves Hawaii for Japan in March 1973. Erewhon had given Janus permission to buy natural foods (bearing the Erewhon label) directly from Japan, so in the spring of 1973 Rankin traveled and worked with Muso and Mitoku to set up the first shipments to Janus in Seattle. Janus probably never paid any royalties or fees directly to Erewhon. He leaves Japan in Sept. 1973. Then he goes to

Nepal and India on a spiritual search. In late 1973 he returns to Seattle and works for Janus.

1973—Two directories show that "Janus Foods Inc." is still located at 712 7th Ave. South, Seattle, Washington 98104. They now sell tamari and miso and distribute products from Erewhon, Spiral Foods, Deaf Smith, Pure & Simple, Chico-San, and Arrowhead Mills.

1974 March 8—Janus (Gearhart, Rankin, and Hartman) hosts the meeting of the Natural Food Distributors in Seattle; 16 people representing 12 companies attended.

1974 July 19. By this date, Janus Natural Foods, Inc. is located at 1523 Airport Way South, Seattle, WA 98134. Tim Hartman is still a manager of the company and Rankin is present. The company now sells barley koji. The company now has a lovely sprout-like logo (designed by Frederick Walsh) and a new brand called "Verity," whose labels were also designed by Walsh. Soy sauce and misos were sold under the Verity label for a while starting before Sept. 1976.

1975—The three managers decide to rotate the presidency of Janus annually. Rankin became president and Hartman left the company before his turn came around. During 1974 and 1975 Rankin and Gearhart were working on miso production.

1976 Sept.—Rankin leaves Janus and returns to Japan where he works for Mitoku and studies calligraphy. A few days after his arrival in Japan he meets his future wife, Yoko. They later had two children, but separated in 1988 and eventually were divorced.

1977—Janus leaves its large warehouse on Airport Way.

1979 Month? (before summer) Janus goes out of business, under the management of George Gearhart.

1981—Rankin returns to Seattle and in January or February starts Granum (pronounced GRAH-num, not GRAY-num) as a distributor and importer for Mitoku macrobiotic food products from Japan. The Granum logo is designed by Frederick Walsh. As of 1985 Granum has a small retail store and a 10,000 square foot warehouse, both at 2901 N.E. Blakeley St., Seattle, Washington 98105. Expected 1985 gross is more than \$500,000.

As of March 1992 Granum has more than doubled its business compared with 1985. Blake has remarried to Nancy and they have a 2-year-old son, Addison. George Gearhart now lives in the suburbs to the south of Seattle. He is a sales manager, but no longer works in the natural foods industry. Address: 712 7th Ave. South, Seattle, Washington 98104.

1566. Takeuchi, Tokuo; Hosokawa, N.; Yoshida, M. 1972. [Studies on the characteristics of proteolysate in soybean miso manufactured with enzyme preparation]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 50(1):21-29. Jan. [44 ref. Jap; eng]
Address: Food Research Inst., Aichi prefecture, Nishi-ku, Nagoya, Japan.

1567. *Food Engineering*. 1972. Japanese build sauce plant in U.S. 44(2):95. Feb.

• **Summary:** Subtitle: “Kikkoman Shoyu Co. will produce soy sauce in Wisconsin, using locally grown wheat and soy beans. Sauce will be made by applying modern technology to the traditional natural process.” An illustration shows an aerial view of the plant, which will be the largest Japanese plant to be built in the USA. The initial \$6 million plant will be built by Austin Co., Chicago, and be ready for operation in 1973. A description of the modern process for making “shoyu, a flavorful soy sauce,” is given. A portion of the soy sauce will be blended with other ingredients to make teriyaki sauce. A powdered miso (soy bean paste) soup is under development.

1568. Gorell, Wally. 1972. *Miso: What it is. How to make it* (Leaflet). Boston, Massachusetts. 4 panels. 22 cm. [1 ref]

• **Summary:** The author notes: “For the above text, I have drawn heavily on the writings of K. Shibasaki and C.W. Hesseltine which appeared in *Economic Botany* (1962) and *Mycologia* (1965).” Address: Boston, Massachusetts.

1569. Huang, Su-Huei. ed. 1972. *Chinese cuisine: Wei-Chuan cooking book*. Taipei, Taiwan: School of Home Economics, Wei-Chuan Foods Corp. 181 p. Illust. No index. 22 cm. [Eng]

• **Summary:** On each page is one recipe and a half-page color photo of the prepared dish. The title of the recipe is written in English in large bold letters and is also given in (to the right) in small Chinese characters, just above the number of servings. Most of the recipes call for ¼ to ½ teaspoon of MSG; many call for soy sauce.

On unnumbered pages at the front of the book are (1) A two-page color photo, on a light blue background, of 39 special ingredients, each numbered, with the numbers and names across the bottom of the pages. These include: “9. nori. 24. pickled plum (*umeboshi*). 25. bean curd noodle [pressed tofu noodles]. 30. bean curd wrapper (*pronounced ‘bai ye’*) [pressed tofu sheets]. 35. bean curd skin [yuba in large, semicircular thin sheets].

(2) Description of some other special ingredients: “Hot bean paste (*pronounced ‘la jiao jiang’*). This is made with red peppers [and soy beans] and has a very hot taste.” “Sweet bean paste (*‘t’ien mien jiang’*). This is made with steamed, fermented bread (black color).” Note 1. Why is this called “Sweet bean paste”? What kind of beans are used to make it?

“Soy bean paste (*‘do ban jiang’*). This is made with fermented soy beans (black color).” “Fermented black bean (*‘do shr’*). This is black [soy] beans which are steamed, then marinated in soy sauce or salt.” “Pickled bean curd (*‘do fu ru’* or *‘Chinese cheese’*). This is bean curd which is dried

and then pickled; there are many different kinds with different seasonings.”

(3) Helpful hints: “In all recipes you may substitute Worcestershire sauce for dark vinegar.”

In Chapter 3, “Pork and beef,” soy related recipes are: Shredded pork with sweet soy bean paste (with 1.3 tablespoons “sweet soy bean paste,” p. 39). Note 2. This is the earliest document seen (Feb. 2009) that contains the term “sweet soy bean paste.” See also p. 104 below.

Pork ribs with dried black fermented beans (p. 41). Pork in preserved bean sauce (p. 42).

In Chapter 4, “Sea Food,” is a recipe for Steamed carp with fermented black beans (p. 64).

In Chapter 5, titled “Bean curd and eggs” (p. 102-15) are recipes for: Stewed bean curd (with “1½ squares bean curd”), Assorted dish with hot sauce (with “½ tablespoon hot soy bean paste, 1½ tablespoons sweet soy bean paste,” p. 104), Bean curd stuffed with minced pork, Ma-Po’s fried bean curd with pork, Bean curd leaf rolls with minced pork (With “bean curd wrappers”), Beancurd noodles with celery salad (with “4 oz. {storebought} bean curd noodles”), Vegetarian chicken (with “16 bean curd sheets”).

Also: Green peppers stuffed with chopped meat (p. 122, with “1 tablespoon fermented black beans, crushed”). Bitter melon stuffed with fermented black beans (p. 126, with “2 oz. fermented black beans”). Eggplant with bean curd skin (p. 133, with “1 sheet beancurd skin” and “1 sheet nori” [sea vegetable]). Bean curd in earthen pot (p. 142, with “3 squares bean curd”). Address: 19 West Nanking Road, Taipei, Taiwan.

1570. Wang, Hwa L.; Ellis, J.J.; Hesseltine, C.W. 1972. Antibacterial activity produced by molds commonly used in Oriental food fermentations. *Mycologia* 64(1):218-21. Jan/Feb. [6 ref]

Address: NRRL, Peoria, Illinois.

1571. Aihara, Cornelia. ed. 1972. *The dō of cooking* (Ryurido). Vol. 1. Macroguide No. 13. San Francisco, California: George Ohsawa Macrobiotic Foundation. 109 p. Illust. No index. March. 25 cm.

• **Summary:** All recipes in this macrobiotic cookbook are numbered. Contains information on soy sauce and miso (p. 44-45). Soy-related recipes include: “Top of stove” casserole noodle soup (with “dry tofu” [dried-frozen tofu] and fried wheat gluten, p. 58). Fried whole wheat noodles (with seitan, p. 60). Homemade noodles with soup (and barley miso, p. 61). Onion miso (p. 62). Rolled cabbage with tofu (p. 63). Wheat gluten (p. 71, made from 10 cups whole wheat flour and 4 cups unbleached flour). Seitan (p. 72). Fresh wheat fu (2 versions). Serving recipes—boiled fu (p. 73). Fried fu—gluten cutlet. Shish kebab (with cooked fu, p. 73-74). Making tofu (at home using 3 cups soybeans, p. 75-76). Making nigari (p. 76). Quantity tofu preparation

(using 10 lb soybeans). Okara or unohana (sauteed with soybeans and vegetables, p. 76). Tofu with kuzu sauce (p. 78). Fried tofu. Shinano-age (Fried tofu with buckwheat, p. 79). Kaminari Tofu (Thunder Tofu, p. 79). Nori-maki (Tofu rolled in nori, p. 80). Age-tofu (stuffed tofu, variation, p. 80-81). Miso salad dressing (p. 90). Bean sprout miso salad (p. 91; it is not clear what kinds of beans the bean sprouts are made from—probably mung beans). Gamodoki ([Ganmodoki] mock goose; p. 99-100). French bread made with gluten water (p. 104). Amazake is not mentioned. Some recipes call for chicken or fish as ingredients.

Note 1. This is the earliest cookbook seen (July 2005) that gives a recipe for making seitan, as follows: “1 T. [tablespoon] dark sesame oil. 1 T. minced gingerroot. 1-2 cups soy sauce. 5 cups cold cooked gluten. Heat oil in a sauce pan, add minced ginger (use only fresh ginger) and saute. The amount of soy sauce used depends upon how long you intend to store the Seitan. Use a larger amount of soy sauce for longer storing and refrigerating. Add soy sauce, bring to a boil, and drop in pieces of gluten. Cook on low heat for three hours, stirring frequently. Remove cover and continue cooking until excess liquid is absorbed and evaporated. Seitan is ideal as a seasoning in noodles au gratin, stews, cooked with vegetables, etc. It will keep for long periods of time in the refrigerator.”

After Volume 2 of this series of four seasonal cookbooks was issued, Volume 1 was subtitled “Spring Cooking.” Address: San Francisco, California.

1572. Ebine, Hideo; Matsushita, Zenichi; Sasaki, Hirokuni. 1972. Beikoku-san daizu no miso genryô toshite no tekisei hyôka (hoi) Sôgô hyôka [Evaluation of U.S. soybeans as raw materials for making miso. (Supplement) Summary of evaluation tests]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 27. p. 132-36. March. Reprinted from Miso no Kagaku to Gijutsu No. 210. p. 21-24 (1971). [5 ref. Jap; eng]

• **Summary:** A test of 101 U.S. soybean varieties showed that those most suitable for making miso are Kanrich, Mandarin, and Comet. U.S. soybeans generally have much higher oil content and lower carbohydrate content than Japanese soybeans. Discusses the key points in evaluating the suitability of a soybean variety for making miso. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1573. Ebine, Hideo; Matsushita, Zenichi; Sasaki, Hirokuni. 1972. Beikoku-san daizu no miso genryô toshite no tekisei hyôka. III. Sentaku hinshu ni yoru chûkan kôgyô shiken [Evaluation of U.S. soybeans as raw materials for making miso. III. Miso manufacturing from screened soybean varieties in pilot plants]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 27. p.

118-31. March. Reprinted from Miso no Kagaku to Gijutsu No. 206. p. 16-28 (1971). [2 ref. Jap; eng]

• **Summary:** As a result to pre-screening, the soybean varieties Comet, Harosoy, M-1 (Kanrich), and Tsurunotamago (abbreviated as Tsuru were used for making miso in pilot plants). “White miso. light-colored salty miso, and red salty miso were made from whole soybeans and from soybean grits. The ability of the whole soybeans to absorb water was M-1 > Comet > Tsuru > Harosoy for light colored salty red miso and for red salty miso, and M-1 > Comet > Harosoy > Tsuru for white miso.

As for soybean grits, although the amount of solid matter lost during soaking and cooking is larger than for whole soybeans, the color of the cooked grits is brighter, resulting in miso of a beautiful color made from them, and the protein of cooked soybean grits is more susceptible to enzyme hydrolysis resulting in higher evaluation of their miso in a sensory / organoleptic test. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1574. Ebine, Hideo; Matsushita, Z.; Sasaki, H. 1972. Beikoku-san daizu no miso genryô toshite no tekisei hyôka. II. Daizu gurittsu ni yoru miso jôzô [Evaluation of U.S. soybeans as raw materials for making miso. II. Miso manufacturing from soybean-grits]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 27. p. 109-17. March. Reprinted from Miso no Kagaku to Gijutsu No. 203. p. 18-25 (1971). [7 ref. Jap; eng]

• **Summary:** Soybean grits were made from several dehulled U.S. soybean varieties (Dorman, Lee, Yelnanda, Harosoy, Hokkaido, and Clark) using two different dehulling machines. Large grits were preferred and the Weston Moisture Meter gave the best results. When using grits, 13% of the water soluble dry matter was lost in the water during soaking and steam cooking—twice as much as with whole soybeans. The main losses were from water-soluble sugars (6.1%) and protein (3.9%), both of which cause miso color formation.

When the grits were soaked in water before cooking, the color of the cooked grits and of the miso made from them was “bright and beautiful.” The loss of dry matter was the main problem. Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1575. Ito, Hiroshi; Ebine, Hideo; Takeuchi, Yasuko. 1972. Miso no kôki seibun no kenkyû. V. Kihatsusan no gasu kuromatogurafii [Studies on the flavor of miso. V. Rapid gas chromatographic analysis of volatile acids]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 27. p. 137-41. March. Reprinted from Miso no Kagaku to Gijutsu 208:20-23 (1971). [10 ref. Jap; eng] Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1576. Nakano, Masahiro. 1972. Miso—One of the Japanese traditional fermented foodstuffs. Paper presented at the Fourth International Fermentation Symposium. 4 p. Held 19-25 March 1972 at Kyoto, Japan.

• **Summary:** On the front page, the following organizations are listed in both English and Japanese: (1) Nagano Miso Industrial Co-operative Association, No. 1014, Minamiagata-machi, Nagano-shi, Japan. Phone: 0262 (28) 1221. (2) Japan Miso Industrial Co-operative Association, Shinkawa 1-26-19, Chuo-ku, Tokyo. Phone: 03-(551)-7161.

Contents: Traditional foodstuffs. Japanese fermented foods. Definitions of miso and koji. Miso: Its prototype was introduced to Japan about 1,200 years ago, development into miso, the varieties of miso. Koji, *Aspergillus oryzae*, and enzymes. Period of fermentation and salt-resistant lactic acid bacteria. Miso soup. Per capita consumption of miso throughout Japan is now about 27-30 gm/day. Flow diagram for commercial production of rice miso, with amounts of each ingredient given. Table showing nutritional composition of five basic types of miso.

Note: This is the earliest document seen (March 2009) that gives basic information about commercial miso production. Address: Meiji Univ., Japan.

1577. Tamura, Shinpachiro; Ishima, T.; Saito, S.; Miyauchi, T.; Tomita, F.; Yoshikawa, S. 1972. [Studies in the patterns of six tastes of twenty drinks in Japan]. *Shokuryo Kenkyujo Kenkyu Hokoku (Report of the Food Research Institute)* No. 27. p. 77-83. March. [3 ref. Jap; eng]

• **Summary:** “Taste patterns of 20 drinks in Japan were studied.” A total of 10 points were assigned to each of “six taste components, namely, sweet, salty, sour, bitter, tasty, and astringent.”

These drinks included miso soup and soy sauce soup (*sumashi-jiru*, a clear soup seasoned with soy sauce). A very interesting diagram showing these relationships appears on p. 80.

“The highest pattern similarity (0.996) was found between two kinds of green tea, namely ‘sen-cha’ and ‘ban-cha,’ and the lowest one was found between soysauce soup and coffee or Coca-Cola.” Address: Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

1578. Wiener, Joan. 1972. New food freaks. *Seventeen*. March. p. 134, 156, 158.

• **Summary:** This entire issue is about California. When the writer first came to California in 1967, it blew her mind. It was everything she had wanted back east but couldn’t get. Lots of sunshine, great vistas, abundant organic food, bags of brown rice, refrigerators packed with honey ice cream and goat’s milk yogurt, crates of California fruits and vegetables “untouched by man-made chemicals. It was food-freak heaven!... Since then the natural food scene has exploded. There are longhair-owned restaurants and stores

with names like “The Radiant Radish” (in Los Angeles), “Wholly Foods” (Berkeley), “The Good Earth” (Fairfax), and “Agape Natural Foods” (San Francisco). Hundreds of young people are going back to the land and to farming. Thousands more are buying organic foods at natural food stores. New Age Natural Foods is a huge, magnificent, almost unbelievable natural foods supermarket on California Street in Palo Alto—featuring pretty, healthy young salespeople, a huge produce section, a take-out deli (she watched as someone made meatless sesame burgers with chickpeas and miso), fresh pressed juices and information—such as free pamphlets on recycled paper with titles like “The Sugar Story,” “The Oil Story,” “The ‘Not’ List.” The manager, Randy Fishel, age 25, has been in business for 6 years. Randy says that when Fred Rohe opened New Age [in San Francisco] in 1969, the customers were mostly hip long-hairs. Today, 35% of the customers are the wives of doctors and lawyers. Also in 1969 Fred Rohe and Randy created Organic Merchants (OM), the only trade association for natural food stores; today there are 110 members—“mostly freaky little stores run by young people.” OM is very concerned with quality control.

Photos show: (1) Jim Baker and Robin Baker, owners of The Source restaurant, seated at a table under an awning. (2) Warren Stagg at his restaurant, H.E.L.P. Unlimited. (3) Customers weighing their purchases at New Age supermarket. Address: San Francisco.

1579. Farmilant, Eunice. 1972. Macrobiotic cooking. New York, NY: New American Library. 224 p. Foreword by Herman Aihara. May. Index. 18 cm. [31 ref]

• **Summary:** This pocketbook has a color (beige) photo on the cover of ears of wheat, one wooden spoon filled with soybeans and one filled with unpolished rice. It is “A basic introductory guide to cooking and eating the macrobiotic way.” The author’s interest in macrobiotics began in April 1968. Basic information on soyfoods (especially miso, tamari, and tofu) is given on pages 29, 33-38, 213-14. Soy-related recipes include: Wheat berries and black beans (i.e. black soybeans, p. 78). Sprouts (incl. soy sprouts, p. 82-83). Miso pickles (p. 124-25). Miso soup (p. 128-29). Cream of miso soup (p. 135). Black beans and wheat berries (p. 139).

There is an entire chapter on miso and tofu (p. 142-46) including: What makes miso so beneficial? Barley miso (nutritional analysis). Miso-vegetable stew. Miso-rice. Miso stew with vegetables. Miso-vegetable spoon bread. Homemade tofu (curded with fresh lemon juice).

Pizza—Macrobiotic style (with miso, p. 149). Chop suey (with tofu and miso, p. 151-52). Miso bechamel sauce (p. 159). Miso gravy. Simple tahini and tamari sauces (p. 160). Tempura dip (with tamari). Simple miso spreads (p. 161). Miso-vegetable spread. Miso-watercress spread.

There is a directory of macrobiotic stores and restaurants in the U.S. (p. 191-203, subdivided alphabetically by state,

and within each state alphabetically by city). The following states have the following number of stores and restaurants: Alaska 1, Arizona 4, Arkansas 1, California 32, Colorado 4, Connecticut 18, District of Columbia 3, Florida 14, Georgia 7, Hawaii 2, Illinois 7, Indiana 2, Iowa 5, Louisiana 4, Maine 14, Maryland 7, Massachusetts 51, Michigan 12, Minnesota 3, Mississippi 2, Missouri 3, Nevada 1, New Hampshire 20, New Jersey 9, New Mexico 3, New York 61, North Carolina 5, Ohio 14, Oklahoma 3, Oregon 2, Pennsylvania 8, Rhode Island 5, South Carolina 1, Texas 4, Utah 1, Vermont 26, Virginia 4, Washington 3, Wisconsin 2.

There is also a directory of stores, restaurants, and centers outside the U.S. (p. 204-07, subdivided by country). The following countries have the following number of stores, restaurants, or centers: Australia 1, Belgium 2, Brazil 2, Canada 15, Denmark 4, France 29, Germany 1, Holland (Netherlands) 2, India 1, Italy 1, Japan 3, Portugal 1, Puerto Rico 1, Spain 1, Sweden 1, Switzerland 2, United Kingdom: England 13, Scotland 1, Vietnam 2.

A list of wholesale distributors in the U.S. (p. 208-09) includes Shiloh Farms (Route 59, Sulfur Springs, Arkansas), Erewhon Trading Co. (8003 W. Beverly Blvd., Los Angeles, California 90048), Chico San Foods (1262 Humboldt Ave., Chico, California 95926), Erewhon Trading Co. (33 Farnsworth St., Boston, Massachusetts 02210), Deer Valley Farms (Guilford, New York 13780), Infinity Food Co. (171 Duane, New York, NY 10013), Mottel Foods (451 Washington, New York, NY 10013), Juniper Farms (Box 100, Sugar Loaf, NY 10981), Pioneer Specialty Foods (Fargo, North Dakota 58100), Merit Food Co. (Pill Hill Lane, Box 177, Bally, Pennsylvania 19503), Essene (58th & Grays Ave., Philadelphia, PA 19143).

1580. Nakano, Masahiro. 1972. Synopsis on the Japanese traditional fermented foodstuffs. In: W.R. Stanton, ed. 1972. *Waste Recovery by Microorganisms: Selected Papers for the UNESCO/ICRO Work Study*. Kuala Lumpur: Ministry of Education, Malaysia. See p. 27-48. Distributed in the USA by UNIPUB, New York.

• **Summary:** Contents: Introduction. Miso. Shoyu. Tane-koji. Koji. Natto. Sake. Concluding remarks. Appendix. Address: Tokyo, Japan.

1581. Takeuchi, Tokuo. 1972. Miso, shōyu no peptides ni kansuru kenkyu. IX. [Studies on peptides in miso and soy-sauce. IX. Some properties of peptides having high and low molecular weight in soybean miso]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 50(5):321-30. May. [20 ref. Jap; eng]
Address: Food Research Inst., Aichi prefecture, Nishi-ku, Nagoya, Japan.

1582. Narayana Rao, N.; Ramachandra Rao, T.N.; Shanthamma, M.S. 1972. Development of pre-digested

protein-rich food based on Indian oil seed meals and pulses. II. *J. of Food Science and Technology (Mysore, India)* 9(2):57-62. June. [10 ref]
Address: Central Food Technological Research Inst. (CFTRI), Mysore, India.

1583. Webber, Ella V. 1972. Perry A. Webber: Pioneer missionary in true education to Japan. Chattanooga, Tennessee: Southern Missionary College. 87 p. *

• **Summary:** Perry A. Webber was born on 15 June 1890 in Northville, Michigan. His parents became Seventh-day Adventists (SDAs) during his early childhood. In 1904 the family moved to Berrien Springs, Michigan, and Perry was educated there. In 1911 Perry graduated with a BA from Emmanuel Missionary College [in Berrien Springs] and in 1912 he was married to Ella Mae Verney.

In 1913 he was appointed by the SDA General Conference Foreign Mission Board to go, with his wife, as missionaries to Japan. In Tokyo they studied Japanese language for 2 years, then began pioneering educational work in Japan until 1927. For 4 years (1915-19) they worked in Fukuoka (in northern Kyushu), then returned to Tokyo. A son, Alfred B. Webber, was born in Dec. 1919; he later became a medical doctor. In Tokyo they worked at a school in Ogikubo. By 1921 Perry was teaching about the virtues of brown rice. In 1923 Perry found 25 acres of land in Sodegaura; in September of that year the Great Tokyo Earthquake (*Kanto Daishinsai*) took place. Later in 1923 the family returned to California because of the wife's respiratory problems. Harry Webber was born in Glendale. After a year in Honolulu, Hawaii, in 1934, they returned to Japan in the summer of 1925 and moved the college into the country. In the spring of 1926 the students and teachers started to build their own self-supporting school, with Perry as principal. This school later grew into the Japan Missionary College (*Saniku Gakuin*). The Japanese name means "three-sided school" since equal emphasis was placed on mental, moral, and manual development.

During these years Perry grew very fond of Japanese food and especially of Inari-zushi (made of deep-fried tofu pouches filled with vinegared rice). On his way to language school, he used to stop in regularly at the Shinoda Sushi Shop in Kanda (in Awaji-cho by the 1970s) to enjoy their Inari-zushi. The shop once developed a special Webber Sushi, named after him, and they used his name in some of their promotional materials. He was also very fond of regular tofu and of miso soup.

In 1927 the Webbers returned to America to educate themselves in good health. At this time Adventists believed that the true remedies are "pure air, sunlight, abstemiousness, rest, exercise, proper diet, the use of water, and trust in Divine power (*Ministry of Healing*, p. 127). In the fall of 1928 Perry entered Michigan State University to study biological chemistry while his wife, Ella Mae, studied

nutrition; both were deeply interested in understanding the principles of good health. By May 1929 Perry was considered “one of our teachers” by Madison College in Madison, Tennessee.

During the early 1930s and the Great Depression, many students’ only hope of getting an education was to rely on their own efforts. Madison, which offered a work-study program, became a very attractive alternative school.

In Sept. 1930 the family moved to Madison while Perry finished his thesis. In June 1931 Perry was awarded his PhD degree in biological chemistry, with special interest in chemistry and soyfoods development. At Madison he became an instructor of chemistry with a strong interest in food chemistry. In the following years he became the main person at Madison responsible for the school’s growing involvement with soyfoods. In Nov. 1931 Perry wrote a long two-part article for *The Madison Survey* titled “Facts Concerning the Soybean.” During the early 1930s he put a great deal of creative energy into expanding Madison’s line of commercial soyfood products. Most of the products that were introduced between 1931 and 1934 were the result of his work. In August 1933 Perry Webber and Frances L. Dittes attended the annual convention of the American Soybean Association (ASA) in Baton Rouge, Louisiana. Webber presented a lecture with slides about the importance of soyfoods in Asia and their potential in America. He also prepared an exhibition of Madison soyfoods that was displayed at the convention. Webber was secretary-treasurer of the ASA for one year at this time. He visited Edsel A. Ruddiman at the Ford Motor Company and gave a talk to him and other leading research scientists about soyfoods. He was also a close friend of Dr. John Harvey Kellogg. He visited Kellogg, talked about soyfoods, and did some work developing a preservative for some of Kellogg’s crackers.

Perry Webber worked at Madison until Sept. 1935 when, after a big farewell party, he returned to Japan to serve as principal of the Japan Missionary College (Saniku Gakuin). There he taught a lot about nutrition and the value of a vegetarian diet. In about 1936 Webber visited Dr. Harry Miller in Shanghai, China, and helped him set up a sanitation and research lab for analyzing the Vetose soymilk products at his new plant.

From 1939 to 1943, during World War II, Webber was back in the USA, teaching at Madison as head of the chemistry department. He was also at Madison from 1946 to 1953 and from 1959 to 1962, each stay punctuated by work in Japan. While serving as an administrator at Madison Foods (1959-1963) he and Sam Yoshimura pulled the factory out of debt and put it several thousand dollars into the black in one year’s time.

During his trip to Japan that began in the spring of 1953, he taught one food plant how to make gluten, soymilk, and soy croquettes. Also in 1953 he started a self-supporting organization at Mt. Akagi, about 125 miles northwest of

Tokyo; there he worked for more than 7 years. In the winter of 1956 he suddenly became ill with pneumonia. He returned to America in the summer of 1958 and was found to have Parkinsonism; no medicine was prescribed until 1962. In 1966 Perry was an outpatient at the Madison Sanitarium/Hospital for a time, then he became an inpatient from Oct. 1967 to Jan. 1968. In Sept. 1968 he went to a convalescent home in Lodi, California. His son, Dr. Alfred B. Webber, was living and practicing medicine in Lodi. In 1969 he returned to the Wildwood Sanitarium, a self-supporting Seventh-day Adventist convalescent home and health care facility in Wildwood, Georgia (northern Georgia). He passed away there in January 1973 at age 82 of Parkinsonism.

1584. Conrat, Maisie. 1972. Soybean cookery. *Organic Gardening and Farming* 19(7):89-93. July.

• **Summary:** Discusses the benefits of soybeans and their products: whole soybeans, soy flour, tofu, miso, and soy sauce.

“If you go into a natural food store today, you will find soybeans available in many forms. In some stores you’ll find two or more varieties of whole beans as well as soy grits and soy meal, soy powder and soy flour. Most stores also carry roasted, salted soy nuts and a kind of soy cheese called tofu. They will have noodles, spaghetti, and macaroni made from soy; and they will also carry exotic soy products like miso. This may seem like a lot of things to get from one kind of bean, but in Japan, where soy is considered a protein staple, you will find more products yet...”

“Both tamari soy sauce and miso are made from fermented soy beans. (Regular commercial soy sauce has been adulterated with various chemicals to simulate fermentation.) Miso is a thick paste made from black [not true] soybeans and rice, and has the same flavor as tamari soy sauce. You can use miso as you would beef extract in making soups, stews and sauces.

“Tofu is a kind of soy cheese. It is widely used throughout China and Japan, where it is available in many forms. Tofu is made from clabbered soy milk, just as cottage cheese is made from clabbered cow’s milk. It is very mild and delicate, so you will probably want to serve it in a sauce or soup that has plenty of character.”

Contains recipes for: Apple soy crisp (with soy meal). Soy pancakes (with soya flour). Soy cheeseburgers (with soybeans). Soy balls (with soy powder).

1585. Ebine, Hideo; Matsushita, Z.; Sasaki, H.; Yanai, S.; Ariyoshi, M.; Machi, M. 1972. Beikoku-san daizu no miso genryô to shite no tekisei hyôka [Evaluation of U.S. soybeans as raw materials for making miso]. *Report of Central Miso Institute* No. 7. 66 p. July. Collection of 7 articles, in Japanese, with 4-page English-language summary. [28 ref. Jap; eng]

• **Summary:** Part I: Miso manufacturing test on a laboratory scale. (1) Employing 13 varieties of U.S. soybeans and 11 varieties of Japanese soybeans of 1961 crops, U.S. soybeans were generally higher in oil content and lower in carbohydrate content than Japanese soybeans. Among the tested U.S. varieties, Comet, Yelnanda and Harosoy were promising.

(2) In 1962, 27 samples of U.S. soybean crops and 5 samples of Japanese soybeans were employed. Not all the Japanese varieties tested were evaluated superior to the U.S. varieties, but the evaluation of consistency or texture was higher than that of U.S. varieties.

(3) Fourteen samples of U.S. soybeans from the 1963 crop and 26 samples from the 1964 crop were evaluated for their suitability in making miso. From the 1963 crop, Comet, J.E.W.-45, and Mandarin were considered the best. From the 1964 crop, Mandarin and Kanrich were considered best.

(4) Of the soybean samples of 1965 and 1964 crops, the results showed that Kanrich variety of 1964 was the best. "In comparison with U.S. soybeans, the characteristics of Japanese soybeans can be significantly recognized in the consistency of miso, namely in its fine and smooth texture."

Part II: Miso manufacturing from soybean-grits. Twice as much dry matter was lost during cooking as when whole soybeans were used. The main constituents of the loss were water-soluble sugar (6.1%) and protein (3.9%) which cause color formation of miso. When the soybean grits were soaked in water before cooking, the color of the cooked soybean grits as well as miso made from them were bright and beautiful. The flavor of fermented miso was also improved by this method of using soybean grits.

Part III: Miso manufactured from screened soybean varieties in pilot plants. The variety M-1 gave the best results for light colored salty miso, red salty miso, and white miso.

(Supplement) Evaluation tests were conducted on 101 U.S. and 24 Japanese soybean samples. In comparison with Japanese soybeans, the U.S. soybeans showed a higher level of oil content and a lower level of carbohydrate content. The varieties of U.S. soybeans suitable for making miso are Kanrich, Mandarin, and Comet. Soft and bright soybeans are generally suitable, since they show a high absorbing capacity of water. Soybeans rich in carbohydrate show generally high capacity of water absorption. Large size of soybeans are generally acceptable. Address: 1. Shokuryo Kenkyujo, Tokyo.

1586. Ebine, Hideo. 1972. Fermented soybean foods in Japan. *Tropical Agriculture Research Series* No. 6. p. 217-23. Sept. Symposium on Food Legumes.

• **Summary:** Production of fermented soybean foods in Japan in metric tons (tonnes) (1968): Miso: 553,000 tonnes; includes the use of 169,000 tonnes of whole soybeans,

6,600 tonnes of defatted soybeans, 84,400 tonnes of rice, 18,200 tonnes of barley, and 71,200 tonnes of salt. In addition, roughly 200,000 tonnes of miso are made at home in Japan.

Shoyu: 1,027,000 kiloliters; includes the use of 14,900 tonnes of whole soybeans and 147,320 tonnes of defatted soybeans, 126,600 tonnes of wheat, 7,700 tonnes of wheat bran, and 172,200 tonnes of salt.

Natto: 90,000 tonnes; includes the use of 47,000 tonnes of whole soybeans.

Note that miso uses more soybeans than shoyu. Annual per capita consumptions of these foods was: Miso 6.7 kg, shoyu 10.2 liters, and natto 760 gm. Address: Head, Fermentation Div., National Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo.

1587. Menezes, Tobias J.B. de. 1972. Alimentos e molhos obtidos por fermentacao da soja e de cereais [Foods and sauces obtained by fermentation of soybeans and cereal grains]. *Boletim do Instituto de Tecnologia de Alimentos (Campinas, Sao Paulo, Brazil)* No. 31. p. 49-63. Sept. [24 ref. Por]

• **Summary:** Contents: Introduction. Shoyu (*molho de soja*). Miso. Natto. Tempeh. Sufu. For each food, there is an introduction and a description of the process for making that food, sometimes with a flowchart.

Note: This is the earliest Portuguese-language document seen (April 2001) that mentions fermented tofu, which it calls "sufu." Address: Brazil.

1588. Saio, Kyoko; Watanabe, Tokuji. 1972. Advanced food technology of soybean and other legumes in Japan. *Tropical Agriculture Research Series* No. 6. p. 209-16. Sept. Symposium on Food Legumes.

• **Summary:** The following amounts of whole soybeans (in 1,000 metric tons) are used in Japan to make these products: Tofu and fried tofu 295, miso 169, natto 47, Kori-tofu (dried or frozen tofu) 34, shoyu 15, kinako 12, others 70. Total 642.

The following amounts of defatted soybeans (in 1,000 metric tons) are used in Japan to make these products: Shoyu 154, tofu and fried tofu 77, miso 8, others 45. Total 284. Grand total: 926. Address: 1. Senior Research Officer; 2. Director. Both: National Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo.

1589. Eden Foods. 1972. [Catalog and pricelist]. 211 South State St., Ann Arbor, MI 48108. 2 p. Oct. 5.

• **Summary:** This is the second earliest existing Eden Foods seen that is dated. Soy-related products include: Hopi Roasted Soybeans (1.3 oz snack). Soybeans (1 lb, 2 lb, and 50 lb bags). Soy flour (25 lb or 50 lb). Tamari soy sauce (pints, quarts, gallons).

Other interesting products include: Azuki beans (25 lb, 50 lb, and 100 lb bags). Sweet rice flour (25 lb). Celestial Seasonings herb teas (incl. The Red Zinger). Mu herbal tea #9, #16. Wild ginseng tea. Wild ginseng root. Wild goldenseal powder. Whole wheat noodles. Dr. Bronner's Castile Soap. Corona Hand Mill. Honey (blueberry blossom or raw clover; "This honey is strained only once and heated only to 115 degrees and not above in order to preserve the natural nutrients and enzymes in the honey").

Note: This is the earliest document seen (Jan. 2002) containing the term "Sweet rice" or "Sweet rice flour." The new term is used in place of the traditional term "glutinous rice" which is inaccurate since this type of rice contains no gluten. People with celiac disease, celiac sprue, or Duhring's disease must strictly avoid foods that contain gluten; they can eat "sweet rice." Address: Ann Arbor, Michigan.

1590. *East West Journal*. 1972. Chico-San burns. 2(14):5. Oct. 2-16.

• **Summary:** A fire at the Chico-San warehouse in Chico, California on September 14 results in the loss of 90% of the company's natural food inventory worth approximately \$350,000. Origin of the fire was uncertain, but it apparently happened when a vapor leak caused an explosion in one of the new rice cake machines. The macrobiotic food industry got its start in this country eight years ago with the production of Chico-San rice cakes.

Among the items destroyed was the first batch of traditionally-made American miso, which Chico-San had planned to market in the coming year. New office and warehouse facilities are in operation at 2244 West First Street in Chico. President of Chico-San, Robert Kennedy, hopes the rice cake machines and "yinnies" candy production can be re-assembled and working again within the month. Address: P.O. Box 203, Prudential Center Station, Boston, Massachusetts 02119.

1591. An, Jin-huai; Wang, Yugang. 1972. Mixian Da-huting Handai huaxiang shimu he bihua mu [The Han tomb No. 1 at Ma-wang-tui]. *Wen Wu (Cultural Relics, China)* No. 10. p. 49-62. [Chi]*

• **Summary:** The Han tomb No. 1 at Ma-wang-tui (pronounced "ma-wang-DUI") was discovered in 1972. Letter from Dr. H.T. Huang, expert on the history of Chinese food and agriculture. 1996. Sept. 29. This is the first official report on Han tomb No. 1. The article describes several of the murals, but not the one which has since been interpreted as a scene showing tofu being made; that mural was first described by Chen Wenhua in August 1990. Address: China.

1592. Kushi, Michio. 1972. Macrobiotic seminars of Michio Kushi. Boston, Massachusetts. 152 p. Illust. No index. 28

cm. Transcribed by Joan Mansolilli.

• **Summary:** This is a transcript of talk given by Michio Kushi, macrobiotic teacher, in the fall of 1972, from Oct. 10 to Dec. 20. The main subjects are: Theory and practice of natural agriculture. Principles of the ancient world calendar. Disease—Origin, causes, and cures.

Soyfoods are mentioned briefly as the cure for various ailments, including diabetes mellitus (p. 92, 94; miso, tamari), venereal disease (p. 104; tekka, strong miso), stomach cancer (p. 128-29; miso soup, fried tofu, tekka, miso pickles), toxication from cigarette smoking (p. 131; miso soup), appendicitis with high fever (p. 132-33; tofu plaster on head). Address: Boston, Massachusetts.

1593. Midwest Natural Foods Distributors, Inc. 1972. Catalog and price list 11/1/72. Offering the best in natural foods. Ann Arbor, Michigan. 58 p. Nov. 1. Index. Illust. 22 cm.

• **Summary:** This is a very early natural foods catalog, typewritten and mimeographed on pink paper; it contains a few logos of manufacturers but no ads. On the front cover is a stylized illustration of a rayed sun, with each ray represented as a fruit or vegetable. Contents: Hi! Who, where, phone, why. General information: Service, terms, freight, notes, contact (Henry Bednarz and Larry Kociela, p. 1-2). Special case lot discount—5%. Lines on which case lot discounts are not allowed (7). "Computerized billing by January 1, 1973 including Quantity, Unit, Description, Size, Sugg. [Suggested] Retail, Unit cost, extension, 10 day 2% discount, 10 day case lot discount" (p. 4).

The body of the catalog is an alphabetical listing of suppliers / manufacturers, with major brands or product categories a cross references (e.g. Bakon Yeast, see Sovex). Within each, products are listed alphabetically (shown below in parentheses). These include: Acme juicer Co. Appliances & utensils. Barth's Nutra Foods (Barth Soya Date Cereal). Books (Nutri-Books Corp., Denver, Colorado). Chico San (Rice Cakes, Lima Tamari Soy Sauce, Miso Soybean Puree, Sesame Salt, Sesame Butter, Salt Plums, Kuzu {wild arrowroot}, azuki beans, Mu Tea, kombu, soysauce tableserver—glass, chopsticks), Celestial Seasonings teas, Continental Culture Specialists (acidophilus culture, kefir grains, royal yogurt), Dr. Bronner & Assoc. (dulce sea lettuce, lecithin protein cereal, Do It Twice Soy Vege Base, pure peppermint oil soap), El Molino (7 Grain Cereal, soy beans—whole, soya flour, soya grits, soya meal, Graham flour), Fearn Soya Foods (Pancake S.F. [Soya Flour] Mix, liquid lecithin, High Protein (carob, chocolate, vanilla), soya protein 96%, Protein 600 Tablets (vanilla, chocolate), Muscle Protein, Soya Powder—Natural, Soya Powder—Low Fat, Soya Granules, cooking soybeans, Wheat Cereal Soya Mix, Corn Bread Soya Mix, Salted Plain SoyoSnax, Soybean—sprouting, lecithin granules, Soy O Snaks—Natural, barley—hulled organic, triticale flour—

organic), Flavor Tree (Pernola, Pernuts {unsalted, sea salted, mild garlic, onion, carousel [carousel] carob covered}), Gides, Inc. (Nu-Life {vitamins & minerals—has the most products of any supplier}; A Soyadophilus, vitamin E natural mixed tocopherols), Lassen Foods (granola), Malt-O-Meal (Soytown) (salted soy beans [roasted], unsalted, barbecue flavor, garlic, soy spread, soy honey bar, soy nut bar), Miracle Juicer Co., Modern Products (Gayelord Hauser), Norganic (vegetable oils, incl. peanut oil, soy oil, safflower oil, sesame oil, sunflower oil, Gold Soya Mayonnaise), Richter Bros. (Familia cereals {Swissy Cereal, Fritini Mix}, Morga vegetable bouillon, Pero coffee substitute, Herbmare seasoning salt), A. Sahadi Co. (sesame tahini), Sourdough Jack's Country Kitchen (sourdough starter), Sovex (granola, Bakon Yeast), Seelect Dietary Products: Herb teas (incl. Bladderwrack, dulce leaves, saw palmetto, Irish moss), St. Laurant Peanut Butter, Sunshine Valley, Viobin (lists 16 products, incl. wheat germ oil), Mineral Waters (incl. Apollinaris, Vichy, Perrier, Mountain Valley), Grist Mill (granola, Wunder Bars, Honey Graham Cracker, Super Protein Concentrate), Norwalk Juicer Co., Parkelp (Ocean Labs, Inc.; lists 4 kelp products), Nuvita Foods (Langes; Soya Carob Macaroni). Organic Sun Valley Dried Fruits (incl. Calimyrna figs, Monukka raisins, Black Mission figs, Zahadi dates). Honey Preserves—No sugar added. Index by products and suppliers.

Note 1. This is the earliest document seen (May 2006) concerning Midwest Natural Foods.

Note 2. This is the earliest English-language document seen (June 2006) that mentions the "Acme Juicer" or the "Acme Juicer Co." Address: 310 W. Ann St. (P.O. Box 100), Ann Arbor, Michigan 48107. Phone: 313-761-2997.

1594. Blinn, Johna. 1972. Celebrity cookbook: Keye Luke cooks variation on one theme. *Chicago Tribune*. Nov. 2. p. N_A8.

• **Summary:** Mr. Luke, a veteran actor with Zen Buddhist beliefs, is an amateur cook who has one or two Chinese dishes he likes to prepare—starting with flank steak: "I throw in a little ginger, garlic, assorted black bean paste, and soy sauce. I cook it over a hot fire in a wok."

His recipe for Asparagus and beef calls for "½ cake bean curd, diced. 2 to 3 tablespoons soy sauce."

1595. Advest Co. 1972. Private placement \$500,400. 1112 shares. Erewhon Inc. (Continued—Document part II). Hartford, Connecticut. 34 p. 28 cm.

• **Summary:** Continued from p. 12. Management of Erewhon: Paul Hawken—President & chairman. Born on 8 Feb. 1946 in San Mateo, California. Attended Berkeley High School in Berkeley, California. Graduated from Nevada Union High School 1963 [located between Nevada City and Grass Valley, California, is the Sierra Nevada foothills]. Worked one year as a carpenter. Traveled in

Europe 1964-65, studied at Alliance Française. Returned to the USA and enrolled at San Francisco State. School was closed by demonstrations, so he went into business for himself—Commercial photography, portraits, and advertising. Left business in 1966 to come to Boston to begin working at Erewhon in Aug. 1966. Married [to Dora Coates], one child.

Tomoko Kushi—Stockholder. Michio Kushi—Director East West Foundation. Morris Kirsner—Attorney at law.

John Deming, Jr.—Retail manager. Born 27 June 1947 in Tacoma, Washington. Graduated from Bolton High School at Alexandria, Louisiana, in 1965. Attended Tulane University (New Orleans) until 1967, majoring in English. Began his own business, opening a natural food store in Jackson, Mississippi. Sold the business in Aug. 1971 and went to work with Erewhon in Los Angeles. Married [to Judy Coates in Aug. 1972].

Gordon William Garrison, Jr.—Vice-president. Born 19 Dec. 1946 in New York, NY. Graduated Bennington High School 1964. Attended Norwich University [Northfield, Vermont] 1964-65. Attended University of Vermont 1965-69, and graduated in 1969 with a B.A. in philosophy and art. Job Experience: Camp counselor, construction worker, ski instructor and patrolman, carpenter, farmer, tree surgeon, and lecturer. In 1970 started with Erewhon. Single.

Paul West—General Manager. In Feb. 1971 began employment with Erewhon. Married with two children.

Christopher J. Connolly—Production manager. Began work at Erewhon in 1970 in Los Angeles. Transferred to Boston in Oct. 1971. Single.

"Employees and facilities: The company maintains a retail store with 2,100 square feet at 342 Newbury Street, Boston, and a second retail store with 2,500 square feet at 8001 Beverly Blvd., Los Angeles. Supporting this store and the Western regional wholesale market is a 14,000 square foot warehouse at 8454 Stellam Drive, Culver City, California.

"The company's headquarters and principal warehousing, packing, and processing facilities are located on 5 floors of two adjoining buildings at 33 Farnsworth Street, South Boston. This location comprises approximately 40,000 square feet. The company presently operates two packaging lines in Boston, 2 shifts daily, and one Packaging line in Los Angeles." The company employs approximately 40 people.

"The Market" Because it has grown with the organic movement and has followed rigorous standards of food purchase and preparation, the company enjoys an impeccable reputation for integrity in the rapidly growing organic foods market. The company believes it is presently the largest supplier of organic foods in the East.

"The market for natural, organic and health foods is a dynamic and rapidly growing one. A recent *Wall Street Journal* article named this industry as one of the ten highest

growth industries for the 1970s. The National Nutritional Foods Association [NNFA] estimates there are about 250 manufacturers and distributors in the industry whose total sales were estimated by Dr. Dennis Wood, of Arthur D. Little, to have grown from \$140 million in 1970 to \$200 million in 1971 and possibly \$400 million in 1972. These products are sold in over 3000 independent stores and by many food chains. Their level of importance is indicated by the recent printing of a separate Sears & Roebuck catalogue for health and organic foods.”

There is a diversity of motivations underlying consumer demand for organic foods. Three categories of demand appear to exist: Cultural, economic, and taste. Organic foods usually taste better than non-organic foods. “The growing public concern for ecology also lies behind the purchase of these foods. Presently many members of such organizations as the Audubon Society, Friends of the Earth, and the Sierra Club purchase organic foods to boycott the farmers and chemical industries whose use of pesticides and artificial fertilizers the groups consider harmful to the environment. The many life styles and philosophies that are loosely grouped as ‘counter culture’ also underlie the motivation to purchase organic foods. Youth predominates in this category, but some spokesmen are such notables as René Dubois and Buckminster Fuller. In its broadest terms, the ‘counter culture’ is a search for a better answer to man’s modern pattern of life. Man’s present life style has led to a dangerous disruption of his environment.”

“In fiscal year 1972 the company attempted a vigorous program of distributor sales aimed principally at broadening its market geographically and increasing sales. This program was successful in increasing sales, but its implementation required a rapid and inefficient expansion of the work force and substantial price discounts on distributor products. By consequence, the company’s overall gross margin contracted, while its operating expenses increased, resulting in a 10-month net loss of \$50,000 on sales of \$2.8 million.” Since that time distributor sales were effectively discontinued and substantial numbers of personnel were laid off. Gross margins have returned to their previous levels.

“Since its founding, the company has never employed a salesman full-time or run a continuous advertising campaign. Sales growth has been largely in response to externally developed demand and limited by capital.”

Photocopies show the following Erewhon-brand labels: Maple granola, Peanut butter, Apple juice, Olive oil, oil of sunflower, corn germ oil, oil of soybean, short grain brown rice (organically grown), whole wheat flour, hacho miso (soybean paste). Photos also show the front and interior of an Erewhon retail store. Address: 6 Central Row, Hartford, Connecticut 06103.

1596. Chico-San. 1972. Products (Document part). In: Midwest Natural Foods Distributors, Inc. 1972. Catalog and price list. Nov. 1. Ann Arbor, Michigan. 58 p. See p. 7-8.

• **Summary:** Rice cakes, Buckwheat cakes, or Millet cakes (salted or nonsalted, 3½ oz). Yinnies rice candy (3½ oz). Rice chips or Corn chips (5 oz). Lima Tamari soy sauce (8 oz, pint, or quart). Miso soybean puree (8 or 16 oz). Sesame salt (2, 4 or 8 oz). Sesame salt (4, 8, or 16 oz). Sea salt, white unrefined (1 lb). Salt plums (4 or 8 oz). Kuzu (wild arrowroot) (2 oz or 4 oz). Wholewheat spaghetti (OG [=organically grown], 8½ oz). Buckwheat spaghetti (8½ oz). Wholewheat macaroni (OG, 12 oz). Buckwheat macaroni (12 oz). Azuki beans (8 oz, 1 lb). Wild ginseng root (½ oz). Wild ginseng powder (25/6-pkts). Ohsawa twig tea (4 or 8 oz). Mu tea–Lima, more ginseng (24/2 or 24/8 pkts). Mu tea–Osaka (24/2 pkts). Green tea, natural leaf (6 oz). Lotus root tea (1 ¾ oz). Rice cream (OG, 1 or 2 lb). Kombu, kelp size (3½ oz). Tooth powder jar (½ jar).

Appliances: Food grater (with or without well). Vegetable knife–square end. Fish knife–pointed end. Mortar (suribachi, small or large). Pestle–wooden. Vegetable press. Oil skimmer for tempura. Vegetable scrub brush (small or large). Soysauce tableserver–glass. Rice paddle–bamboo. Chopsticks–lacquered. Chopsticks–long cooking.

At the bottom is the Chico-San spiral logo. Address: [Chico, California].

1597. Erewhon Inc. 1972. Distributor price list. Boston, Massachusetts. 4 p. Effective December 8, 1972.

• **Summary:** Includes: Three varieties of Wehah Farms organically grown rice in 50 lb bags (“Colusa” and Golden Rose” are both short grain; the third is sweet brown rice). Azuki beans (100 lb bags). Tamari & miso: Tamari soy sauce (8 oz, pints, quarts, half gallon, gallon, 4.7 gallon can). Hacho miso (30 x 1 lb or 44 lb keg). Mugi miso (24 x 1 lb or 44 lb keg). Kome miso (20 x 1 lb or 44 lb keg). Granola. Rice cream (toasted). Cereals: Infant cereal (Koko). Tsampa Tibetan barley cereal. Stone ground flours (incl. Soybean flour, full fat, organic; brown rice flour, organic). Grains & beans (incl. soybeans, organic’ Barley, pearled).

At the bottom of the last page: “Thank you very much for your order. We try to get our distributor orders out as quickly as possible, but you should allow seven to ten days to be on the safe side... When placing orders please call Bill Garrison or Paul Hawken and when checking on shipping dates and rates, please check with Doug Bray. Thank you.”

An illustration at the top left corner of the front page is clip-art of a man cutting barley. Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: (617) 542-1358.

1598. Leung, W-T.W.; Butrum, R.R.; Chang, F.H. 1972. Food composition table for use in East Asia. Atlanta,

Georgia: Center for Disease Control, U.S. Dept. of Health, Education, and Welfare. xiii + 334 p. Dec. No index. 30 cm.
 • **Summary:** Part I. Proximate composition, mineral and vitamin contents of East Asian foods, by Woot-Tsuen Wu Leung, Ph.D. (Nutrition Program, Center for Disease Control, Dep. of Health, Education and Welfare), and Ritva Rauanheimo Butrum, M.S., and Flora Huang Chang, B.S. (Federation of American Societies for Experimental Biology).

Part II. Amino acid, fatty acid, certain B-vitamin and trace mineral content of some Asian foods, by M. Narayana Rao, Ph.D., and W. Polacchi (Food Policy and Nutrition Division, Food and Agriculture Organization of the United Nations).

In Part I, Food Group 3 titled “Grain legumes and legume products” (p. 16-22) gives the composition of the following (100 grams edible portion and as purchased): Adzuki beans (*Phaseolus angularis*; incl. “Azuki-an,” and boiled sweetened). Asparagus bean: See Cowpea, yardlong. Asparagus pea: See Goabean. Bambara groundnut or jugo bean (*Voandzeia subterranea*). Bengal gram: See Chickpea. Blackeyed pea: See Cowpea, catjang. Blackgram: See Mung bean. Broad bean or horse bean (*Vicia faba*; incl. “Fuki-mame” and “Otafuku mame”). Burma bean: See Lima bean. Butter bean: See Lima bean. Catjang pea: See Pigeonpea. Chickpea or Bengal gram (*Cicer arietinum*). Cowpea, all varieties (*Vigna* species). Cowpea, yardlong: See Cowpea, all varieties. Dhal: See Lentil. Dolichos, Australia pea (*Dolichos lignosus*). French bean: See Kidney bean. Goabean [goa bean], asparagus pea, or winged bean (*Psophocarpus tetragonolobus*). Golden gram: See Mung bean. Green gram: See Mung bean. Haricot bean: See Kidney bean. Hindu cowpea: See Cowpeas, all varieties. Horse grain or horse gram or Madras gram (*Dolichos uniflorus*; *D. biflorus*). Horsebean: See Broadbean. Note 1. This is the earliest English-language document seen (Jan. 2005) that uses the word “horsebean” or the word “broadbean” to refer to *Vicia faba*.

Horsegram: See Horse grain. Hyacinth bean or Indian butterbean (*Lablab niger*; *Dolichos lablab*). Indian bean: See Mung bean. Indian butterbean: See Hyacinth bean. Jackbean, common (*Canavalia ensiformis*). Jugo bean: See Bambara groundnut. Kidney bean, French bean, navy bean, pinto bean, snap bean, or string bean (*Phaseolus vulgaris*; incl. “Usura-mame”). Lentil or dhal (*Lens culinaris*; *Lens esculenta*; *Ervum lens*). Lima bean, butter bean, or Burma bean (*Phaseolus lunatus*; *Phaseolus limensis*).

Note 2. This is the earliest English-language document seen (May 2003) that uses the scientific name *Lens culinaris* to refer to lentils.

Note 3. This is the earliest English-language document seen (Jan. 2009) that uses the name “Burma bean” to refer to the lima bean.

Madras gram: See Horse grain. Mung bean, Indian bean, red bean, green gram, golden gram, or blackgram / black gram (*Phaseolus aureus*; *Vigna radiata*; incl. vermicelli, dried starch, starch jelly, instant powdered green or red products with sugar and flour added). Mung bean, black gram or urd (*Phaseolus mungo*; *Vigna mungo*). Navy bean: See Kidney bean. Peanut or groundnut (*Arachis hypogaea*; incl. raw, roasted, with or without shell, salted, parched, seasoned, fried, peanut flour, peanut butter, peanut milk, peanut cake–defatted, peanut cake–defatted and fermented [onchom]). Peas, garden or field (*Pisum* species; incl. parched–salted, “Uguisu-mame”). Pigeonpea, or catjang pea (*Cajanus cajan*; *Cajanus indicus*). Pinto bean: See Kidney. Red bean: See Mung bean. Rice bean (*Phaseolus calcaratus*; *Vigna calcarata*). Soybean and soy products (*Glycine max*; *G. hispida*; *G. soja*; p. 19-21), incl. Whole mature seeds–dried (yellow, black), whole immature seeds dried, whole seeds–salted (black, green, green soaked, fried, fermented {natto}, pickled, roasted), flour of roasted soybeans, defatted soybeans–whole seeds. Soybean products: Curd–unpressed, curd–tofu–raw (plain, kinugoshi, fukuroiri), curd–tofu–fried (moist type, dried type–regular size, dried type–small size, canned, abura age), curd–roasted [grilled], curd–tofu–fermented (home–prepared, jarred), curd–tofu (dried–spongy square, preserved, dried–rope-like, commercial {fermented with chili pepper}–jarred), curd cheese, curd sheet (milk clot sheet {yuba}) (moist type, dried type, pickled in soysauce), curd–pressed–raw (plain, fermented, spiced, strips–semi-dry), miso (Japan) (plain, sweet {5.3% salt added}, salty–light {10.4% salt added}, salty–dark {11.7% salt added}, mame-miso {9.7% salt added}, powdered {18.5% salt added}), paste [jiang] (plain, fermented, red pepper added, sweet, malt), soybean milk (unenriched–unsweetened, “Kaset” {Thailand; canned–concentrated, fluid}, Saridele {a mixture of soybeans, sesame seeds or peanuts, with vitamins and calcium added–Indonesia}), soybean sauce (dark–thick, light–thin, unspecified), tempeh (fermented soybean product, Indonesia), “Budo-mame” (cooked–Japan), Soybean residue [okara] (liquid, powder). Urd: See Mungo bean. Velvetbean (*Mucuna utilis*; *Stizolobium utilis*; incl. dried or mold-treated {tempeh}). Winged bean: See Goabean, Indes.

Food Group 4 titled “Nuts and seeds (p. 23-29) includes: Almonds, hemp seeds–whole, perilla–common (*Perilla frutescens*), safflower seeds, sesame seeds, sunflower seeds (*Helianthus annuus*), watermelon seeds.

Food Group 5, titled “Vegetables and vegetable products” (p. 30-75) includes: Amaranth, mungbean sprouts, seaweeds (many types), soybeans–immature seeds [green vegetable soybeans], soybean sprouts (raw, cooked).

Note 4. This is the earliest English-language document seen (March 2004) that mentions silken tofu, which it calls

(in a table): “Curd, tofu, raw: ‘Kinugoshi,’ Japanese preparation.”

Note 5. This is the earliest English-language document seen (Dec. 2005) that contains the term “flour of roasted soybeans.”

Note 6. This is the earliest English-language document seen (Oct. 2006) that uses the term “Blackeyed pea” to refer to the cow pea. Address: Dep. Health Education and Welfare.

1599. Ajinomoto, Inc. 1972. [Dried miso preparation]. *Japanese Patent 26,719/72*. [Jap]*
Address: Ajinomoto, Japan.

1600. Ebine, Hideo. 1972. Miso in conversion and manufacture of foodstuffs by microorganisms. In: Gyoza Terui, ed. 1972. *Fermentation Technology Today: Proceedings of the Fourth International Fermentation Symposium*. See p. 127-32. Held 5-9 Dec. 1971 at Kyoto, Japan. *
Address: Shokuhin Sogo Kenkyujo, Tokyo, Japan.

1601. Harada, Motô; Nakamura, Y.; Tanimura, A. 1972. Shokuhin-chû no nitorosamine ni kansuru kenkyû. IX. Shokuhin-chû no ashô sanen no bunpu [Studies on nitrosamines in food. IX. Distribution of nitrite in various foods]. *Shoku Eishi (J. of Food Hygiene)* 13(1):36-40. [Jap]*

• **Summary:** Nitrosamines [pronounced nai-TRO-suh-meens] are reaction products from nitrite and amines. Some salt-pickled foods contain considerable amounts of nitrite. But very small amounts of nitrite were found in rice, wheat, and soybeans used as raw materials for making shoyu and miso.

Interest in the safety of nitrites started in about 1970. The following nitrite levels (parts per million) were found in other Japanese foods: Shiouri shiozuki (salt pickled cucumbers) 96, red hot dogs 64-79, niboshi (small dried sardines) 31, ham 29, fish sausage 24. Very low levels were found in fresh bread crumbs 16, and roasted soy flour 15.

1602. Kitaoka, K. 1972. [Soybean miso manufacturing with enzyme preparations]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 218. p. 19-24. (Chem. Abst. 80:81,090). [Jap]*

1603. Lee, K.S.; Chung, D.H. 1972. [Effects of *Bacillus natto* on Korean soybean paste / miso]. *Hanguk Sikip'um Kwahakhoe Chi (Korean J. of Food Science and Technology)* 4:163-68. [Kor; eng]*

• **Summary:** Discusses *Bacillus subtilis*.

1604. Manabe, M.; Ohnuma, Shizuko; Matsuura, Shinji. 1972. Jôzô shokuhin-chû no keikô seibun ni kansuru

kenkyû. II. Miso oyobi miso kôji no afuratokishin osen no yûmu ni tsuite [Studies on the fluorescent compounds in fermented foods. II. Tests on aflatoxin contamination of miso and miso-koji in Japan]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Food Science and Technology)* 19(2):76-80. (Chem. Abst. 81:167,973). [10 ref. Jap; eng]

• **Summary:** Studies were conducted to investigate whether or not miso and miso-koji in Japan contained aflatoxins. 108 samples of commercial miso, 33 of home-made miso, and 28 of miso-koji from almost all the prefectures of Japan were tested for their aflatoxin content. The results showed no aflatoxin on any of them. “But on the thin-layer chromatograms, 3 commercial misos, one home-made miso, and two miso-kojis showed aflatoxin-like fluorescent substances. The extracts of these aflatoxin-like substances were examined by the yolk sac test for their toxicity to the chicken embryo. The results however were all negative.” Address: National Food Research Inst., Ministry of Agriculture & Forestry, Koto-ku, Tokyo.

1605. Mochizuki, Tsutomu; Yasuhira, H.; Hondo, S.; Ouchi, I.; Rokugawa, K.; Itoga, K. 1972. Studies in the changes of several components during miso making. In: Gyoza Terui, ed. 1972. *Fermentation Technology Today: Proceedings of the Fourth International Fermentation Symposium*. See p. 663-68. (Chem. Abst. [1976] 84:29,405f). [1 ref]
Address: Sinshu Miso Research Inst., Nagano, Japan.

1606. Aihara, Cornelia. 1972. *The Chico-San cookbook*. Chico, California: Chico-san, Inc. 126 p. Illust. 22cm. by Nan Schleiger. Reissued in revised form as *Macrobiotic Kitchen* by Japan Publications in 1982.

• **Summary:** All recipes are numbered and pages are unnumbered. Soy-related recipes include: 6. Brown rice in soy sauce. 16. Black [soy] beans and brown rice. 23. Inari-sushi (with agé). 24. Ohagi of 3 colors (with roasted soybean flour and miso). 32. Ojiya (with miso or soysauce). 37. Roasted rice (with black soybeans). 38. Musubi (with miso). 55. Kinako mochi. 76. Soy bean stock. 87. Oden (with agé and soy sauce). 90. Kenchin soup (with agé). 95. Cream of onion soup (with miso). 96. Hacho miso soup. 97. Mugi miso soup. 98. Kome miso. 99. Oil miso. 100. Sesame miso. 101. Walnut miso. 102. Miso salad dressing. 103. Shiguri [sic, shigure] miso (with scallops). 104. Tokiwa miso (with shiitake mushrooms, citron, and walnuts). 105. Oyster miso. 106. Tai miso. 108. Nuka miso zuke (vegetables pickled in rice bran and miso). 121. Miso pickles. 137. Daikon with agé. 138. Daikon with miso. 143. Turnip with sesame-miso. 159. Burdock-miso soup. 162. Burdock with miso. 180. Onion-miso sauce. 182. Scallion-miso. 191. Carrots with miso. 192. Carrots with soy sauce. 200. Dengaku (with miso). 220. Roasted soybeans. 221. Soybean soup. 222. Soybeans with vegetables. 223. Soybeans with miso. 224. Soybean tempura. 225. Mashed

soybeans with tarako (cod fish roe). 226. Soybean croquettes. 227. Soybean potage. 228. Soybean muffins. 229. Kidney beans with miso. 237. Shigiyaki (small eggplants with miso). 241. Eggplant miso pickle. 267. Rolled shiso leaves with miso. 291. Tofu kuzu sauce. 292. Tofu chili-nabe. 293. Tofu with vegetables. 294. Tofu salad. 295. Okara rice. 296. Torimotsu okara (with chicken giblets). 297. Okara soup. 298. Okara croquettes. 299. Egg tofu. 308. Koi-koku (carp soup with miso). 311. Loach soup (with miso). 312. River fish with miso sauce. 320. Mackerel with miso. 335. Coltsfoot with miso. 341. Dandelion miso-ai [miso-ae]. 345. Horsetail with miso-ai. 359. Watercress miso-ai. 361. Nobiru goma miso (with wild onions). 369. Shiromiso shiru [sweet white miso soup]. 371. Nimame (black soybeans). 400. Shoyu bancha (twig tea). 408. Black bean tea. 409. Amasake (homemade from koji rice and sweet brown rice). 456. Amasake manju. 461. Soba with miso-ame. 515. Tekka (with Hacho and/or mugi miso). 516. Seitan (homemade). 517. Soy sauce (homemade). 518. Miso (homemade). 519. Tofu (homemade using nigari). 520. Nigari (homemade). 521. Amasake (homemade from koji rice and sweet brown rice flour).

Cornellia Aihara was born with a heart valve defect. She was told by doctors that she could never bear children and would probably not live past her nineteenth year. She proved them wrong on both counts. In 1955 she came to America from Japan at the invitation of Herman Aihara, a man she knew only through correspondence, and they were married. Within several years their two children were born.

Cornellia has applied herself to the teaching of macrobiotic cooking, childcare, home remedies, and philosophy since 1960. Address: Chico, California.

1607. Aihara, Cornellia. 1972. *The dô of cooking (Ryorido)*. Vol. 2. Summer cooking. Macroguide No. 13. San Francisco, California: George Ohsawa Macrobiotic Foundation. 103 p. No index. 25 cm.

• **Summary:** All recipes in this macrobiotic cookbook are numbered. The section on “Tofu” contains recipes for: 35. Hiya yako [sic, yakko] (cold, uncooked tofu). 36. Kanten tofu (Tofu aspic). 37. Tofu kuzu aspic. 38. Harusame tofu kuzu sauce. 39. Unagi tofu [vegetarian].

The section on “Miso Soy Bean Paste” contains recipes for: 40. Soy bean miso [soybeans sauteed with miso]. 41. Vegetables with miso sauce. 42. Vegetable miso. 43. Green pepper with miso. 44. Deep fried miso balls.

Other soy recipes include: 60. Nori with soy sauce. 62. Kombu in soy sauce. 64. Hiziki tofu salad. 66. Fried koya tofu with carrot (with dried tofu). 71. Cold miso soup. 73. Split pea miso soup. 81. Tahini-tamari sauce. 89. Soy bean surprise [with miso-tahini sauce]. 92. Okara salad.

GOMF was founded in 1971. Address: 1471-10th Ave., San Francisco, California 94122.

1608. Aihara, Cornellia. 1972. *The dô of cooking (Ryorido)*. Spring. Oroville, California: George Ohsawa Macrobiotic Foundation. 125 p. Illust. by Carl Campbell. Index. 21 cm.

• **Summary:** This macrobiotic book is divided into two parts: Eleven chapters followed by 14 sections of recipes. In part one, miso is mentioned on pages 15, 35, and 51 (Condiments and spices). Recipe section IV, titled “Wheat gluten” (p. 79-82) contains recipes for: Wheat gluten. Seitan. Fresh wheat fu. Boiled fu. Fried fu—gluten cutlet. Shish kebab (using 3 strips of cooked fu). French bread (made with gluten water, p. 115).

Recipe section V, titled “Tofu” (p. 83-90) contains recipes for: Tofu making (using 3 cups green soybeans and nigari coagulant; with 11 excellent illustrations). Nigari (from gray sea salt). Quantity tofu preparation (using 10 lb soybeans). Okara or unohana (using “3 cups soybean puree leftover from tofu making”). Tofu with kuzu sauce. Fried tofu. Shinano-agé (Fried tofu with buckwheat). Kaminari tofu (Thunder tofu). Nori-maki (Tofu rolled in nori; with illustration). Age-tofu (Stuffed tofu; with illustration).

Soy-related recipes include: Onion miso (p. 70). Rolled cabbage with tofu (p. 71). Bean sprout miso salad (p. 100; miso is called “mixed soybean puree {half mugi and half kome}.” The sprouts are probably from mung beans). Ganmodoki (Mock goose; p. 109). Gyoza filled with seitan, dipped in a mixture of soy sauce and lemon juice (p. 111-12). Address: George Ohsawa Macrobiotic Foundation, Oroville, California.

1609. Aihara, Herman. 1972. *Miso & tamari. Macroguide (San Francisco: George Ohsawa Macrobiotic Foundation)*. No. 12. iii + 34 p. [3 ref]

• **Summary:** Contents: Preface. Part I: Miso. Introduction, the origin of miso, kinds of miso, ingredients, how to make miso [at home], value of miso, miso in the treatment of tuberculosis and atomic radiation exposure. Part II: Tamari or traditional soy sauce. Introduction, history, chemical change of tamari, how to make tamari soy sauce, how to use soy sauce. Part III: The other soybean foods. Tofu, natto. Part IV: Appendix. Contains recipes.

Note This is the earliest English-language document seen (March 2009) that describes how to make miso at home. Recipes for three types of miso are given: Barley miso, rice miso, and soybean miso. The method is translated from *Miso University*, by K. Misumi (in Japanese). Fortunately, the exact amount of each of 5 ingredients is given, and nine excellent illustrations show the main steps in the traditional process. Unfortunately, the instructions are somewhat vague. Address: San Francisco, California.

1610. Claiborne, Craig; Lee, Virginia. 1972. *The Chinese cookbook*. Philadelphia and New York, NY: J.B. Lippincott Co. xxi + 451 p. Color photos by Bill Adler. Drawings by Barbra and Roderick Wells. Illust. Index. 24 cm.

• **Summary:** Soy related recipes: Coriander and bean curd with sesame sauce (with dried brown bean curd [soy-sauce pressed tofu] and light soy sauce, p. 34). Cold chrysanthemum leaves with sesame oil (with dried brown bean curd and light soy sauce, p. 35). Chicken with black beans and shallots (with fermented, salted black beans, light soy sauce and dark soy sauce, p. 58-59). Note: This is the earliest English-language document seen (Oct. 2008) that uses the term “fermented, salted black beans” to refer to Chinese-style soy nuggets. The headnote to this recipe states: “Fermented, salted black beans have an almost winy flavor, and they give an intriguing flavor to almost any dish in which they are cooked.” Nowhere in this book do the authors state that these black beans are actually black soybeans.

Soy sauce chicken (with light soy sauce and dark soy sauce, p. 59-60). Spicy pork and bean curd (with “6 pads fresh white bean curd,” p. 136). Note: This is the earliest English-language document seen (Oct. 2008) that uses the term “fresh white bean curd” to refer to fresh tofu, or that uses the word “pads” to as the counter for pieces or cakes of tofu. The headnote states: “Bean curd has as many uses in China as cottage cheese does in the Western world. It is one of those neutral dishes [ingredients] like potatoes and snails which adapt well to assertive flavors.”

Ginger beef and bean curd with hot pepper (with “5 pads fresh white bean curd,” p. 188). Steamed fish with bean sauce (with “¼ cup bean sauce, p. 208). Stir-fry shrimps with bean curd (with “5 pads fresh white bean curd,” p. 231). Shrimps in black bean sauce with ginger and scallions (p. 234-35). Note: With “2 tablespoons fermented salted black beans and 2 tablespoons dry sherry or shao hsing wine.” “Combine the black beans with 1 tablespoon of the wine and crush lightly with a spoon.” Thus, “black bean sauce” can be easily and quickly made in the kitchen from fermented, salted black beans.

Clams in black bean and oyster sauce (with fermented salted black beans that are quickly made into black bean sauce as above, p. 243-44). Frogs legs with black beans (with fermented salted black beans, p. 257). Mock Peking duck (with “6 sheets dried bean curd,” p. 302-03. “Bean curd comes in large, semicircular thin sheets [yuba] as well as squares [probably yuba; see below]. Because the sheets are notably fragile, they are frequently broken.” The headnote states: “This dish uses dried bean curd to produce an eminently edible creation that tastes remarkably like roast duck”).

Bean curd and beef ball soup (with “1 pad fresh white bean curd,” p. 318). Whiting and bean curd soup (p. 327-28). Flowery bean curd soup (p. 328-29). Bean curd casserole soup (p. 330-31). Tsa chiang mien (Noodles with minced pork and bean sauce, incl. “½ cup bean sauce,” p. 365-66).

One color photo (facing p. 282) and a numbered key shows many ingredients used in Chinese cooking, incl.: 5. Dark soy sauce. 6. Light soy sauce (both in tall-neck bottles). 16. Fresh white bean curd. 28. Dried brown bean curd [soy sauce pressed tofu]. 31. Dried bean curd sheets [clearly yuba, since light yellowish brown, semi-transparent, subtly wrinkled surface, and very thin]. 32. Fermented salted black beans (small pile).

Chapter 11, titled “Chinese ingredients...” (p. 419-40) contains many interesting terms and definitions, with Chinese characters accompanying each. Soy related are: Dried bean curd sheets [yuba] (“These paper-thin, light brown half circles are very fragile and are often broken; they can be repaired by wetting and overlapping the broken edges. They are sold in packages of 10 and will keep for 3 to 4 months without refrigeration.” Eventually they will turn rancid, since they have a high oil content”). Dried brown bean curd (CC = doufugan; soy sauce pressed tofu). Dried red beans [azuki]. Fermented salted black beans (CC = douchi, dow see. “An ingredient of Cantonese cooking but virtually unknown elsewhere in China, these black [soy] beans, sometimes simply called ‘Salted Black Bean’ are sold in 1-pound cans or in 8- and 16-ounce plastic bags. They will keep for months if stored in the refrigerator in a covered jar”). Fresh white bean curd (CC = doufu). Ground bean sauce (Contains “the same ingredients as Bean Sauce, except the whole beans have been ground to a paste. It is sold in oblong 1-pound cans). Hoi Sin Sauce (“Made from pumpkin”). Red bean curd sauce (“A thick sauce made from soy beans, red rice, and salt water, this is available in 11-ounce oblong cans and also in 12-ounce round cans labeled ‘bean curd’”). Sesame oil. Sesame paste. Sesame seeds. Shao Hsing Wine (made from rice). Soy sauce (CC = jiangyou. Color ranges from light to very dark. The “difference lies more in the color than in the flavor.” Sold in tall-neck bottles ranging for 12-21 ounces. “The soy sauce generally sold in American supermarkets is light soy sauce—it is most suitable used as a dip or in some stir-fry dishes but in general is too light to lend an appetizing color to a dish. Dark soy sauce, usually found only in Chinese markets, is sometimes labeled ‘Black Soy.’ Soy sauce will keep for months and sometimes years without refrigeration”). There follows a nationwide directory of sources for Chinese ingredients.

Also mentions: Eight precious jewel pudding (with “1 cup dried red [azuki] beans, p. 406-07). Red sand rice roll (with 1½ cups dried red [azuki] beans, p. 408-09).

“Craig Claiborne was food editor of *The New York Times* from 1957 to 1971. During this period he was credited by the Chinese-American Restaurant Association of Greater New York with significantly raising the level of public interest in Chinese food, and thus the standard of Chinese restaurant fare.” A large, excellent color photo on the rear dust jacket shows Craig Claiborne and Virginia Lee

preparing a meal together in a kitchen. Address: East Hampton, Suffolk Co., New York (on the eastern tip of Long Island).

1611. Ebine, Hideo. 1972. Miso. In: Proceedings of the [Sixth] International Symposium on Conversion and Manufacture of Foodstuffs by Microorganisms. Tokyo: Saikon Publishing Co. viii + 297 p. See p. 127-32.

• **Summary:** Contents: General description. Characteristics of miso as a food. Advances in miso manufacturing: Application of starters, application of new type cookers and koji fermenters, production of miso with enzyme preparation, production of new type miso (low salt, dehydrated). Problem of mycotoxin.

In 1969 some 552,000 [metric] tons of miso were produced industrially in Japan, employing 180,000 tons of soybeans, 92,000 tons of rice, 19,000 tons of barley, and 75,000 tons of salt. In addition, the amount of home-made miso is roughly estimated at 150,000 to 200,000 tons.

Japanese soybeans are the best for making miso of good quality, followed by Chinese soybeans, then U.S. soybeans. The best U.S. variety is “Kanrich and its related varieties, Mandarin and Comet, which are comparable to the best Japanese varieties.”

Photos show: (1) Sterilization of miso using a long, horizontal machine. (3) Rotary drum fermenter for koji. Address: Fermentation Div., National Food Research Inst., Ministry of Agriculture and Forestry, Shiohama 1, Koto-ku, Tokyo, Japan.

1612. Food and Agriculture Organization of the United Nations (FAO). 1972. A selected bibliography of East-Asian foods and nutrition arranged according to subject matter and area. [Washington, DC]: Food and Agriculture Organization of the United Nations; U.S. Dept. of Health, Education, and Welfare. vii + 296 p. Dec. 27 cm. [1500* ref]

• **Summary:** This book has two title pages and can be cited in two ways. See Leung (1972). Address: Dep. of Health Education and Welfare.

1613. Hesseltine, C.W.; Wang, H.L. 1972. Fermented soybean food products. In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 389-419. Chap. 11. [54 ref]

• **Summary:** Contents: Introduction. Koji. Miso: Preparation of koji, treatment of soybeans (mixing, fermentation). Shoyu: Incl. chemical shoyu. Natto. Hamanatto. Tempeh. Sufu [fermented tofu]. New soybean products made by fermentation: Cheese-type products, fermented soybean milk, an ontjom-type product. 10. Future of fermented soybean foods.

Tables: (1) Demand for whole soybeans in Japan (1964-1967) to make miso, shoyu, and natto. In 1967, only 4.5%

of the soybeans used to make miso were used in the form of defatted soybeans, whereas the same year 91.1% of the soybeans used to make shoyu were defatted. The total demand in 1967 (in 1,000 metric tons) was miso 177, shoyu 169, and natto 47. (2) Chemical composition of soybean foods: Miso (salty light, salty light, soybean miso), natto, soybeans. (3) Annual production of miso (1956-1967). Production of 530,078 tons in 1956 decreased to a low of 453,956 tons in 1962, then rose to 520,510 tons in 1967. (4) Composition of miso in relation to time of fermentation and ratio of soybeans:rice:salt for three types of miso: White miso, light-yellow salty miso, and yellow-red salty miso. (5) Average composition of shoyu made from whole soybeans and defatted soybean meal.

Illustrations (flowsheets): (1) Process for making red miso. (2) Process for manufacture of shoyu. (3) Process for making hamanatto. (4) Tempeh fermentation on a laboratory scale. (5) Preparation of sufu. (6) Preparation of soybean cheese. Address: NRRL, Peoria, Illinois.

1614. Horton, Lucy. 1972. Country commune cooking. New York, NY: Coward, McCann & Geoghegan. 232 + [8] p. Illust. by Judith St. Soleil. Index. 24 cm.

• **Summary:** A nostalgic memoir (for those who came of age at this time) of the world of young Americans in communes in the early 1970s, with many fine illustrations (see p. 27). The author, raised in New York City and educated at Bryn Mawr (Pennsylvania, with a major in classical archaeology), earned her traveling money by working as a live-in maid and cook for a rich “Park Avenue Lady” before embarking on the project that became this book. She hitch hiked to San Francisco, arriving in June 1971, then spent most of the next year visiting 43 communes in 12 states and Canada, and collecting recipes from each. There she found “a New Age of Food Consciousness.” The main topic of conversation and common interest at these intentional communities was not God or sex, but food. This book, with her 150+ favorite recipes, features natural and organic foods (with lapses). Most of the recipes from California and the West Coast are vegetarian, but in New Mexico and eastward (especially New England) she was “surprised to find that vegetarianism was more the exception than the rule” (p. 81). Thus, Chapter 3 is titled “Meat (and one fish).” There are recipes for chicken, fish, deer, goat, beef, etc.

The Introduction notes (p. 15): “The *sine qua non* of commune cooking is tamari soy sauce, an unspeakably delicious fermented Japanese product available in natural foods stores which bears no resemblance to commercial soy sauce” * (Footnote: *”Kikkoman soy sauce, available in supermarkets, tastes like tamari but contains a preservative”).

“1. Soups: The commune soups I sampled were typically of mixed vegetables with a tomato or miso (p. 159) base” (p. 27).

Tamari chickbits (p. 94, with chicken). Note about soy grits (p. 114). Sprouts (p. 135-36, many kinds including alfalfa, mung beans, soybeans, from Terra Firma, Oregon). Miso Almond Sauce (p. 158-59). Tamari gravy (p. 159). Soy-related recipes include: From Chapter 2, "Vegetarian main dishes"—Donna's soyburgers (p. 60-61, with whole soybeans, from California). Soy cheeseburgers (p. 61-62, with whole soybeans, from Moon Garden, Oregon). Suzy's soybean casserole (p. 63-64, from Breadloaf, New Mexico). Baked soybeans (p. 64-65, from Woolman Hill School, Massachusetts). Larry's tofu (soy cheese) (p. 65-68, homemade tofu from whole soybeans, from Om Shanti, Mendocino County, California). Breakfast cereal with roasted, salted soybeans (p. 163). Soy spread (p. 227, with soy flour, from The Motherlode, Oregon). Soy nuts (p. 229-30, baked, soaked soybeans with oil and salt). A photo on the rear cover shows the author, age 27, with long blonde hair, granny glasses, and blue denim overalls. Says Raymond A. Sokolov: "Lucy Horton has done more than collect exotic recipes... she has assembled the crucial artifacts of a movement within The Movement."

Also discusses (see index): Adelle Davis, gluten (wheat), granola, ground nuts, macrobiotic diet, peanuts. Address: Derby, Vermont.

1615. Jensen, J. Stoumann. 1972. Baelgplanten. Frugtens anvendelse og potentiel i menneskelig ernæring. En analyserende og diskuterende oversigt [Leguminous plants. Use of their seeds and its potential for human nutrition. An overview, with analysis and discussion]. Unpublished manuscript. Lyngby, Denmark. 110 p. Forwarded to DANIDA Sept. 1974. Unpublished manuscript. [23 ref. Dan]

• **Summary:** Under East Asian soyfoods, mentions soy sauce, miso, natto, sufu, and tempeh. Address: Dep. of Biochemistry & Nutrition, Technical Univ. of Denmark, Lyngby, Denmark.

1616. Kaneko, M. 1972. Hatchô miso [Hatcho miso]. Okazaki, Japan: Hayakawa Kyuemon Shoten. 8 p. [Jap] Address: Okazaki, Japan.

1617. Kawamura, Wataru; Tatsumi, Hamako. 1972. Miso no hon [The book of miso]. Tokyo: Shibata Shoten. 320 p. Illust. No index. 19 cm. [42 ref. Jap; eng+]

• **Summary:** Contents: Part I: Miso Culture. 1. Chinese jiang and Japanese miso. 2. Origin of miso in Japan. 3. Miso in Nara and Heian periods. 4. Miso in Kamakura period. 5. Miso in Muromachi-Momoyama periods. 6. Miso in Edo period. 7. Modern miso. 8. Value of miso. 9. Topography of miso. 10. About miso fermentation. 11. Miso slang and local words. 12. Haiku, senryu, kyoka and tanka of miso. 13. Classical miso cookery (contains many Japanese miso recipes). Appendix: Historical documents of miso.

Part II: Miso cooking. Preface. 1. Miso soup. 2. Aemono: Tossed with miso dressing. 3. Yakimono: Broiled food. 4. Nimono: Simmered with miso. 5. One pot cookery. 6. Nerimiso: Simmered with miso. 7. Agemono: Fried foods. 8. Miso pickles.

Wataru Kawamura was born in 1899. Hamako Tatsumi lived 1904-1977. Address: 1. 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan.

1618. Kikkoman Shoyu Co., Ltd. 1972. Guide to Kikkoman (Brochure). Noda City, Japan. 10 p. 15 x 10 cm booklet. [Eng]

• **Summary:** Contents: Introduction by Kenzaburo Mogi, president. Shoyu: Its past and present. History. Production method. People everywhere love Kikkoman (with a photo of 19 Kikkoman products). Kikkoman all over the world. Kikkoman in Japan. Note that the product is referred to throughout as "Kikkoman Shoyu" and not "Kikkoman Soy Sauce."

"History: In the 6th century Buddhism came to Japan from China, and with it came a strict ban on the eating of meat. Buddhism also brought a new vegetable-base sauce—a paste made by fermenting various grains—which replaced previous meat or fish-base seasonings. For a thousand years or so the Japanese used this paste as one of their major seasonings. It was not until the 17th century that this seasoning was developed into the shoyu that we know today.

Kikkoman worldwide: Kikkoman Foods Inc. (KFI) was established in 1972 to produce shoyu in America, our largest overseas market. Head office and plant: Walworth, Wisconsin 53184 USA.

Kikkoman International Inc. (KII) was established in 1957 to import and distribute our products in the USA. Head Office: 1581 Webster St., San Francisco, California 94115. Branches: Los Angeles, New York, Chicago.

Japan Food Corporation (JFC) is the largest importer and distributor of oriental foods in the United States. Head Office: 900 Marine St., San Francisco, CA 94124. Branches: Los Angeles, New York, Chicago, Sacramento, San Diego, Washington [DC].

Pacific Trading Co., Ltd. (PT) was established in 1928 in Tokyo to export oriental foods, mainly to the United States. Head Office: 767 Marunouchi Bldg., Chiyoda-ku, Tokyo.

Kikkoman Daitokai (Europe) GmbH is a restaurant chain, established in 1972 to serve mainly Japanese dishes. Head Office: 4 Dusseldorf, Kleverstrasse 46, West Germany.

Kikkoman in Japan. Kikkoman is the leading brand of shoyu in Japan. The second best-selling brand sells only 23% as much shoyu as Kikkoman and the third best-seller only 13% as much. Kikkoman's capital: \$18,500,000. Sales (1972): \$218,000,000. Total production of shoyu (1972):

100,000,000 gallons. Number of employees 4,400. The names of members of the Kikkoman board of directors are given. Kikkoman subsidiaries are Kikko Foods Corp., Mann's Wine Co. Ltd., Seishin Pharmaceutical Co. Ltd., Tone Coca Cola Bottling Co. Ltd.

1619. Kondo, Akitani. 1972. *Nihon no chōju mura, tanmei mura* [Japanese long-life and short-life villages]. Tokyo: Sanrodo. [Jap]*

1620. Kondo, M. 1972. *Chōju mura, Nippon kikō* [Longevity villages: A diary of travels through Japan in search of the secrets of diet and life patterns]. Tokyo: Women's Nutrition University, Publications Dept. [Jap]*

1621. Korean Institute of Science and Technology (KIST). 1972. [Foodstuffs and food additives for industry in Korea]. Seoul, Korea: Ministry of Science and Technology. [Kor]*
 • **Summary:** In 1971 production of fermented soybean foods in Korea (in 1,000 metric tons) was: Soybean sauce: industrial 107, home-made 116, total 223. Soybean paste: industrial 56, home-made 168, total 224. Red pepper soybean paste: industrial 23, home-made 89, total 112.

1622. Kwon, Tai-wan. comp. 1972. *Fermented foods in Korea: Annotated bibliography (1917-1971)*. Seoul, South Korea: Korea Institute of Science and Technology. 185 p. 28 cm. For *Fermented Soybean Products*, see p. 28-85. [248* ref. Eng]

• **Summary:** One of the best sources on soyfoods in Korea. A very well prepared bibliography. Of the 248 references, 83 are related to soy. Most of the documents cited were published in the 1950s and 1960s; only one (p. 28) was published before 1940.

Contents: 1. Fermented vegetable products (*kimchies* [*kimchi*]). 2. Fermented fishery products. 3. Fermented soybean products (soybean koji {meju, maiju, maeju}, soy sauce {kanjang, ganjang}, soy paste {doenjang, dainjang, dwen-jang}, hot soy paste {kochojang, kochuzang}, etc.). 4. Fermented cereal products (alcoholic beverages). 5. Miscellaneous. Appendix. Author index.

Note: Doenjang (Korean soybean paste) is first mentioned on pages 28, 64. Dainjang (Korean soybean paste) is mentioned on page 34. Dwen-Jang (Korean soybean paste) is mentioned on page 42.

Kochojang (Korean red pepper miso) is first mentioned on pages 28, 31, 46. Kochozang (Korean red pepper miso) is first mentioned on page 36. "Red pepper sauce" (Korean red pepper miso) is first mentioned on pages 38, 39. "Red pepper paste" (Korean red pepper miso) is first mentioned on pages 71.

Kanjang (Korean soy sauce) is first mentioned on page 34. Note: This is the earliest English-language document seen (Jan. 2009) that uses the term "kanjang" to refer to

Korean soy sauce. Ganjang (Korean soy sauce) is first mentioned on page 53.

Meju (Korean soybean koji) is first mentioned on pages 35, 41, 44, 60. Maiju (Korean soybean koji) is first mentioned on page 34. Maeju (Korean soybean koji) is first mentioned on pages 73, 83. Chung-Kook-Jang (Korean natto) is first mentioned on page 79. Address: PhD, Head, Food Resources Lab., Korea Inst. of Science and Technology, Seoul, South Korea.

1623. Liener, I.E. 1972. Nutritional value of food protein products. In: A.K. Smith and S.J. Circle, eds. 1972. *Soybeans: Chemistry and Technology*. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 203-77. Chap. 7. [417 ref]

• **Summary:** Contents: 1. Introduction. 2. Protein and amino acid requirements of man: Protein requirements, amino acid requirements. 3. Evaluation of protein quality: Amino acid composition, biological techniques involving animals, protein efficiency ratio (PER), N-balance studies, plasma amino acids, experiments with human subjects, amino acid availability, in vitro techniques (physical tests, available lysine, tests for biologically active components [urease, trypsin inhibitor], enzymatic and microbiological techniques). 4. Nutritional significance of other soybean constituents: Available energy, vitamins (fat-soluble vitamins, water-soluble vitamins), minerals (calcium, phosphorus, zinc, other minerals), unknown growth factor(s). 5. Factors affecting the nutritive properties of soybean protein: heat treatment, supplementation with amino acids, storage, germination, effect of antibiotics, dietary source of carbohydrate. 6. Soybean products used for human consumption: Soybeans as a vegetable, soybean flour, soybean milk, soybean curd, other fractions, protein concentrates, protein isolates (use in infant foods, use in textured foods), fermented products (tempeh, natto, miso). 7. Use of soybean products as protein supplement: As supplement to wheat protein (bread, other baked goods), as supplement to corn, as supplement to rice, use in vegetable protein mixtures, peanut and other oilseed proteins, blends containing corn, other cereals and legumes. Address: Univ. of Minnesota.

1624. Nakano, Sasuke. 1972. *Ryōri no kigen* [The origin of foods]. Tokyo: Nihon Hoso Shuppan Kyokai. 225 p. [Jap]

• **Summary:** The important chapter titled "The natto triangle and miso," by Sasuke Nakao (p. 118-27) discusses natto, its relatives and ancestors in East Asia, and the "natto triangle" theory (with a map). Nakao hypothesized that natto originated in the monsoon area of Southeast Asia, where there are East Asian evergreen forests. He considered Yunnan province in China to be the original center of natto. His theory is based on the observation that there are there are many varieties of non-salted fermented soyfoods and

soy condiments inside the “natto triangle.” Yunnan province in southwest China, Thailand, Myanmar (Burma), Bhutan, Nepal, Indonesia, and Japan all fall within this triangle.

Note: The term “natto triangle” can be misleading, especially for non-Japanese. Natto is the only non-salted fermented soyfood or soy condiment indigenous to Japan. Natto is made by fermenting whole, cooked soybeans with bacteria (*Bacillus natto*, or *Bacillus subtilis*) in a warm place (ideally 104°F or 40°C) for about 24 hours. According to various Japanese legends, natto originated almost 1,000 years ago in northeast Japan when cooked soybeans were placed in a rice-straw sack strapped over the back of a horse. The natto bacteria are found abundantly on rice straw, and the warmth of the horse’s body aided the fermentation. Under these conditions, the fermentation would take place naturally, without intentional inoculation. The “natto triangle” refers to the geographical area within a large triangle in East-, South-, and Southeast Asia—the only place in the world where non-salted fermented soyfoods and soy condiments are indigenous. A number of these—such as tempeh in Indonesia and unsalted soy nuggets in China—are fermented primarily with molds (e.g., *Rhizopus*, *Aspergillus*) rather than bacteria. The triangle has its three corners in northeastern Japan (on the northeast, for natto), northeastern India and Nepal (on the west, for kinema and thua-nao), and Java (Indonesia, on the south, for tempeh).

1625. National Food Research Institute. 1972. National Food Research Institute [Japan]. NFRI, Ministry of Agriculture and Forestry, Shiohama-cho 1-4-12, Koto-ku, Tokyo. 27 p. [144 ref. Eng]

• **Summary:** Contents: Brief history. Budget and personnel. Organization. General survey of the Institute. Major research area. Facilities and pilot plants. Reports and patents. Publications. Scholarship. Location.

In 1934, the Rice Utilization Research Laboratory was established by the national government. The first building of about 330 square meters was completed in 1935 at the present site. In 1944 the title of the Laboratory was changed to the Research Institute of the Bureau of Staple Food Administration, and investigations were directed toward the processing and utilization of unconventional food resources.

“Owing to the change in the food situation in Japan during World War II, the Institute carried out extensive research on the most efficient utilization of the nutrients in various foodstuffs, and on finding new food sources among various agricultural products, so as to meet the serious food shortage. This trend continued through the post-war period as the nation struggled with an even more acute food shortage problem. Fats and oils, fruits and vegetables, and fermented soybean products miso and soybean sauce were added as subjects of research.

“The Institute again changed its name to the Food Research Institute in 1947, and official analysis and

standardization of food commodities were included in its activities... The Institute came to belong to the Food Agency in 1949 and later, in 1961, as a result of the reform in agricultural research administration, it was brought under the administration of the Agriculture, Forestry, and Fisheries Research Council together with other agricultural research establishments.” The name was changed for a third time to the National Food Research Institute in 1970.

T. Watanabe is the Director of the organization. The fermentation research division is headed by H. Ebine, and consists of the following laboratories: Fermentation microbiology (M. Matsuno), fermentation chemistry (T. Ohta), industrial fermentation (H. Ito), mycotoxin (H. Ebine), resources utilization (N. Tsumura). The nutrition research division is headed by S. Kimura.

Note: This institute moved from Tokyo to Tsukuba in Feb. 1979. Address: Shokuhin Sogo Kenkyujo, Tokyo, Japan.

1626. Sakaguchi, Kinichiro. 1972. Development of industrial microbiology in Japan. In: Proceedings of the [Sixth] International Symposium on Conversion and Manufacture of Foodstuffs by Microorganisms. Tokyo: Saikon Publishing Co. viii + 297 p. See p. 7-10. Held 5-9 Dec. 1971 at Kyoto, Japan. [Eng]
Address: Prof. Emeritus, Univ. of Tokyo, Tokyo, Japan.

1627. Sams, Craig. 1972. About macrobiotics: The way of eating. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 61 p. No index. 18 cm. [7* ref]
• **Summary:** Chapter 5, titled “Other Important Foods,” introduces miso and tamari, and gives recipes for: Miso soup. Miso spread (with tahini). Miso gravy. Tamari broth. Tamari spread. Black soybeans are discussed on page 35, and a recipe for their use is given. The tenth printing appeared in 1985. A Spanish-language edition was published in 1983 in Madrid. Address: (London).

1628. Sankosha Kateibu. comp. 1972. Maruhi tôfu ryôri hyaku-sen [One hundred top secret tofu recipes]. Tokyo: K.K. Sankosha. 165 p. Illust. No index. 18 cm. [Jap]
• **Summary:** Contents: Part I: 100 selected tofu recipes. How to cook tofu. Tofu cooking techniques/hints. How to drain tofu. How to treat/handle tofu. Tofu boiled/simmered/cooked in sauces. Broiled tofu. Steamed tofu. Pickled, raw, boiled, tossed tofu. Sauteed tofu. Deep fried tofu. Part II: Information about tofu. History of tofu. Tofu was born in China. Origin of the name “okabe.” Other names for tofu. Various types of tofu. Names of tofu. Cruel tofu recipes. How to make tofu recipes tasty. Japanese cooking and the taste of tofu. The relationship between tofu and miso soup. How to make good tofu miso soup. How to cut tofu for miso soup. Good ingredients for tofu miso soup. Good ingredients for tofu soups. To what degree are you

interested in tofu? Tofu is the best healing food. Tofu is valued overseas. If you don't eat tofu, you lose! How to make tofu. Changes in the prices of tofu products. Did you know...? Address: Tokyo, Japan.

1629. Smith, A.K.; Circle, S.J. 1972. Historical background (on soybeans and soybean foods). In: A.K. Smith and S.J. Circle, eds. 1972. *Soybeans: Chemistry and Technology*. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 1-26. Chap. 1. [53 ref]

• **Summary:** Contents: 1. Introduction. 2. U.S. history: Introduction of soybeans, processing for oil, soybean oil. 3. Soybean meal and protein: Animal feed industry, poultry industry, industrial uses. 4. Soybean production. 5. Oriental history: Ancient history, Oriental fermented foods (shoyu, miso, tempeh, onjom, natto, hamanatto, tao tjo [Indonesian-style miso], kochu chang, ketjap), Oriental nonfermented foods (soybean milk, tofu), wedge press. 6. Soybeans and world food problems: Green Revolution, protein supplements (high protein food formulations, AID funded), amino acids, CSM, cottage industries.

Concerning industrial uses (p. 8-9): Soybeans rose in popularity as an agricultural crop in the USA at a time when other crops such as corn, wheat, cotton, and tobacco were being produced in surplus quantities. Soybeans took over much of the acreage vacated by these crops. "At that early period it was the hope of many leaders of agriculture, government, and industry that much of the oil and protein of the soybean could be diverted from the food and feed industries into industrial products such as paints, varnishes, soap stock, plastics, adhesives, plywood glue, paper coating and lamination, paper sizing, textile fibers, and other uses... In 1936 the US organized the Regional Soybean Industrial Products Laboratory for this purpose. These new industrial uses were expected to help relieve the problem of farm surpluses... In 1935 the Glidden Company built the first plant for the isolation of industrial grade soybean protein (transferred to Central Soya in 1958). The largest use of industrial grade protein is in the paper-making industry, for coating and sizing of paper board.

"After World War I, soybean meal, because of its low cost, replaced casein as an adhesive for Douglas fir plywood glue, where it still retains a substantial part of the market for the interior grade product."

"While soybean proteins have several important industrial applications, especially in the paper industry for coating and sizing paper, which are expected to continue for years to come, the original dream of an ever-expanding industrial market [for soy proteins] has faded. In the polymer market it appears that for most applications the proteins cannot be made competitive with the increasing number of low cost, high quality synthetic resins... It is generally recognized that the increasing demand for

proteins for feed and food will greatly surpass the anticipated industrial uses."

A graph (p. 1) shows: Soybean production in the United States for seed, 1940-1970. Address: 1. Oilseeds Protein Consultant, New Orleans, Louisiana; 2. Director, Protein Research, W.L. Clayton Research Center, Anderson Clayton Foods, Richardson, Texas.

1630. Smith, Allan K.; Circle, Sidney J. eds. 1972. *Soybeans: Chemistry and technology*. Vol. 1. Proteins. Westport, Connecticut: AVI Publishing Co. xi + 470 p. Illust. Index. 24 cm. [500+ ref]

• **Summary:** One of the best and most comprehensive reviews on the subject, with extensive information on modern soy protein products. Each of the 12 chapters is written by an expert on the subject. Volume 2 was never published. Address: 1. PhD, Oilseeds protein consultant, New Orleans, Louisiana; 2. PhD, Director, Protein Research, W.L. Clayton Research Center, Anderson Clayton Foods, Richardson, Texas.

1631. Smith, A.K.; Circle, S.J. 1972. Appendixes: Glossary of soybean terms: Terms used in conjunction with the processing of soybeans and the utilization of soy products. Official standards of The United States for soybeans. In: A.K. Smith and S.J. Circle, eds. 1972. *Soybeans: Chemistry and Technology*. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 438-56. Appendix. [4 ref]

• **Summary:** Glossary: Soybean(s), soybean processor, soybean processing (solvent extraction, mechanical processing, pre-press solvent processing), soybean oil, crude soybean oil, edible crude soybean oil, refined soybean oil, edible refined soybean oil, hydrogenated soybean oil, degummed soybean oil, winterized oil, technical grade refined soybean oil, soybean fatty acids, soybean soapstock, acidulated soybean soapstock, soybean lecithin, break material, sludge.

Soybean products: Ground soybeans, ground soybean hay, soybean hulls, solvent extracted soybean feed, soybean meal, dehulled solvent extracted soybean meal, soybean mill feed, soybean mill run, heat processed soybeans, nitrogen free extract (N.F.E.).

Standard specifications: Soybean chips, soybean cake, 41% protein soybean meal, soybean flakes, 44% protein soybean meal, dehulled soybean flakes, 50% protein solvent extracted soybean meal.

Soybean proteins: Soy flour, soy grits, soybean meal, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, protein, isolated protein, toasting, textured protein products (TPP), meat analogs. Definitions: Soy grits and/or soy flour, isolated soy protein, soy protein concentrate.

Vegetable fats: Margarine, vegetable shortening.

Oriental foods: Soy sauce (shoyu), soy milk, miso, tofu, dried tofu, aburaage, kinako, namaage, ganmodoki, tempeh, natto, yuba, moyashi (soybean sprouts), vanaspati, ghee.

Official standards of the U.S. for soybeans. Soy flour standards. Analytical data range of commercial soy protein. Some U.S. companies marketing soy protein food ingredients. Nitrogen solubility index (NSI). Protein dispersibility index (PDI). Urease activity. Water absorption of soy flour. Address: 1. Oilseeds Protein Consultant, New Orleans, Louisiana; 2. Director, Protein Research, Anderson Clayton Foods, Richardson, Texas.

1632. Spicer, A. 1972. Fungi as protein for food use. In: Proceedings of the [Sixth] International Symposium on Conversion and Manufacture of Foodstuffs by Microorganisms. Tokyo: Saikon Publishing Co. viii + 297 p. See p. 221-23. Held 5-9 Dec. 1971 at Kyoto, Japan. [Eng]
 • **Summary:** Discusses: Incaparina, miso, tempeh. Address: The Lord Rank Research Centre, High Wycombe, Bucks, U.K.

1633. Takeya Miso Hyakunenshi Henshu-bu. 1972. Takeya Miso hyakunen-shi [A hundred year history of Takeya Miso, Inc.]. Suwa, Japan. Takeya Miso. 506 p. 27 cm. [Jap]
 • **Summary:** A very solid, well-researched book with a detailed chronology of the company's history. Takeya is the oldest of Japan's present large miso manufacturers. Address: Suwa, Japan.

1634. Tsuda, T.; Oshita, T.; Kobayashi, K.; Ito, S. 1972. Shōjin ryōri; Daitoku-ji ryōri, Tansen-ji ryōri, Eihei-ji ryōri, Sōji-ji ryōri [Zen vegetarian cookery: From Daitokuji, Tansenji, Eiheiji, and Sōjiji]. Tokyo: Fujokai Shuppansha. 242 p. Illust. 22 cm. [Jap]
 • **Summary:** Written by the head cooks at four of Japan's best known Buddhist monasteries. A second edition was published in 1976. Address: 1. Ikkyu, Daitokuji; 2. Head priest, Tanzenji, Kamakura (Rinzai sect); 3. Eiheiji (Soto sect, Asst. head cook); 4. Sojiji (Asst. head cook).

1635. Yoshii, Hisao; Kaneko, Yasuyuki; Yamaguchi, Kazuo. 1972. Shokuhin bisei-butsu-gaku [Food microbiology]. Tokyo: Gisho-do. [Jap]*

1636. Chico-San Inc. 1972? Chico-San history and outline for future development. Chico, California: Chico-San Inc. 5 p. Undated. Unpublished typescript.
 • **Summary:** A good early history of Chico-San, typewritten on the company's letterhead probably by Bob Kennedy. Atop the letterhead is printed: "Macrobiotic foods, rice cakes, cereals, sea vegetables." "By 1961 eleven macrobiotic families had packed their belongings, left their jobs behind in New York City, and headed for Chico, California, in the heart of the California rice growing

country. In a short time Chico-San, Inc. was formed by some of these people for the purpose of importing foods of superior quality which were not available domestically, and locally producing foods of the highest quality for distribution throughout the United States."

One of the company's first popular products was the "Rice Cake, a light cracker made from puffed up whole grain brown rice. The first "machine," imported from Japan in 1963, made one cake at a time and was a crude, hand-operated device. Soon, three more machines were tied to the original one, still hand operated. Bob Kennedy, Dick Smith, and a few others found it necessary to work twelve hour shifts, and for six and seven days at a time to meet the steadily increasing demand for the unique new cracker. In 1965 pulled shoulder muscles ceased to be a problem when the first semi-automatic Rice Cake machine was put into operation...

"Central to the guiding philosophy behind Chico-San was the search for an organically grown brown rice—the prince of grains. This search ended in 1969 when the first organically grown short grain brown rice was harvested just south of Chico, in Richvale, California. This product, grown under exclusive contract for Chico-San, further enhanced their growing reputation...

"Back in the late fifties and sixties people who were interested in food and health were called 'food faddists', or 'health food nuts.' The food products found in most health food stores at this time consisted of a vast array of vitamin and mineral supplements, super protein concentrates, natural cosmetics, and a scattering of whole grains, few of which were organically grown.

"But little by little products with the Chico-San label found their way onto store shelves. First the Rice Cakes, then natural soy sauce, Miso Soybean paste, Sesame Butter and Sesame Salt, and organically grown Brown Rice became popular...

"In the back room too is Junsei Yamazaki, who emigrated to Chico from Japan in 1963 for the purpose of producing natural soy sauce and miso for Chico-San. These two products make up the greater percentage of the imports from Japan, and are subject to high duties and shipping costs. For 17 years Junsei was a rice farmer in Japan after graduating from Tokyo University with a degree in agriculture.

"Combined with the income from Stage I, Chico-San will be ready to begin Stage III. This stage includes the construction of a plant for the production of, at first, miso, and then soy sauce." Address: Chico-San Inc., 1262 Humboldt Ave. Chico, California 95926.

1637. Eden Foods, Inc. 1973. Catalog. 211 South State St., Ann Arbor, Michigan. Undated. Probably published about Jan. 1973.

• **Summary:** Eden Foods is now carrying Organic Soybean Flakes from Arrowhead Mills (34% protein), and a line named “Hopi Seeds” which includes soybeans, sunflower seeds, pumpkin seeds, almonds, and cashews—each dry roasted with tamari, each in a consumer snack-sized pack weighing 1.3 to 1.5 oz. Note: This “Hopi Snacks” line was developed by Eden.

Other interesting products include “Michigan Grain” (soybeans, corn, rye, and wheat grown organically in Michigan, mostly by Tom Vreeland in Ypsilanti), umeboshi plums in salt brine, and kuzu arrowroot. Address: Ann Arbor, Michigan.

1638. Misko, Karin. 1973. *SeVa longevity cookery cookbook*. Columbus, Ohio: Soybean Press. viii + 113 p. Jan. Illust. by Judy Post. Edited by Debora Bittaker. Introduction by Catherine Bicknell. 22 cm. [45 ref]

• **Summary:** A vegetarian cookbook from the SeVa Restaurant, printed on 100% recycled paper. Soy-related recipes include: Soy milk (p. 18). Tahini milk. Nut milk (p. 18). Miso vegetable soup (p. 25). Variety muffins (with soy flour, p. 36). Salad for Virgo (with green soybeans and roasted soybeans, p. 45). Miso-tahini sauce (p. 51). Brown sauce (with Tamari soy sauce or miso, p. 51). Stuffed cabbage rolls (with green soybeans and brown rice, p. 65). Campfire dinner (with cooked or canned soybeans, p. 65). Soy bean loaf (p. 73). Roasted soybeans (dry roasted, p. 84). Granola (with Soya granules, p. 84).

The glossary (p. 98-100) includes listings for cold-pressed oils, fertilized eggs, ginseng, gluten [sic, gluten], miso, seaweed, tamari soy sauce, and tofu (“a bean curd made from soybeans which is used for flavoring soups and sauces.”)

Brand name products we use (p. 101; Note: Each contains soya). Smokene, Soyagen (spray-dried soymilk), and Vegeburger (Loma Linda Foods). Soya Granules (Fearn Soya Foods). Stripples (bacon alternative from Worthington Foods). Vege-Sal (Modern Products; flavored with soy bean extract). “Smokene: smoked seasoning spice made from toasted soy powder, dried yeast, soy sauce and condensed wood smoke. It is used for flavoring soups and sauces.” Address: Columbus, Ohio.

1639. Spiral Foods Inc. 1973. Mail order price list. Chico, California. 2 p. Jan. 35 cm.

• **Summary:** This single-sheet catalog and price list, photocopied front and back with black ink on tan paper, contains numerous background illustrations and the includes the following foods: Snacks: Rice cakes, corn chips, Yinnies—brown rice candy sugarless. Condiments: Lima tamari soy sauce—aged naturally over two years, Miso—soybean puree, entirely natural, rice malt vinegar, sesame butter, sesame oil—cold pressed, sesame salt, sea salt white unrefined, salt plums, kuzu—wild arrowroot starch.

Grains, flours, seeds and beans: Brown rice / sweet brown rice—short grain, organically grown. Black [soy] beans—Japan import. Azuki beans—Japan import, dainagon. Whole grain noodles. Sea vegetables. Beverages. Hygienic goods. Utensils.

Talk with Robert J. Kennedy, founder of Chico-San. 1991. Oct. 3. By about 1966-1967 rice cakes and rice chips (senbei) were beginning to cut a wedge into the mass market nationwide, so Chico-San created the Spiral Foods brand for these mainstream products, keeping the Chico-San brand for the health food market. Address: 1144 West 1st Street, Chico, California 95926.

1640. Winarno, F.G.; Fardiaz, Srikandi; Daulay, Djundjung. 1973. Indonesian fermented foods. Bogor: Agricultural University Bogor. 25 p. Originally presented as a lecture by Winarno to Regional Graduate Nutrition Course, SEAMEO, Jakarta, in Jan. 1973. [11 ref]

• **Summary:** Also titled “Indonesian Traditional Food Processing.” Address: Dep. of Agricultural Product Tech., Bogor Agricultural Univ.

1641. Hansen, Barbara. 1973. Yue Sang—Fishy salad in the raw. *Los Angeles Times*. Feb. 1. p. K11.

• **Summary:** Yue Sang is a Cantonese raw fish salad. At a meeting of the Los Angeles Chinese Women’s Club, Mrs. F. Chow Chan brought jai, a meatless dish, that ordinarily contains 18 ingredients including dried oysters, dried black and grass mushrooms, dried bean curd stick [dried yuba rolls], white lily petals, golden needles, cloud fungus and hair seaweed.”

“To symbolize gold, there were tangerines and jin duey, a deep-fried Chinese pastry stuffed with sweet black bean paste.” Recipes are given for Yue Sang, Lion’s head, and Rock salt chicken. A photo shows five Chinese women, each nicely dressed, gathered around a wok, from which they pick morsels with long chopsticks.

Note: This is the earliest English-language document seen (Sept. 2008) that contains the term “sweet black bean paste.” It can be made with either black soybeans or azuki beans.

1642. Manabe, Masaru; Ohnuma, Shizuko; Matsuura, Shinji. 1973. [Studies on the fluorescent compounds in fermented foods. II. Test on aflatoxin contamination of miso and miso-koji in Japan]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 28. p. 239-43. March. [10 ref. Jap; eng]

• **Summary:** Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 19(2):76-80 (1968). Address: National Food Research Inst., MAFF, Tokyo, Japan.

1643. Manabe, Masaru; Matsuura, Shinji. 1973. [Studies on the fluorescent compounds in fermented foods. III. Degradation of added aflatoxin during miso fermentation]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 28. p. 244-50. March. [14 ref. Jap; eng]

• **Summary:** “Although aflatoxin-like substances were detected in a few samples,” no actual aflatoxin was detected in any of the rice samples.

Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 19(6):268-74 (1972). Address: National Food Research Inst., MAFF, Tokyo, Japan.

1644. Manabe, Masaru; Matsuura, Shinji. 1973. [Studies on the fluorescent compounds in fermented foods. IV. Degradation of added aflatoxin during miso fermentation]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 28. p. 251-55. March. [9 ref. Jap; eng]

• **Summary:** “A certain amount of aflatoxin was added to green miso before fermentation in order to investigate the degradation of the toxin during miso fermentation.” There was some degradation of aflatoxin B1 and G1 in miso during the early stage of miso fermentation, but in the later stage the velocity was remarkably reduced. As a result, more than 50% of aflatoxin B1 and G1 remained in miso after 1 month fermentation. No degradation of aflatoxin B2 and G2 was detected during miso fermentation.

Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 19(6):275-79 (1972). Address: National Food Research Inst., MAFF, Tokyo, Japan.

1645. Yoshikawa, Seiji; Nishimaru, Shinya; Tamura, Shinpachiro; Ishima, Toshio. 1973. [A sampling survey of consumer's image of 104 foodstuffs in Japan]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 28. p. 355-69. March. [3 ref. Jap]

• **Summary:** Soyfoods analyzed in the survey are: 21. Tofu. 22. Natto. 71. Miso. 72, Shoyu.

Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 19(4):165-79 (1972). Address: National Food Research Inst., MAFF, Tokyo, Japan.

1646. Erewhon. 1973. Supplying natural food stores, co-ops and communities (Catalog). Boston, Massachusetts. 10 p. Effective April 6, 1973.

• **Summary:** The number of products in Erewhon's catalog has increased dramatically during the past year. An illustration at the lower center of the cover is clip-art showing a man cutting barley. A message on the inside front

cover is signed “Thank you all, Paul Hawken.” Below his message is a smaller reproduction of the man cutting barley and below it: “Good morning.”

Contents: Grains: Incl. brown rice (short grain, “Colusa,” OG {organically grown}, California; medium grain, “Golden Rose,” OG {organically grown}, California; medium grain, OG, Louisiana; long grain, OG, Texas; glutenous [sic, glutinous] sweet, OG, California). Wheat (Deaf Smith, hard red winter, or hard amber durum, OG, Texas; Ted Whitmer, hard red spring, OG, Montana; soft white pastry, OG, Washington [state]). Barley, pearl. Buckwheat groats. Corn. Millet. Oats. Popcorn. Rye. Cereals: Incl. Rice cream. Soybean flakes (Deaf Smith, OG). Stoneground flours: Incl. soybean flour, full fat, OG, Texas. Sweet brown rice flour, OG. Beans: Incl. Azuki beans (100, 50, or 25 lb). Soybeans (OG, Texas, 60 lb). Seeds and nuts: Incl. Almonds. Peanuts (spanish, split). Sesame seeds. Tamari & miso: Tamari soy sauce (8 oz, pints, quarts, half gallon, gallon, 4.7 gallon can). Hacho miso soy paste (1 lb or 44 lb keg). Mugi miso barley-soy paste (1 lb or 44 lb keg). Kome miso rice-soy paste (1 lb or 44 lb keg). Sea vegetables: Agar-agar, dulce, hiziki, kombu, nori, wakame, wakame root. Tea: Incl. Mu herbal beverage No. 9 and No. 16. Kukicha twig tea. Celestial Seasonings herb teas (39 flavors). Pasta: Wholewheat spaghetti, elbows, flat macaroni, and shells. Granola: Five flavors. Snacks: Incl. Corn munchies (organic corn chips with soy sauce). Chico-San corn chips and rice chips. Soybean oil (5 gallon tin). Olive oil. Peanut oil (organic, pint, quart, or 5 gallon tin). Butters: Almond Butter (Golden Farms, OG). Peanut Butter (Erewhon, old fashioned). Sesame butter. Sesame tahini. Honey (Paradise Valley, unheated, unfiltered, clover or orange). Condiments: Sea salt. Sesame salt. Tekka (vegetable-miso condiment). Unusual foods: Ame (rice and barley malt–glucose syrup). McHenry's sorghum molasses. Kuzu arrowroot. Sauerkraut. Umeboshi (plums pickled in brine). For cleanliness: Dr Bronner peppermint castille soap. Infinity herbal products (shampoo and soap). Natural Living Company (sesame cream shampoo, sesame lotion). Orjene (herbal shampoo). Tom's coco-orange all-purpose soap. For cooking: Knives (vegetable, utility, paring), chopsticks, rice paddle, tea strainer, “soy [sauce] dispenser” (4½ inch), oil skimmer, vegetable brush, suribachi, Chinese wok, Quaker City hand grinding mill. Austria Email iron-enamel pressure cookers. Save-a-Tree canvas shopping bags, shoulder bags, and bike bags. Flyers: Organic Merchants N.O.T. list. The Sugar Story. The Oil Story. The Macrobiotic Way. Macro-Ecology. Packaged in cellophane bags with recipes (1 lb, 1½ lb, and 2 lb): Incl. brown rice, wheat kernels, pearl barley, alfalfa seeds (OG), sesame seeds, pumpkin seeds, sunflower seeds, mung beans (sprouting), soybeans (sprouting or cooking, OG), pinto beans, chickpeas, green lentils, green split peas, split red lentils, morning cereal (6-grain cereal blend), infant cereal

(koko), tsampa Tibetan barley cereal, rice cream, soybean flour (full fat, OG, 24 oz), soybeans (OG, 2 lb).

A long note at the top of this list states: "In our retail store we like to sell 'bulk' whenever possible. But we have found that to many new customers coming into our store everyday, pre-packaged foods such as we are presenting here offer a better introduction to the world of whole-grain cooker. Each package has an appealing 'kitchen-tested' recipe on the front so that new friends unfamiliar with these foods can give them a try. Furthermore, some people prefer to buy packaged foods because they feel for various reasons that food sold exposed is not as clean or pure. There is some truth to that, of course, depending on the store, but in any case we are happy to offer a complete line of Erewhon grains, cereals and flours in attractive, biodegradable cellophane packages. We will be expanding this line of cereals and grains and welcome your comments and suggestions. Please let us know how we can serve you better." Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: (617) 542-1358.

1647. Eden Foods, Inc. 1973. F.O.B. pricelist. 330 Maynard St., Ann Arbor, MI 48108. 3 p. Effective April 15.

• **Summary:** The subtitle reads: "Serving mid-America with natural foods." Eden Foods is now selling the following soy products: Soybean Flakes (25 lb bags, organically grown, from Deaf Smith, Texas [Arrowhead Mills]). Soy Flour (50 lb bags, organically grown, from Deaf Smith, Texas [Arrowhead Mills]). Soybeans (50 lb, organically grown, Michigan). Soy-Rice Shells (15 lb, organic, [probably from Erewhon]). Kome Miso (soy paste with rice, 1 lb and 44 lb). Tamari Soy Sauce. Mugi Miso. Soybean Oil (Erewhon, pints, quarts, and 5 gallons). Corn Munchies (organic corn chips with soy sauce, 4 oz.). Rice Munchies (organic rice chips with soy sauce, 4 oz.). Sunflower seeds roasted with tamari (50 lb).

Other interesting products include: Umeboshi (salt plums pickled in brine, 22 lb keg). Kukicha twig tea. Lotus root tea. Pure & Simple Apple Butter. Sea vegetables (Wakame, kombu, hiziki, nori [dried laver], dulse, agar-agar [kanten sea gelatin]).

Note: This is the earliest document seen (April 2006) that mentions Pure & Simple (as a brand). Address: Ann Arbor, Michigan. Phone: (313) 769-8444.

1648. **Product Name:** Kome Miso (Soy Paste with Rice).

Manufacturer's Name: Eden Foods, Inc. (Marketer-Distributor). Purchased from Erewhon (Boston-Importer). Made in Japan.

Manufacturer's Address: 330 Maynard St., Ann Arbor, MI 48108. Phone: (313) 769-8444.

Date of Introduction: 1973. April.

Wt/Vol., Packaging, Price: 1 lb. plastic bag, or 44 lb keg.

How Stored: Shelf stable.

New Product-Documentation: Eden Foods, Inc. 1973. April 15. F.O.B. Pricelist. "Kome Miso, soy paste with rice."

Eden Foods, Inc. 1974. Feb. 1. Wholesale prices, FOB. "Kome Miso, rice-soy paste (Erewhon)." This is the first time the word "Erewhon" appears after miso. It looks like Erewhon was requiring Eden to add it—which may have caused bad feelings.

1649. Rice, William. 1973. The fair-skinned soybean. *Washington Post*. May 10. p. E1, E16.

• **Summary:** The title of the continuation of the article on p. E16 is "The treasures beneath the surface of the fair skinned soybean." Mirror, mirror on the wall... The soybean is the fairest vegetable of all, for its dull yellow surface covers a treasure of protein and other nutrients. It is presented in many guises: "tofu (used in Oriental cooking as bean curd), green (fresh) soybeans (prepared as fresh limas, or eaten blanched or raw when very young), dried soybeans (eaten as peanuts or used as other dried beans in cooked dishes), soybean flour (can be mixed with other flours but lacks gluten and can therefore replace only 15 per cent or so of wheat flour in recipes), soy sauce (essential in Oriental cooking and mistakenly used in the manner of ketchup by many Americans 'eating Chinese'), tamari (pure soy-preferred by vegetarians), miso (fermented soybean paste), soybean milk (liquid or powdered), soybean grits and flakes, lecithin (supplement to control cholesterol build-up) and some others. Soybeans have long been available in health food stores."

Rising beef costs have led to the use of "textured vegetable protein" as an "extender" in ground beef products. Contains 4 recipes using whole dry soybeans or soy flour.

1650. Ewald, Ellen Buchman. 1973. Recipes for a small planet: The art and science of high protein vegetarian cookery. New York, NY: Ballantine Books. xi + 366 p. May. Foreword by Frances Moore Lappé (Hastings-on-Hudson, New York). Illust. by Diane Coleman. 18 cm.

• **Summary:** Lacto-ovo-vegetarian recipes based on *Diet for a Small Planet* by Frances Moore Lappe. The protein content is given for each recipe. Also contains information on complementary proteins. The author was born in 1946.

The chapter on protein complementarity discusses combinations of rice, wheat, peanuts or cornmeal with soy (in the form of whole beans, grits, flour, or tofu). A chart on protein / calorie comparisons gives the number of calories per gram of usable protein including the following: Defatted soybean flour 11, soybean sprouts 12, low fat soybean flour 12, tofu 15, full fat soybean flour 18, soybeans 20, gluten flour 23; Note that all these are relatively low in calories per gram of usable protein. By comparison: Hamburger 15, brown rice 69, cornmeal (whole, ground) 80.

Many recipes in this book contain small amounts of soy flour or grits, or soy sauce. Recipes containing significant amounts of soy include: All-protein crunchy granola (with soy grits, p. 48-49). New granola (with soy flour, p. 52-53). Orange pancakes with orange sauce (with soy flour, p. 58-59). Soy-sesame peanut spread (with roasted soy flour, p. 67). Peanut paté (with whole soybean and soy sauce, p. 70-71). Hot and sour soup (with tofu, p. 83-84). Soybean stew (p. 85). Peanut, tofu and sesame soup (p. 86-87). Exotic barley stew (with miso, p. 87-88). Cabbage soup for a meal (with soybeans, p. 91-92). Curried rice salad (with soybeans, p. 98-99). Gado gado (with tofu, p. 102-03). Soy-peanut marinade (p. 106). Dairy rich sauce (with tofu, p. 115). Chiles rellenos en casserole (with soybeans, p. 126-27). Herbed soybean bulgur casserole (p. 128-29). Garbanzo and cheese loaf (with miso, p. 133-34). Fesenjon-spiced ground beans (with soybeans, p. 135-36). Bean stroganov (p. 140-41). Crusted cauliflower (with soy flour, p. 143-44).

Breads and other baked goods (each with soy flour or grits, p. 195-274): Whole wheat soy bread. Wheat grits bread. Triple rich bread. Unusual pickle or olive juice bread. Cornmeal wheat bread. High rising bread. Spicy rye bread. Limpa bread. Oat rye soy bread. Caraway rye bread. Sourdough whole wheat bread. Egg and yogurt bread (SD = sourdough). Sun seedy oatmeal bread (SD). Four grain bread (SD). Nut and seed bread (SD). Mixed grain bread (SD). Crunchy nut muffins. Spiced pear muffins. Basic complementary muffins. Oatmeal muffins. Sour orange muffins. Pancake, waffle, or camping bread mix. Sourdough corn bread. Quick wheat soy bread. Quick molasses bread. Quick coconut bread. Cheese-filled coffee cakes. Walnut-and-raisin filled coffee cake. Orange coffee cake. Chocolate coconut cookies. Pumpkin cookies or bars. Fruit bar crunch. Honey almond bars. Banana spice bars. Gingerbread.

Cooking beans (p. 309-10, including soy and azuki/ aduki). Putting more protein in your family's diet (Appendix F, p. 326-31).

Glossary (p. 339-44) discusses miso, soy flour, soy grits, tofu ("Tofu is soybean cheese, also known as bean curd... Some supermarkets carry tofu, and you can also get it in health food stores and oriental groceries and restaurants..."). Address: Berkeley, California.

1651. Oberdorfer, Don. 1973. Now even soybean curd seems lost to Japanese. *Washington Post*. June 29. p. D11.

• **Summary:** Tokyo. Last night the USA announced an embargo on soybean exports—a big surprise and shock in Japan. Now even tofu, the ubiquitous and much-enjoyed soybean curd, will become more expensive. Soybeans are very important in Japan as a source of both food (beancurd, miso soup, soy sauce, etc.) and feed. 60% of the cooking oil in Japan is soybean oil. The USA supplies more than 90% of Japan's soybeans, and they are a major item of trade.

1652. Sickler, Roberta. 1973. *Ritual of the hearth: A cookbook of 20 menus and 117 unique vegetarian recipes in praise of life*. New York, NY: Macmillan Publishing Co. x + 195 p. Illust. by the author. 26 cm.

• **Summary:** The recipes are grouped by season. Soy-related recipes include: Snow pea soup (with 3 bean-curd cakes [tofu] (each about 3 inches square by 3/4 inch thick), soy sauce, and hoisin sauce, p. 4). Green broth (with bean cake [tofu], p. 84). Tofu (homemade from soy flour and lemon juice, p. 86-87; "Tofu is a rich, delicate curd from soybean. It is especially good for summer, served cold with raw vegetables, or in hot soups or sauces. Tofu is made fresh daily in many Oriental neighborhoods, and sold in the form of small squares. It can be made at home quite successfully."). Tofu and summer vegetables (with "1 3/4 cups tofu curds, or 3 tofu cakes, cubed," p. 87). Soy bechamel sauce (with soy flour and Tamari soy sauce, p. 130-31; "We use dark Tamari soy sauce because it is aged slowly in wood and has a light, deep flavor."). Soy burgers (with whole soy beans, soy oil, soy sauce, miso paste, and soy flour, p. 183-84).

1653. *New York Times*. 1973. Japanese upset by U.S. soybean curbs. July 7. p. 27, 32.

• **Summary:** Many Japanese are angry at President Nixon for his ban on exports of soybeans last week. Japan obtains 92% of her soybeans (nearly 3 millions tons a year) from the USA. These soybeans are needed, however, to meet shortage of cattle feed in the USA. Last Monday in Washington, DC, officials replaced the embargo on soybeans with a system of export licenses. Meanwhile, the price of soybeans has skyrocketed.

Japanese use soybeans in many foods, including "miso soup, a soybean broth." Tofu (soybean curd) and fish are the two most important sources of protein for Japanese, according to Kuniyoshi Takagi, managing director of the Federation of Tofu Makers' Associations. Makers of soy sauce say the USA has supplied all of the 240,000 tons of soybeans the industry consumes each year, according to Kaoru Ito, managing director of the Japan Soy Sauce Brewers Association. There was even concern at the restaurant Sasa-no-Yuki (snow on bamboo sprouts), which serves only tofu in 12 varied dishes; a full tofu dinner of 8 tofu dishes costs not more than \$3.00.

The Japanese government, deeply upset, placed soybeans at the top of a list of controlled commodities under a new regulation (that went into effect today) against hoarding and price manipulation. Japan's "stocks of soybeans stood at 400,000 tons at the end of May, and are expected to drop to 200,000 tons by Sept. 30, and be exhausted by Oct. 31 if there are no further imports," according to a spokesman for the Ministry of International Trade and Industry.

While the Ministry of Agriculture and Forestry urges the U.S. government to insure that Japan has a steady supply of soybeans, Japanese officials are also “looking for other sources and accelerating programs to increase local production.”

A bar graph shows: (1) U.S. soybean exports to the world: In 1971–420 million bushels worth \$1.3 billion. In 1972–441 million bushels worth \$1.5 billion. In 1973 (first 5 months)–248 million bushels worth \$1.3 billion. (2) U.S. soybean exports to Japan: In 1971–98 million bushels worth \$311.1 million. In 1972–109.4 million bushels worth \$375.4 million. In 1973 (first 5 months)–62.5 million bushels worth \$347.7 million.

1654. Product Name: Dehydrated Miso.

Manufacturer’s Name: Chico-San Inc. (Importer). Made in Japan.

Manufacturer’s Address: P.O. Box 1004, Chico, CA 95926.

Date of Introduction: 1973. July.

How Stored: Shelf stable.

New Product–Documentation: Chico-San Products. 1973. July. p. 13. “Dehydrated Miso.” This is imported barley miso “dehydrated by our own, low-temperature process that protects the enzymes which are abundantly present in this wonderful food. Use dehydrated miso as you would ‘moist’ miso, only less of it.”

1655. Chico-San Inc. 1973. Chico-San Inc. products: A catalog of unique foods. P.O. Box 1004, Chico, CA 95926. 26 p. Revised July 1973.

• **Summary:** Soyfoods imported from Japan include Lima Soy Sauce, Soybean Puree (Miso), and dehydrated miso. They also sell black [soy] beans.

Rice-based products include: Yinnies Grain Syrup (“a low cost natural sweetener made from whole grain barley and organically grown brown rice,” in a 12 oz. jar; a photo shows the jar and label); a 3-page description tells how the product is made and gives its composition (maltose is the key natural sugar); recipes are included. Yinnies (“A traditional Oriental grain candy. The ingredients are organically grown brown rice and barley. No sugar or artificial sweeteners are used.”). Rice chips with buckwheat. On the label of the Yinnies confection product the following statement appears: “The rice for the Yinnies is grown and harvested exclusively for and under the direct supervision of Chico-San by Wehah Farms of Richvale, California.” A similar statement appears on the Rice Chips label.

Corn Chips. Rice Cakes (3 types, each with brown rice and sesame seeds: Plain, with Millet, or with Buckwheat). San-Wich Rice Cakes–Unsalted (Ingredients: Brown rice [organic], sesame seeds, Chico-San yinnies syrup (brown rice and barley), various sea vegetables, and kuzu).

One section (p. 9-10) is titled “How Chico-San guarantees Oriental-type, organically-grown brown rice.” The words “Reprinted from *Health Foods Business* magazine” and “Wehah Farms” have been carefully deleted from the text of this article!

This is the revised edition of an earlier catalog. “Chico-San products have gained increasing acceptance throughout the country since their introduction in 1960.” The booklet contains 8 pages of recipes, including: Sesame-miso spread for bread or dips. Black soy beans (p. 21). Wakame miso soup. Note: This is the earliest macrobiotic recipe seen which uses the term “Black soy beans” instead of “Black beans” to refer to black soybeans. Address: P.O. Box 1004, Chico, California 95926.

1656. Harper, Anne. comp. 1973. Soybean processing and utilization: A partially annotated bibliography. Jakarta, Indonesia: Lembaga Ilmu Pengetahuan Indonesia (Indonesian Inst. of Sciences), Jl. Tjilik Ditiro 43, Jakarta. vi + 56 leaves. 30 cm. [440 ref. Eng]

• **Summary:** Contents: Preface (by Prof. Sarwono Prawirohardjo, Chairman, ASEAN Permanent Committee on Science and Technology). Introduction: The soybean (*Glycine max*), soybean meal and oil, food uses, industrial uses, scope of the bibliography (“excludes references to non-alimentary utilisation of soybeans” and to “references to alimentary utilisation where the harvested plant has not undergone processing by either fermentation or oil extraction”), terminology of soybean processing (soybean meal, soy flours and grits, solvent extraction, miscella, desolventizer-toaster, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, soy protein concentrates, soy milk, Saridele, yuba, soybean curd [tofu], aburage, koritofu [kori-dofu, dried frozen tofu], soy protein isolate, protein fibre products {spun, spinnerettes}, extrusion-expansion products, fermentation products {ontjom, *Neurospora sitophila*, soysauce, shoyu, *Aspergillus oryzae*, koji, moromi, tamari, koikuchi, natto, miso, tempeh, *Rhizopus oligosporus*, soybean cheese, sufu, *Mucor sufu*}, *Zygosaccharomyces*).

General (p. 1). Fermentation products (p. 2-16). Soybean oil, meal, and protein (p. 17-42). Nutrition (p. 43-56). Note: 500 copies were printed. Address: Indonesia.

1657. Eden Foods, Inc. 1973. Wholesale prices. P.O. Box 100, Ann Arbor, MI 48107. 3 p. Catalog. Effective Aug. 1. • **Summary:** The products are very similar to those in the April 1973 catalog. Address: Ann Arbor, Michigan. Phone: (313) 769-8444.

1658. Erewhon. 1973. Supplying natural food stores, co-ops, schools and communities (Catalog). Boston, Massachusetts. 12 p. Effective Aug. 20, 1973.

• **Summary:** The structure and design of this catalog is quite similar to the previous one of April 6, however some new products and sizes have been added. The illustration and note from Paul Hawken are similar. OG = Organically grown. products: Cereals: Soybean flakes (Deaf Smith, OG, 25 lb). Stoneground flours: Soybean flour, full fat, OG, Texas, 50 lb. Beans: Azuki beans (100, 50, or 25 lb). Soybeans (OG, Texas, 50 lb). Tamari & miso: Tamari soy sauce (8 oz, pints, quarts, half gallon, gallon, 4.7 gallon can). Hacho miso soy paste (1 lb or 44 lb keg). Mugi miso barley-soy paste (1 lb or 44 lb keg). Kome miso rice-soy paste (1 lb or 44 lb keg). Pasta: Wholewheat shells (with rice and soy flour, 15 lb). Snacks: Corn munchies (organic corn chips with soy sauce). Hopi Seeds (all dry-roasted with tamari, 1.38 oz or 25 lb): Almonds, cashews, pumpkin seeds, soybeans, sunflower seeds. Vegetable oil, pressed and unrefined: Soybean oil (pint, quart, 5 gallon tin). Condiments: Tekka (vegetable-miso condiment, 3 oz). For cooking: Soy [sauce] dispenser (4½ inch). Packaged in cellophane bags with recipes (1 lb, 1½ lb, and 2 lb): Soybeans (sprouting or cooking, OG, 1 lb or 2 lb) stoneground soybean flour (full fat, OG, 24 oz), soybeans (OG, 2 lb). Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: (617) 542-1358.

1659. Hawken, Paul. 1973. Erewhon: A biography. The view within. *East West Journal* 3(8):11-16. Aug.

• **Summary:** An early, critical history of Erewhon, written without any capital letters [all lowercase], expressing the viewpoint of one of its early, important, and very innovative presidents. “Arrogant” is a term often used to describe the attitude of the people running the company. A store by the name of “Erewhon” opened in May 1966 on Newbury St. in Boston, first manned by Evan Root, then Paul Hawken. “On Thanksgiving day 1968 we opened a new store down the street [at 342 Newbury St.] which still exists today. At that time we were doing about \$250 a day and the rent on the new store, with utilities, totalled over \$1,000. It was a chance we took, a big chance, and seemed to set the pattern for many to come. The decision to place our economic life on the line was based on growth. By then Erewhon had grown to be six people, and all of us felt in our bones that we had a tiger by the tail. A sort of giddy optimism pervaded the new store, abetted by all of us working 12 to 20 hours a day—Bruce Macdonald, Jim Docker, Jean Allison, Bill Tara (later to leave for Chicago, Illinois), and Roger Hillyard. The intensity was so thick you could scoop it up and bag it. All of us felt like passengers on a very fast vehicle bound for unknown places. Business was increasing very rapidly and it seemed we could do no wrong. Time moved very quickly and I was soon to leave for Japan to establish a source of imported foods. My position as to coming back was ambivalent, so Roger Hillyard was appointed head in my absence. Bill Tara, who had set up

Food for Life in Chicago on the tenth floor of a downtown office building, left for Los Angeles with Aveline [Kushi] and set up another Erewhon due to Aveline’s prodding. It was later to prove to be our worst mistake and almost led us to bankruptcy.

“While I was away, roaming around Japan looking for pure foods and wise men, Roger [Hillyard] and others were busy establishing a wholesale business based primarily on the products that were being sent back from Japan. In retrospect, those times were chaotic, and I do not think the chaos let up until four years later, the spring of 1973. The chaos was (as I think back upon it) caused by thinly veiled ambition clothed in a stylishly cut suit of concern for our biosphere and guts. Perhaps this was a reflection of our urgent need to make up for years of bad living, bad ideas, and trash foods. In any case our actions were hasty, well-intentioned, very salty, and somewhat crude, but like a moldboard plow, we just kept coming.

“Chico-San saw us coming and promptly freaked out. They were very dismayed by their loss of New York business as our wholesale market developed. Chico-San had given us the impression in a number of personal conversations that they encouraged our self-reliance and particularly the importance of Japanese foods. Bob Kennedy, the head of Chico-San, candidly admitted that they lost money on imported items and they were able to stay in business only because they sold rice cakes. So it came as quite a surprise to us when they reversed their attitude. They began to express doubts about our motives and ability to procure good foods. Their attitude seemed to change into one where they were the ‘official’ food company, and that was that—appointed by the crown as it were. I can certainly see now how our brashness and youth did nothing to allay their doubts. In retrospect I have much sympathy, while realizing also that they did little to establish a real dialogue.

“Chico-San was formed by middle-aged people who split from New York City after Ohsawa walked into one of their meetings one night stoned on Scotch [whiskey] and announced the bomb was going to drop. This was during the Cuban [missile] crisis and there were many who shared that fear. They formed a well-organized caravan of families and trekked across the United States in a trip that got national coverage. Their purpose was to find the one place in America that was safest from radioactive fallout and also ideal for growing rice. Eureka! Chico, California. No one was more surprised than the local residents. The rift that opened between Erewhon and Chico-San has never closed.”

Hawken then describes the struggle to get organically grown brown rice from Wendell and Homer Lundberg of Richvale, California, starting in the fall of 1969. Bob Kennedy, who had worked for years trying to find a farmer in the area who would grow rice for Chico-San, signed an exclusive 5-year contract with the Lundbergs. “He had to

just about sign his life away... in order to guarantee that the farmer would not lose money in case of a severely short crop.” Chico-San would not sell the rice to Erewhon, so Hawken contracted with a farmer in Arkansas. “It was ironic because a year later the Lundbergs almost went out of business trying to get rid of all that organic rice that Chico-San had contracted for but could not buy.”

Hawken returned to Boston in Dec. 1969, then was fired by Aveline Kushi. He left and worked in San Francisco with Fred Rohe at New Age Natural Foods. Hawken returned to Erewhon in Boston in the summer of 1970.

In 1970 the “natural foods boom” started and swept Erewhon along with it. “If there is one person who is ‘most’ responsible for Erewhon being here today and not bankrupt, it is John Deming, who brought a sense of joy and happiness wherever he went in the company. He assumed the manager’s position at the retail store and made it the finest part of the company. His positive attitude was in contrast to the apprehension that all of us shared about the future. He gave Erewhon some money without which we would surely have failed. On his twenty-fifth birthday John came into a trust which sort of blew his mind. He had known nothing about it. He wanted to just give it to Erewhon, but it is on the books as a loan. It came just in time to pay back overdue creditors and panting bank officers.”

A table (p. 16) shows Erewhon, Inc’s. sales and sources of supply in 1966 and then in 1973. In 1966 Erewhon had about 200 retail customers. The company bought Koda rice from Sam Rabinowitz; imports from Chico-San, Infinity Co., Japan Foods Corp., and Wing-Wing; Lima (Belgium) products from Merit; grains and flours from Better Foods; and flour from Walnut Acres [founded by Paul Keene].

In 1973 in Boston the warehouse served about 200,000 customers (incl. 200 retail natural food stores, 43 Star Markets, 50 co-ops, 25 schools, 9 distributors, 10 restaurants, and 5 bakeries), and the store about 10,000 customers. In Los Angeles, the warehouse served about 75,000 customers (incl. 150 retail stores, 20 co-ops. 3 bakeries, and 10 distributors) and the store about 5,000 customers. A produce company in Los Angeles was supplied by about 40 organic farmers, and sold to 20 retail stores. Concerning soy products, Erewhon bought organically grown soybeans from Lone Pine in Arkansas [Carl Garrich of the Lone Pine Rice and Bean Farm], and soy oil from California. From Muso Syokuhin in Japan they imported tamari, and kome and hacho miso [plus azuki and black beans]. From Mitoku, Inc. they imported tamari and mugi miso.

Suppliers of organically grown grains included: Short, medium, and sweet rice (Wehah Farms, California). Medium rice (Willow Farms, Louisiana). Spring and durum wheat; flax (Ted Whitmer, Montana). Long rice (Jerry Ladds?, Texas). Winter wheat (Frank Ford, Arrowhead

Mills, Texas). White wheat (Lewis Cox & Bill Ingram, Washington state). Buckwheat (Penn Argyl, Pennsylvania). Corn (Bill Stockett, Texas). Millet (Chuck Moses, North Dakota). Oats (Fruen, Minnesota). Rye (Mike Skinner, Colorado). Peanuts (Chas. Warnken, Texas).

Note 1. This is the earliest document seen (March 2006) that mentions Mitoku, or Muso Shokuhin.

Note 2. This is the earliest document seen (March 2006) that mentions Food for Life (started by Bill Tara in Chicago). Address: [President, Erewhon].

1660. Ohsawa, George. 1973. Practical guide to Far-Eastern macrobiotic medicine. Herman Aihara, editor. The George Ohsawa Macrobiotic Foundation Inc., 1471–10th Ave., San Francisco, CA 94122. xi + 260 p. Aug. 21 cm.

• **Summary:** This book has a red, white, and black cover with a round yin-yang (*t'ai chi*) symbol on it. The first English translation from French of Ohsawa’s 1956 “Guide pratique de la médecine macrobiotique d’Extreme-Orient.” Contents: Forward [sic]. Preface. Introduction. Theory of macrobiotic medicine. Curing sickness. Cure the man. Letters from students of macrobiotic medicine. Appendix.

Information on soyfoods is found on the following pages: Tamari bancha (syoban, p. 85, 102). Miso (fermented soybean puree, p. 85). Tekka (miso, p. 87, 95). Tofu plaster (p. 88, 110-11, 125-30). Miso soup (p. 96). Koi-koku (Carp soup with miso, p. 99). Aburage (Age, p. 99). Deep-fried vegetable tofu (ganmo, p. 99). Vegetable with ganmo. Dried radish with age (p. 100). Yin/yang soboro (with miso, p. 101). Scallion miso. Onion miso. Shigure miso (p. 103). Pheasant nituke [nitsuke] (with miso, p. 104).

The forward [sic] by Herman Aihara, editor, notes: “This book, a compilation of several books and writings of George Ohsawa, attempts to give the whole scope of macrobiotic medicine to everyone. The main part is treatment for sickness. However, treatment without understanding of principles and a good attitude is dangerous, therefore, the theory of macrobiotic and other articles were added. The book, like its predecessor, *The Unique Principle*, is unique not because of its name and contents, but rather in how it was translated, edited and published.

“The first part is a translation taken from Japanese books such as, *A New Dietetic Cure, How to Cure Sickness and a Sick Man*, and *Vegetarianism*. The second part is a translation from the French edition of *Practical Guide to Far-Eastern Medicine* which was done by Ann Harris. Noboru Muramoto was consulted to suit remedies to present-day American needs.

“Cornellia Aihara translated *Cooking for the Sick* which was written by Lima Ohsawa. *Massage and Palm Therapy* are based on notes taken by Cynthia McCluskey at Mirimichi Summer Camp, 1972. Photos of Cornellia demonstrating external treatments were taken by Fred

Pulver. *The Manual of Macrobiotics* is a contribution of Nina Bond who took notes at George Ohsawa's lectures in New York at Summer Camp held about ten years ago.

"The third part is a translation from French and Japanese by Fred Pulver, Lou Oles and Herman Aihara.

"The last part is again taken from several articles appearing in past issues of *The Macrobiotic* magazine. The Appendix is taken from a translation of the French edition of Ohsawa's *Practical Guide to Far-Eastern Medicine*."

The preface, by George Ohsawa, states: "I am very happy to give you this short, simplified translation of my book, *Cure—Following the New Way of Eating*. It was originally written in Japanese, and is now in its 465th edition. I want to share with you the practical application of Macrobiotic healing that I have been teaching for almost 40 years—leaving aside the conceptual aspects covered in my other books and classes.

"Herein is the synthesis of my medical philosophy, which is nothing but the biological, physiological and dialectic interpretation of Far Eastern philosophy—the principles of the Order of the Universe and the Order of Man. For 30 years I have been writing on both the practical and theoretical sides of this question and have published more than 20 books and thousands of articles. But at this time I wish to limit myself to giving easily accessible information.

"My medical philosophy, the way of eating and the art of longevity and rejuvenation, is so simple and inexpensive that anyone can follow it any time, anywhere. If you decide to cure yourself before all else, you can forget about the bitter, painful and costly suffering that results from medical, physical, psychological and religious therapies.

"This system depends on you alone. No reliance on other people or on artificial means—everything depends on how you eat."

In the first chapter titled "How did I find macrobiotics? The principle of life," Ohsawa continues: "I was born at Sagano, Kyoto, Japan in 1893. My mother could not produce enough milk and I was a weak baby. I was told by mother that I almost died five times before I reached the first birthday. My family was poor. Father was a principal of an elementary school of a small village before I was born. Then my parents moved to Kyoto where he became a policeman. Mother worked at home to help finance—making strings for kimonos. Mother was an industrious woman. She studied Western science and culture through Yuzuru Nijima who was the founder of the Doshisha University. She died at the age of 30 from tuberculosis, leaving two sons. I was 10 and a younger brother was 6. Two sisters had died earlier due to the wrong diet which my mother introduced in our family through her study of Western science and culture.

"From that time we lived sad days as poor orphans. I was an apprentice in a Buddhist temple as a disciple. However, I soon started to vomit blood like my mother and

sisters did. At 18, I had to give up my school, medicine, eggs and meat because I was too poor to continue such expensive living. I lived in the lowest living condition. In other words, I lived with brown rice, radish pickle and salt plum even though I was told that my sickness—tuberculosis—required eggs and meats by the doctors and my mother who gave us milk, eggs and bread every morning (which was violating natural order). We were punished for this violation. Such a diet destroyed our family's health. I, however, resented that I could not afford to continue such a diet because I didn't know the fact that such a diet was the cause of mother's and sisters' death and my sickness. If I could have afforded to continue that diet, I would have died at that time. I am so grateful that I was poor...

"Curing all my diseases and re-establishing my health at the age of 20, I realized that food is the source of life. After realization of this important fact, I decided to devote my life to preaching this doctrine..."

"I traveled to France for the first time in 1914. Since then I have returned a dozen or more times."

1661. Haggerty, Donna. 1973. Re: Tekka [miso]. Letter to Lorenz Schaller, So. Pasadena, CA 91030, Sept. 28—in reply to inquiry. 1 p. Typed, with signature on form.

• **Summary:** "Tekka was discontinued because of lack of sufficient demand." Address: Spiral Foods Inc., 1144 West 1st Street, Chico, California 95926.

1662. Aonuma, Tatsuo; Yasuda, A.; Yuasa, T.; Arai, A.; Mogi, K.; Yokotsuka, T. Assignors to Kikkoman Shoyu Company, Ltd. (Noda-shi, Chiba-ken, Japan). 1973. Method of preparing soy and miso-paste. *U.S. Patent* 3,764,708. Oct. 9. 8 p. Application filed 11 Aug. 1971. [1 ref]

• **Summary:** "A method of preparing soy and miso-paste of superior flavor and taste and of high quality, which comprises treating the starting soy-beans and/or carbohydrates with a current of superheated steam at a gauge pressure of 4-8 kg/square cm and a temperature of 200°C to 280°C for a time not exceeding 15 seconds. The treated soybeans are quickly exhausted into the atmosphere at atmospheric pressure."

The examples use either defatted soybean flakes or granular soybeans. Both the present invention and the conventional method contain 17.55 gm of common salt per 100 ml of soy sauce. Products from the present invention and the conventional method contain (in gm/100 ml) respectively total nitrogen (1.808/1.680), amino nitrogen (0.890/0.828), glutamic acid (1.484/1.376), alcohol (2.08/2.01), and yield of nitrogen (89.42%/82.93%). Address: 1. Kashiwa; 2-5. Noda; 6. Nagareyama. All: Japan.

1663. Brown, Edward Espe. 1973. *Tassajara cooking*. Berkeley, California, and London: Shambhala. 256 p. 24 cm. Introduction by Zentatsu Richard Baker-Roshi. Series:

A Zen Center Book. Illust. by Norval Delwyn Carlson. A Zen Center Book. Index. Oct. 23 cm.

• **Summary:** This friendly, nicely illustrated natural foods vegetarian cookbook is also about the spirit of Zen Buddhist practice. The chapter on “Beans” (p. 121-26) begins with a sort of eulogy: “Beans. What suffering the word evokes. Beans. When you couldn’t afford meat. Oh beans! When you went camping. Beans! Beans are not meat, they’re beans: garbanzo, kidney... Soy—which rarely remains as a bean... Beans are the overlooked jewels of the vegetable world. They sell at dirt cheap prices and are one of the best protein buys around... Beans take some getting used to, some familiarity. It’s easy to say ‘beans don’t agree with me,’ without having given yourself a chance to agree with them.”

Soy-related recipes include: Oriental dressing (with soy sauce, p. 72). Cooking beans (p. 122-23; if presoaked, pressure cook soybeans for 20 minutes at 15 lb pressure. If not presoaked, for 25 minutes. For cooking without pressure, presoak, bring to a boil without salt, and simmer for 2 hours). Soy-sweetened beans (p. 124; “the Japanese version of an American standby”). Nut-battered beans. Chili beans (p. 125). Blanco beans. Soy beans with hijiki & carrots (p. 126). Five thing beans (p. 126). Easy Oriental dressing (with soy sauce, p. 172). Soy sauce mayonnaise (p. 173). Tahini salad dressing (with soy sauce, p. 174). Seasoning soups (with soy sauce or miso, p. 179). Miso stew (p. 206). Potato-bean bake (p. 211). Basic recipe for burgers (with cooked, ground soybeans, p. 234). Soyburgers (p. 235-36).

Tassajara Zen Mountain Center was founded in 1967. An illustration of the Center cooking in a large skillet graces the cover of this book, which by July 1978 was in its 9th printing. Address: Green Gulch Zen Farm, California.

1664. Ilany (Feigenbaum), J. 1973. Soybean food for today and tomorrow. *Gordian (Hamburg)* 73(10):390-91. Oct.; 73(11):428-30. Nov.; 73(12):464-65. Dec. [21 ref. Eng; ger]

• **Summary:** “This is a short review of what is chiefly known at present of this wonderful bean, which only a few years ago, constituted a strange and exotic food.” Contents: Introduction. Composition and nutritional value. Green soybeans. Sprouted soybeans. Soybean flours. Isolated proteins. Soy-food products of the Far East: Kinako, soymilk, yuba, “tofu or curd–soycheese,” aburage, natto, Hamanatto, tempeh, miso, shoyu or soy sauce. Soybean oil. Lecithin.

Concerning tofu: Tofu made in the regular way “is called ‘Fresh Tofu.’ It does not keep long, even under refrigeration, unless it is further processed. For this purpose it may be canned, frozen, fried, smoked, or fermented.”

Note: This is the earliest English-language document seen that uses the term “soycheese”; it refers to regular tofu.

1665. Taira, Harue. 1973. Heat destruction of amino acids in soybean products. *JARQ (Japan Agricultural Research Quarterly)* 7(4):267-73. Oct. [11 ref]

Address: Food Analysis and Nutrition Div., National Food Research Inst., Ministry of Agriculture & Forestry, Koto-ku, Tokyo.

1666. Eden Foods, Inc. 1973. Wholesale prices, F.O.B. P.O. Box 100, 310 W. Ann St., Ann Arbor, MI 48107. 2 p. Catalog. Effective Nov. 1.

• **Summary:** The products are very similar to those in the April 1973 catalog. But a new soy product is Wheat-Soy Grits (50 lb). Other products include “Umeboshi salt plums,” and Kelp powder (10 lb, bulk [from California]). Address: Ann Arbor, Michigan. Phone: (313) 769-8444.

1667. Chapin, Damaris. 1973. Home pickling. *East West Journal* 3(11):23. Nov.

• **Summary:** Describes how to pickle vegetables in a bed of miso and rice- or wheat bran (nuka), or in a bed of miso alone. Illustration shows a wooden crock labeled “Miso Soybean Paste.”

1668. *Macrobiotic (The) (Chico, California)*. 1973. Miso making with white rice koji. No. 92. p. 22.

• **Summary:** Koji is rice or wheat, barley, etc. which has been treated with a mold called *succaromises* [sic, *Saccharomyces* is a yeast genus]. Koji rice (only white rice unfortunately) is available in Japanese food stores. If you can’t find it, one can ask their local natural food store to order some from the manufacturer—Fujimoto & Co., 500 West Street, Salt Lake City, Utah 84101.

One recipe for quick (yin) miso calls for 18 pounds soybeans and 18 pounds koji, 5 gallons water and 9 pounds salt. This amount will go in a ten gallon stone crock. In Japan, one twenty gallon barrel of miso feeds five persons for one year.

1669. Saito, Y.; Ito, K.; Kawano, K.; Endo, H. 1973. Koso-zai riyô no miso jôzô ni tsuite [Miso manufacturing using enzymic preparations]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 236. p. 20-30. (Chem. Abst. 82:169,030p). [12 ref. Jap]*

Address: 1,3,4. Fukushima-ken, Aizu Wakamatsu Kogyo Shikensho Shokuhin-bu; 2. Nishimata Miso Shoyu Jojo K.K.

1670. Aihara, Cornelia. 1973. The *dô* of cooking (Ryorido). Vol. 4. Winter cooking. Macroguide No. 16. San Francisco, California: George Ohsawa Macrobiotic Foundation. 120 p. Illust. by Carl Campbell. 21 cm.

• **Summary:** All recipes in this macrobiotic cookbook are numbered.

Soy-related recipes include: 29. Nikomi Oden (with stuffed agé). 32. Boiled tofu (yutofu). 35. Furofuki daikon [with orange miso]. 36. Miso soup. 40. Kenchin soup [with tofu]. 47 Miso zoni, and white miso zoni. 87. Soy bean nishime. 89 & 90. Koji pickles. The section titled “Amasake” (p. 97-104) describes how to make it using sweet [glutinous] brown rice, then how to use it as a sweetener in various recipes: Amasake manju (steam cake). Amasake roll. Amasake karinto. Amasake cookies. Amasake cake. Amasake donuts (unyeasted or yeasted). Amasake crescents. Amasake wedding cake with frosting.

Also contains detailed, illustrated instructions for making and cooking with mochi (p. 23-30). A number of recipes contain fish and there is a picture of a cooked fish on the cover. Address: 1471–10th Ave., San Francisco, California 94122.

1671. Aihara, Cornelia. 1973. *The dô of cooking* (Ryorido). Vol. 3. Autumn cooking. San Francisco, California: George Ohsawa Macrobiotic Foundation. 100 p. Illust. by Carl Campbell. 21 cm. Revised ed. 1977.

• **Summary:** Interesting recipes include: Buckwheat noodle gratin (with tofu, p. 29). Udon with adzuki (p. 32). Endive rolled with agé (deep fried tofu, p. 33). Fu vegetable cream cooked (with wheat gluten cakes, p. 34). Carrots and onions miso (p. 37). Vegetable miso (p. 38). Sliced kombu nitsuke (with koya [dried-frozen] tofu, p. 38-39). Vegetable stew–Chinese style (with agé and frozen tofu, p. 41). Adzuki bean soup (p. 46). Creamed miso soup (p. 46). Kenchin soup (with vegetables and tofu, p. 47). Stuffed agé with sauce (p. 49). Thick tamari soy sauce (p. 50). Tahini-tamari sauce (p. 50). Mock meat sauce (with miso, p. 51). Chrysanthemum leaves with tofu (p. 63). Unagi-modoki (mock eel, with tofu, p. 64). Chick pea vegetable nitsuke (with koya tofu, p. 71). Wheat gluten and seitan (p. 71-74, incl. homemade wheat gluten, fresh wheat fu, boiled fu, fried fu–gluten cutlet, shish kebab with fu). Autumn dish (with adzuki beans and tamari, p. 72). Address: 1471–10th Ave., San Francisco, California 94122.

1672. Andersen, Lynn. 1973. *Rainbow Farm cookbook*. New York, NY: Harper & Row. 222 p. Illust. Index. 24 cm. Preface by Allen Gordon.

• **Summary:** This vegetarian cookbook, which has a macrobiotic flavor, is from Rainbow Farm, located on over 300 acres of mountain land in Phoenicia, New York. Soy-related recipes include: Basic miso broth (p. 34). Miso vegetable soup #1. Miso soup #2 (p. 35). Soy butter dressing (made with 2 cups each oil and water, 3 tablespoons soy flour, and the juice of 2 lemons, p. 57). Miso vegetables (p. 67). Carrots and onions with tekka (miso, p. 67). Miso-onion spread (p. 76). Miso rice (p. 85). Tahini-miso spread (p. 108). Tahini-miso spread with vegetables (p. 108). Tahini-miso spread with seeds (p. 108).

Tahini-tamari spread (p. 108). Miso balls (p. 111). Soy butter (or whipped soy cream, p. 111). Soy milk (with a blender, from soy beans, p. 118). Soy milk (without a blender, from soy flour, p. 118). Soy burgers (from okara, p. 119). Soy loaf (with cooked soy beans, p. 120). Tofu “(Chinese Soy Bean Cakes)” (curded with Epsom salt, p. 120). Miso sauce #1 and #2 (p. 126). Hiziki and tofu ([hijiki], p. 132). Egg noodles (with wheat and soy flours, p. 144). Soy milk with whole beans (p. 205). Soy milk with soy flour (p. 205).

A glossary of “New or Unfamiliar Foods” (p. 212-14) includes good descriptions of tamari, miso soy bean paste, kuzu, and tekka. Address: Phoenicia, New York.

1673. Carroll, Anstice; Vona, Embree De Persiis. 1973. *The health food dictionary with recipes*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. Illust. by Vincenzo de Persiis Vona.

• **Summary:** The foods, listed alphabetically, include: Adzuki (p. 1-2). Beans, dried (incl. soy beans, p. 17). Gluten flour (p. 74-75, incl. Gluten soy bread). Miso and Miso butter (p. 101). Morromi (p. 102). Mu Tea (p. 102). Nori (p. 106). Oil, vegetable (p. 113-14, incl. lecithin, peanut oil, olive oil, always refrigerate vegetable oil after opening; “Vegetable oils can (and should) be substituted for hydrogenated fats such as margarine, shortening, and lard in many recipes”). Peanut (p. 119-21). Peanut butter (p. 121-22). Soy grits (p. 156). Soy milk powder. Soy oil. Soy sauce (p. 156-57). Soybean (p. 159, incl. Soybean salad). Soybean, roasted (p. 160, incl. recipe for making at home). Tofu (p. 174-75, incl. recipe for Tofu-vegetable soup). Umeboshi (p. 175).

1674. Cowan, J.C. 1973. *Processing and products [soybeans]*. In: B.E. Caldwell, ed. 1973. *Soybeans: Improvement, Production, and Uses*. Madison, Wisconsin: American Society of Agronomy. xviii + 681 p. See p. 619-64. Chap. 20. [52 ref]

• **Summary:** Contents. 1. Introduction. 2. Processing for oil and meal: Preparation of flakes, solvents, extraction, desolventizer-toaster, degumming. 3. Conversion to edible oil products: Refining, bleaching, deodorization, hydrogenation. 4. Edible fat products: Salad and cooking oils, status of flavor stability, shortenings and margarine oils, lecithin. 5. Essential fatty acids and atherosclerosis. 6. Industrial uses of oil. 7. Meal for livestock and poultry: Nutritional aspects, factors affecting use of meals. 8. Edible protein products: Soy flour, concentrates and isolates, textured protein products (textured soy flour or textured soy protein fibers made into “meat analogues” resembling chicken, bacon, etc.). 9. Fermented and specialty foods: Tofu, soybean milk (an intermediate step in the manufacture of tofu), miso, shoyu (tamari, light-colored shoyu), sufu, tempeh, hamanatto, and natto.

Soybeans flow through a crushing plant as follows: First, they are cracked to release or loosen the hull and to break the cotyledon into about 4 parts. Shakers and aspirators separate the hull from the cracked cotyledons and rollers flake them. "Purified petroleum hydrocarbons known as hexane extract the oil from the flakes and the solvent is recovered. Moistened flakes are heated to inactivate the antinutritional factors and are converted to feeds for livestock and poultry. A small proportion of the flakes goes to a wide variety of soybean protein products including flour, isolates, and concentrates."

Tables show: (1) Utilization of soybean in U.S. in million pounds, every 5 years from Oct. 1933 to 1970 (Kromer 1970). (2) Use of soybean meal in the USA for feeding livestock and poultry (million tons). In 1969, the estimated amounts used were as follows: Cattle 3.43. Hogs 1.69. Other livestock 1.73. Total livestock: 6.85. Broilers 3.07. Hens and pullets 1.28. Other poultry 1.10. Total poultry 5.45. Total livestock + poultry 12.30. Note that cattle are the single biggest users. (3) Bleaching soybean oil (process, % clay and type, change in Lovibond color rating). (4) Effect of bleaching, citric acid, and light exposure on soybean salad oil. (5) Specifications for soybean oil. (6) Effect of linolenate content on flavor of soybean oil at elevated temperatures. (7) Composition of certain edible oil products from soybean oil and related products (salad oil, hydrogenated-winterized soybean salad oil, hydrogenated soybean oil liquid shortening, plastic shortening types I and II). (8) Changes in iron and copper content of soybean oil in commercial refining. (9) Properties of all-purpose and high-stability shortenings from all-hydrogenated vegetable oils and blends of animal fat and/or vegetable oil (iodine value, melting point, % linoleic acid, solid fat index { % solid at temperatures indicated}). (10) Typical analyses for mellorine and cookie and confectioner's fat. (11) Analytical data for typical margarine oils low and high in polyunsaturates (iodine value, melting point, % linoleic acid, solid fat index { % solid at temperatures indicated}). (12) NSPA-tentative lecithin specifications (NSPA, 1969-1970). (13) Composition of soybean lecithins. (14). Approximate composition of soybeans and meal products (whole bean, cotyledon, hull, hypocotyl, meal {cake-extruded, flakes-solvent extracted, dehulled flakes-extracted, mill feed-separated hulls, mill run-separated hulls}). (15) Amino acid analysis of soybean meal (44% protein and 49% protein {dehulled}) and corn. (16) Amino acid analysis of blends of soy flour with cereals and milk (Inglett 1968; Corn soy milk {CSM}, Millet soy milk, Wheat soy milk, etc.). (17) Partial formulas for young swine and boiler rations in percent total rations. (18) Partial formulas for dairy feeds (14% protein). A supplement to forage or roughage. (19) Soybean grits and flour-screensize. (20) Composition of soy flour. (21) Composition of 4 types of soy protein concentrates. (22)

Uses for high-protein soy products (protein 70 [concentrates] and protein 90 [isolates]). Note: This is the earliest English-language document seen (Dec. 2004) that uses the term "protein 90" to refer to a soy protein isolate. (23) Amino acid analysis of fractions derived from dehulled extracted flakes (Rackis et. 1961, 1970). (24) Effect of cooking in salt solutions on texture of structured granules. (25) Composition and use (1,000 metric tons in 1964 and 1967) of soybeans for traditional foods in Japan (Use of whole soybeans in 1967 in 1,000 metric tons: Miso 169. Shoyu 15. Natto 47. Tofu 329. Total 642. Use of defatted flakes or grits in 1967 in 1,000 metric tons: Miso 8. Shoyu 154. Natto 0. Tofu 77. Total 284).

Figures show: (1) Flowchart: Processing of soybeans to oil and meal using hexane extraction. (2) Illustration: A modern soybean processing facility (aerial view, Central Soya, Inc.). (3) Schematic diagram / flowchart: Manufacture of edible soybean oil products (salad oil, salad and cooking oil, shortenings, margarines, liquid shortening). (4) Illustration: A continuous deodorizer for soybean oil. (5) Graph: Effect of prolonged storage at 100°F on flavor score of hydrogenated-winterized soybean oil or soybean salad oil (nitrogen packed, air packed). (6) Illustration: Continuous chilling and working equipment for margarine production (Votator Div., Chemetron Corp.). (7) Flow diagram; Conversion of emulsions of margarine oils and ripened milk to conventional stick, whipped stick, and tub margarines (Votator Div.) (8) Chemical structure of prostaglandin-E₂, a fatty acid with hormone activity. (9) Diagram: Vapor-desolventizer- deodorizer for soybean flakes (Blaw-Knox Co.). (10) Flowchart and diagram: Operations with extruder-cooker. (11) Flow diagram: Manufacture of protein 70 [soy protein concentrate]. (12) Schematic diagram: Manufacture of soy protein isolate (Protein 90). (13) Photo: Chicken-simulated soy protein "meat" in three forms (Swift Edible Oil Co.). (14) Photo: Protein tow containing 16,000 monofilaments spread apart to show its fibrous nature; other tows in background (General Mills, Inc.). Address: NRRL, Peoria, Illinois.

1675. Dubawsky, Rebecca. 1973. *Cooking with grains and vegetables*. Los Angeles, California, and Boston, Massachusetts: Order of the Universe Publications. Distributed by Tao Books. 29 p. Undated. Illust. No index. 28 cm.

• **Summary:** This 1973 edition differs from the original 1967 edition as follows: (1) On the cover, in the upper left corner, is an illustration of a man bent over working in a rice field. The title is written in the lower right corner rather than in the upper left. The subtitle "Booklet one-A beginning" and the name and address of the publisher (in the lower left corner) have been omitted. (2) On the inside front cover, near the bottom, is written: "Distributed by Tao Books, 8454 Steller Dr., Los Angeles, Ca. [California]"

90230. Tel.: (213) 837-2739 and 303B Newbury Street, Boston, Massachusetts 02115.” (3) On the next page are two illustrations apparently taken from early sources (clip art): A full head of wheat with a long awn extending upward from the husk enclosing each grain. Two pumpkins on the vine with leaves above them. Below that: Library of Congress No. 73-127918. (4) Next comes a second title page, with silhouettes of rice plants at the left. (5) Next is a page stating: “The teaching of Aveline Kushi has made the information that follows possible.” Below that: “Rebecca Dubawsky.” To the left is another silhouette of grasses. (6) Next is a full-page of clip art showing a German chalet in the background, with three farmers working in a field in front of it, and a cart pulled by two oxen in the foreground. (7) Table of contents (p. 5). (8) Two stalks of grain. (9) The preface (p. 7) by Michio Kushi, October 20, 1967. (10) Three full heads of different types of grain. (11) Meals (p. 9).

(12) The last numbered page is 29, which has illustrations of a rice plant standing in water and a head of rice. (13) After that is “The Order of the Universe Publications” which contains descriptions of one periodical (*The Order of the Universe*) and five books and booklets (*Cooking Good Food*; *Cooking with Grains and Vegetables*; *Food for Spiritual Development*, by Michio Kushi; *Spirals*; and *Book of Do-In Guide Pratique*, by Jacques de Langre). (14) At the bottom of the last page: “Printed in U.S.A. by Jacques de Langre, 7557 Sunset Blvd., Hollywood, Calif. 90046.” Address: Boston, Massachusetts.

1676. Ford, Marjorie Winn; Hillyard, Susan; Koock, Mary Faulk. 1973. *The Deaf Smith country cookbook: Natural foods for family kitchens*. New York, NY: Macmillan Publishing Co. (Collier Books). London: Collier Macmillan Publishers. xiv + 352 p. Preface by Frank Ford. Illust. Index. 24 cm. [7 ref]

• **Summary:** A pioneering natural foods cookbook, produced and copyrighted by Arrowhead Mills, Inc. of Hereford, Texas. Soy-related recipes include: Roasted soybeans (p. 42-43). Miso soup (with wakame, p. 53). Tamari bouillon (p. 57-58). *Todo en la caldera* (with soybeans and miso, p. 58). Miso sauce (p. 90-91). Thick tamari sauce (p. 91). Tofu (soybean cheese or bean curd, p. 98-99; an early recipe for homemade tofu made with vinegar or lemon juice as a coagulant. Lists 6 serving suggestions for tofu and 1 for the “soy mash” [okara]). Cooking flaked soybeans (p. 132-33). Soy sesame burgers (with 1/3 cup whole sesame seeds, p. 135-36). Rice pancake with tofu (p. 136). Soybean loaf (p. 138-39). Cooking with soybean flakes (p. 156). Blazing star timbales (with soybean flakes, p. 156-57). Tamale soy pie (with cooked soybeans or soybean flakes, p. 182-83). Soy milk (homemade, p. 292). In the last chapter titled “Natural Foods from Deaf Smith County,” the following soy-related foods are discussed:

Soybean flakes (p. 324, 327), black beans (a type of soybeans, p. 326), soybeans and foods made from them (p. 327). Soybean flour (p. 328). Tamari roasted nuts and soybeans (p. 331). Tamari soy sauce (p. 334). Miso soybean paste (p. 334). Wheat gluten is not mentioned in this book. Frank Ford’s preface shows him to be a devout Christian, organic farmer (in Deaf Smith County, Texas), and advocate of natural foods.

In about Sept. 1991 this early natural foods cookbook was reprinted with a new cover and subtitle (“Natural Foods for Natural Kitchens”). Over 300,000 copies are now in print. Address: 1. Arrowhead Mills, Hereford, Deaf Smith County, Texas; 2. Soquel, California; 3. Foods editor, *The Texas Star*.

1677. George Ohsawa Macrobiotic Foundation. 1973. *Useful names and addresses*. 1471–10th Ave., San Francisco, CA 94122. 55 p. 21 cm.

• **Summary:** This macrobiotic directory lists names and addresses of macrobiotic people, organizations, food stores and restaurants, and bookstores in the United States (each category broken down by state), Canada, and abroad. The leading states for individuals are California (7.3 pages), New York (1.5 p.), and Massachusetts (1 p.).

There are listings for the following foreign countries: Argentina, Australia, Austria, Belgium, Brazil, Costa Rica, Denmark, England, France, Germany, India, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, South Vietnam.

There are ads for the following companies: Sunflower, The Queensberry Bakery (112 Queensberry St., Boston 02215), East West Foundation Center, Sanae Inc. at 2 locations (Sanae Restaurant at 272A Newbury St., Boston, and The Seventh Inn at 288 Boylston St. in Boston), Prasad (1956 University Ave., Berkeley, California) (p. 0). Eden whole earth grocery and delicatessen, and Sun Bakery (330 Maynard St., Ann Arbor, Michigan) (p. 18). Janus Natural Foods (712 7th Ave. South, Seattle, Washington 98104. Phone: 206-MA4-1084) shows that they distribute (import) tamari and miso, as well as sea vegetables. They carry the following brands: Erewhon, Spiral Foods, Deaf Smith, Pure & Simple, Chico-San, Arrowhead Mills (p. 27). Cliffrose (129 Coffman, Longmont, Colorado). Ceres Harvest Natural Foods (3632 W. Colorado Ave., Colorado Springs, CO 80904; wholesale and retail) (p. 39). The Good Karma Cafe (501 Dolores St., San Francisco), and The Good Earth (123 Bolinas Rd., Fairfax, CA 94930) (p. 50). Greenberg’s Natural Foods, Inc. (125 1st Ave., New York, NY 10003).

The George Ohsawa Macrobiotic Foundation is a non-profit organization located at 1471–10th Ave., San Francisco, California 94122. It was founded in 1971. The aim of the Foundation is to spread the teaching of the unifying principle and its practical applications in daily life. Address: San Francisco, California.

1678. Hunan Sheng po-wu-kuan. 1973. Ch'ang-sha Ma-wang-tui i-hao Han-mu [The Han Tomb No. 1 at Ma-wang-tui]. Peking, China: Wen Wu Press. Vol. 1. See p. 35-36. [Chi]*

• **Summary:** The name of the tomb is pronounced “ma-wang-DUI.” Gives a list of the foods buried in this remarkable Han dynasty tomb in Changsha, Hunan province, China. They were buried in about 165 B.C. and unearthed in 1972. A complete listing in English is given by Ying-shih Yü (1977, p. 56). The seasonings included “soy sauce (*chiang*), *shih* (‘salted darkened beans’), and leaven (*ch’ü*) [*qu*].” Also includes azuki beans. Address: China.

1679. Hunter, Beatrice Trum. 1973. Fermented foods and beverages. New Canaan, Connecticut: Keats Publishing Co. 116 p. Index. 18 cm. [38 ref]

• **Summary:** In the chapter titled “Soybeans” (p. 31-49), the author discusses tofu (and how to make it at home with or without fermentation), meitauza (fermented okara), hakko tofu (a newly developed high protein food; fermented soybean curd), sufu (Vietnamese call it Chao), shoyu, miso, ketjap (thick Indonesian soy sauce), tempeh, Hamanatto, natto, Tao-cho from Malaysia, and Tao-si from the Philippines.

Note: The author has collected her information (both correct and incorrect) for a number of sources, which she does not cite directly, although she does have a bibliography.

1680. Ito, Kazuo. 1973. Issei: A history of Japanese immigrants in North America. Translated by Shinichiro Nakamura and Jean S. Gerard. Seattle, Washington: Executive Committee for Publication of Issei, c/o Japanese Community Service, 1414 S. Weller St., Seattle, WA 98144. xxviii + 1016 p. Illust. Index of personal names only. 24 cm. Translation of *Hyakunen Sakura*. [100* ref. Eng]

• **Summary:** This massive book is basically a history of first-generation Japanese immigrants to Pacific Northwest (especially Washington, Oregon, and British Columbia), focusing on the great struggles and hardships they met, written from the viewpoint of individual Japanese who tell their stories (often in the first person), and compiled by a Japanese journalist. The book was first published in Japanese. Access to the wealth of information it contains is crippled by the lack of a subject index. So if one were looking for information about tofu, miso, or soyfoods, one would have to read the entire book. The index of personal names is well done.

At the very front of this book are very interesting maps of the old Japanese districts of the following cities: Seattle, Tacoma, and Spokane, Washington; Portland, Oregon; Vancouver, British Columbia, Canada. Unfortunately, none of the maps are dated. The name and location of each

Japanese organization or business is shown clearly in English.

In Part 8, “Agriculture,” we read that Japanese immigrants to America sometimes enjoyed Japanese soyfoods. In about 1910, in Fife, a farming community near Seattle, in about 1910, Gunji Fujimoto “had miso soup and pickles for breakfast” (p. 440). In about 1916, in Hood River (northern Oregon), Henry Nakamura wrote that Japanese people could get foods from Japan, including “fried bean curd” (p. 499-500). There they also enjoyed miso soup for breakfast, cooked red beans [*azuki*?] spread on bread for lunch, and rice, pickles, and dried radish strips cooked with soy sauce for dinner (p. 503). In the early 1920s in Oregon, breakfast typically consisted of rice, miso soup, and pickled cucumbers (Shoemon Nakamura, p. 512).

Part 20, “On the Streets,” states that “The old Japanese towns in Seattle, Tacoma, Portland, and Vancouver (Canada) can hardly be traced today.” The author has tried to reconstruct maps of these towns “in roughly the period of the 1920s, but not in any specific year” (p. 779-80). In Nov. 1908 Masanao Hanihara, Secretary of the Japanese Embassy, issued a report on his investigations of living conditions of Japanese in the western USA (p. 791). He found the Japanese still lived “at the level of immigrant laborers;” the conditions in their communities were “extremely low and chaotic.” “The Japanese in these areas hardly mix with white residents, while sometimes they approach or mix with Chinese. There are many ill effects from clique-ishness.” “The majority of Japanese workers lack knowledge of English, so whenever they make contracts they sign papers blindly” (p. 795-96). Hanihara estimated the Japanese population of various states as follows: Washington 9,000 to 10,000, Oregon 3,500 to 4,500, Wyoming 1,000 to 1,500, Idaho 1,000 to 1,500, Montana 1,000, and Alaska 1,000. The largest Japanese community in the region was in Seattle (about 4,000 Japanese). “Shinzaburo Ban of Portland is almost the top among successful Japanese on the Pacific Coast.” His business, S. Ban Co., headquartered in Portland (where he arrived in 1891), acts mainly as a contract agency for Japanese laborers—a sort of employment agency, “and his store supplies sake, miso, soy sauce and other such Japanese foods and small items to the laborers” (p. 789-93; see portrait photo p. 792). A sidebar (p. 793, by Raisuke Tamura, Seattle) notes that “However long they lived in the United States, Japanese had to have Japanese food... Around 1906 I imported from Japan vegetables such as lotus root, Japanese radish [*daikon*], *gobo* (burdock), *zenmai* (fern), *abura-age* [deep-fried tofu pouches], *nigari* (bittern, a tofu coagulant), *tsukuneimo*, *yamaimo*, and so on, in hundred-pound baskets, and sold them to sawmills and railroad camps” (p. 793).

The 1 January 1916 edition the *Hokubei Nenkan* listed all businesses operating in various Japanese towns. These

included two “tofu-makers” in Seattle, Washington (p. 800), at least one tofu maker in Tacoma, Washington (p. 804. Tacoma had a Japanese population of 931 in 1915–721 males and 210 females). Spokane didn’t have a Japanese town as in Seattle and Tacoma, but in 1915 it did have a Japanese population of 536 (462 males and 74 females).

The map of old-town Portland, Oregon, probably from about 1935, shows 90 Japanese businesses located between 1st Ave. and 7th Ave. (running north-south) and between W. Burnside and N.W. Glisan (running east-west). Among these are two tofu manufacturing companies. “Ota Tofu Mfg.” is located on 5th Ave. between Everett and Flanders. [Note: The actual address was 86½ 5th N]. “Fukey Tofu Mfg.” is located is on N.W. Davis between 3rd Ave. and 4th Ave.

Contents: The book is divided into 21 parts, with each part containing several chapters (the number is shown in parentheses): 1. Sailing (6). 2. Secret passage and ship-jumping (5). 3. Japanese exclusion (15). 4. Japanese women (2). 5. Railroads (5). 6. Alaska (4). 7. Sawmills (2). 8. Agriculture (7). 9. Hotels (2). 10. Restaurants (2). 11. Mines (2). 12. Oysters (2). 13 Japanese language schools (2). 14. Studying English (3). 15. Pro-Japanese (8). 16. Furuya Company (4). 17. Lese majesty affairs (2). 18. Gambling (3). 19. Girls (2). 20. On the streets (9). 21. In Memorium [Memoriam—to the many who died]. (2). Appendixes: (1) Partial list of Japan-U.S. and Japan-Canada sister cities. (2) Japanese consulates. (3) Chronological table: Japan and America (side by side), 1868-Sept. 1972. Bibliography (p. 967-72, mostly Japanese-language books). Epilogues: To English and to Japanese editions. Index of personal names (p. 988-1016). Address: Tokyo and Seattle, Washington.

1681. Kawamura, Wataru. 1973. *Misoshiru fudoki* [Miso soups throughout the provinces]. Tokyo: Mainichi Shinbun. 213 p. Illust. No index. 20 cm. [Jap]

• **Summary:** A combination cookbook and discussion of miso in Japanese history and culture, in each of the provinces. Contents: Preface. Part I: The topography of miso soup. Story of the birth of a miso teacher. The homeland of miso. Jiang in the Chou Li (Shurei in Chinese; Rituals of the Chou Dynasty). The theory that Ganjin brought miso to Japan. About soybean miso. Sweet miso. Poems about miso soup. Genealogy of Satsuma-jiru soup. The original Miso Dengaku. Prayer to Bishamonten. Sendai miso. Shinshu miso. Kinzanji miso. Miso tenjin of Kumamoto. Miso dondo. The taste of michinoku. The arrival of sesame in Japan. The marriage of sesame and miso. Thoughts on salad with vinegar miso dressing. Pepper and wasabi. Bonito flakes. Mejika-bushi of Tosa. The virtues of sea vegetables. Suribachi grinding bowls, grinding pestle, and spatulas. Agar of Ashino and highland vegetables. Miso, konbu and wakame. Digging up mountain lilies and mountain yams. Miso soup shop. “Women and

Miso soup” TV drama dialogue. Making a fire bath. The origin of Go-jiru soup. Foods that appear at the first of the season. A good daughter-in-law. Part II: Miso soup and miso cooking (recipes). Postscript. Address: Miso teacher, 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan.

1682. Muramoto, Noboru; Abehsera, Michel. 1973. *Healing ourselves*. New York, NY: Avon/Swan House. 150 p. Illust. Index. 28 cm.

• **Summary:** The author’s first name is misspelled throughout: Noboru is correct; Naboro is wrong. The book is based on 4 weeks of lectures given by Muramoto. Abehsera compiled and supplemented these teachings.

Note: This is the earliest document seen (Sept. 2002) concerning Noboru Muramoto.

1683. Nakayama, Tokiko. 1973. *Chûgoku meisaiфу* [Chinese cuisine: Famous recipes]. Tokyo: Shibata Shoten. 4 Vols. [Jap]*

1684. David-Perez, Enriqueta. comp. and ed. 1973? *Recipes of the Philippines*. Philippines: Published by the author. Printed by Cacho Hermanos, Inc., Corner Pines, and Union Streets, Mandaluyong, Metro Manila, Philippines. 170 p. Undated. 22 cm.

• **Summary:** The title page of this book states that the 19th printing was 1973 (Copyright by the author), but no initial date of publication is given. The rear cover states: Reprinted and exclusively distributed by: National Bookstore Inc. Other editions include 1953 (at Library of Congress), 1954, 1960, 1965, and 1968. Contents: Acknowledgement. Introduction. Reminder, Fiesta fare. Everyday dishes. Sweets and desserts. Breakfast and merienda. Pickles and relishes. Refreshments. Glossary. Contains 19 black-and-white photos.

Soy-related recipes include: Baguio onion with tokua [firm tofu] (p. 28). Bañgus en tocho–1 (with tajure, p. 32). Bañgus en tocho–2 (with tajure, tausi, and tokua). Bañgus in soy sauce (p. 33). Bawang guisado (with tokua, cubed and fried, p. 33). Beef steak (with soy sauce, p. 34). Misu-tomato sauce (with miso, p. 74). Paksiw (Pork with soy sauce, p. 78). Paksiw na pata (with soy sauce, p. 78). Pancit “luglug” (with tokua, p. 80). Pork tapa (with toyo soy sauce, p. 88). Taguba (pork with soy sauce, p. 102).

The glossary defines the following soy-related terms: Misu–paste made of fermented rice and soy beans. Tajure–fermented soy beans, caked. Tausi–fermented soy beans. Tokua–soy bean curd. Toyo–soy sauce. Address: Philippines.

1685. Hartz (Jacob) Seed Company, Inc. 1973? *Hartz seed*. Stuttgart, Arkansas. 8 p. Undated. 28 cm.

• **Summary:** Contents: Introduction. Arkansas' Grand Prairie: a major seed producing area for soybeans, rice and oats. Facilities. Research. Real estate and farm management. Export.

Jacob Hartz Sr. (1888-1963), pioneer in the development of soybean production in the South, founded Jacob Hartz Seed Company in 1926 [sic, 1942] and later that year built the first small seed cleaner in the State.

"More farmland in Arkansas is planted in soybeans than any other crop... Jacob Hartz Seed Company contracts upwards of one and one-half million bushels of Arkansas Certified "Blue Tag" Soybeans each year. This seed is produced by 150 Certified Seed Growers. The company's export operations have been directed into many areas of the Pacific, especially for natto, tofu, and miso in Japan.

Photos show: A portrait of Jacob Hartz, Sr. (p. 1) An early binder, pulled by a tractor, cutting oats. Modern combines harvesting soybeans. An aerial view of the plants elevators and offices in Stuttgart. Company President Jake Hartz, Jr. with Dr. Curtis Williams in one of the company's three greenhouses. Address: P.O. Box 946, Stuttgart, Arkansas 72160. Phone: 501-673-8565.

1686. Oles, Shayne. 1973? The new Zen cookery: Practical macrobiotics. Woodland Hills, California: Shayfer Corporation. vi + 90 p. Undated. Index. 22 cm. Spiral bound.

• **Summary:** A revised edition of the first American macrobiotic cookbook, containing a wide variety of recipes from many sources. The cover is light orange. In the lower right corner is a sumi-e type brush sketch of some grasses and flowers. All recipes are numbered. The recipe numbers and page numbers are a little different from those in the 1966 edition published by Ignoramus Press in Los Angeles. Pages 59-62 (recipe nos. 210-21) are about Miso soybean paste. Pages 62-64 (recipe nos. 222-28) are about Tamari soy sauce.

Herman Aihara (Nov. 1990) has no idea why there are two versions of this book, both undated. Shayne Oles must have published one or both of these after Herman Aihara started the George Ohsawa Macrobiotic Foundation (any time after 1969). Only Shayne Oles would know. One clue is given in *Macrobiotics: Yesterday and Today* by Ron Kotzsch (1985, p. 170). "In 1966 Lou Oles, who with his wife Shane [sic, Shayne] had managed the revived Ohsawa Foundation, died, and Shane asked Herman [Aihara] to assist her. Herman began to travel to Los Angeles once a month to give lectures at the Foundation headquarters. He was also instrumental in the publishing of Ohsawa's books, which were selling well on the East Coast as well as the West. By 1969, however, dissention had developed over the role of Shane's new husband in the organization. Herman resigned. In 1970 the Ohsawa Foundation dissolved. Aihara, who had moved to San Francisco [from Carmichael, near

Sacramento], established the George Ohsawa Macrobiotic Foundation as a new educational and publishing organization." Address: President of Ohsawa Foundation, California.

1687. *Times (London)*. 1974. Saturday reviews: The Magical City, by Jonathan Raban. Jan. 26. p. 8.

• **Summary:** A long extract from the book *Soft City*, by Jonathan Raban (published this week by Hamish Hamilton). "The streets are crowded with evident isolates... macrobiotic devotees with transparent parchment faces,... everywhere one sees evidence of a growing devout irrationalism. Little bookshops sell the *I-Ching*, packs of tarot cards... and the macrobiotic foodshop on Portobello Road, Ceres, gravely turns the consumption of vegetables into a mystical religion." At Ceres, the author bought *Macrobiotics: An Invitation to Health and Happiness*, by George Ohsawa."

A new emphasis on "individuality leads us to the fact that we are living by ourselves and we are creating our life by ourselves.

"The girls who drift about the store [Ceres], filling wire baskets with soya beans, miso, and wakame seaweed" will later feed "their immaculate insides on harmoniously balanced amounts of yin and yang foods."

Among the few paperbacks in Annette's scented room are *Steppenwolf*, *The Macrobiotic Way*, and *The I Ching*.

1688. Kaibara, Ekiken. 1974. *Yōjōkun*: Japanese secret of good health. Translated by Masao Kunihiro. Tokyo: Tokuma Shoten Publishing Co. Ltd. vii + 133 p. Preface by Ayanori Onishi of the Japan Society of Medical History. No index. Jan. 21 cm. [Eng]

• **Summary:** Contents: Preface. 1. What is health preservation. 2. How to keep health. 3. Food and drink: What and how. 4. Repressing sexual desire. 5. The five sensory organs. 6. Easing nature and bathing. 7. Prudently guarding against illness. 8. Selection of a doctor: How to avoid a quack or charlatan.

"The original texts of this book are those of 'Yōjōkun,' published in Japanese by Chūōkōron-sha Inc., Tokyo, in 1969, and by Tokuma Shoten Publishing Co. Ltd. in 1968, and are adapted under the direction of Ayanori Onishi." The author lived 1630-1714, and this book was written in 1713. The Preface notes that the importance nurturing mental discipline lies at the very core of the author's art of staying healthy. Among his other works is *Yamato Honzo (Japan's Herbal)*, which is still valued today and well known even abroad. A Soviet scholar has even termed it "the first great work on natural history." The German physician and naturalist Philipp Franz von Siebold (1796-1866) called Kaibara "the Aristotle of Japan."

Kaibara, who has been called the "grandfather of macrobiotics," was an avid observer of the natural and human world. He traveled widely and wrote pioneering

works on botany, geography, herbal medicine, and on popular manners and morals. At the age of seventy he retired from active life, and, free to sift through a lifetime of experience and learning, wrote the *Yôjôkun*, which includes the old sage's views on health and longevity. He begins by asserting that physical well-being and long life are the natural conditions of mankind.

In Chapter One he writes: "The art of health preservation entails, first of all, keeping away from things harmful to one's body, i.e., the inner desires—the desire for food and drink, sexual indulgence, sleep, endless talk, and the seven emotions: joy, anger, worry, pensiveness, sadness, fear, and surprise—and the outer evils—the four atmospheric aspects: wind, cold, heat, and dampness... An important factor in suppression of the inner desires is temperance in eating and drinking... One should refrain from satisfying sexual desire and try to preserve one's energy. Sleep should be confined to standard hours. Oversleep is to be avoided... Of particular importance is to take a walk of a few hundred paces after meals... The art of health preservation begins with mental placidity. The way to achieve mental placidity is to keep one's mind calm and one's spirit unruffled... The human body is meant to last a hundred years... One should not rely on acupuncture, moxibustion, or medicine... A saint always expounds on the delights of living." And sickness, like health, is something which mankind creates. Quoting the *Tao Te Ching*, Kaibara observes "One's life is in one's own hands." Sickness comes only when one has willfully abused oneself. "Illness never comes without reason."

In Chapter 3, Kaibara discourses at length on the subject of food and drink. The author, a Japanese physician, recommends a balanced diet to protect against chronic diseases. Meat and sake should be consumed in moderation. "A person should prefer light, simple meals. One must not eat a lot of heavy, greasy, rich food. One should also avoid uncooked, chilled, or hard food (p. 54)... Of everything that one eats and drinks, the most important thing is rice, which must be eaten in ample amounts to ensure proper nutrition (p. 61)... Do not eat between meals or immediately before going to bed. After eating take a short walk to stimulate circulation. Massage the stomach and abdomen lightly to encourage digestion..."

The section titled "Bean paste" (p. 67) begins: "Bean paste [miso] has a soft quality and is good for the stomach and intestines. Soy sauce and the liquid that drips off bean paste [tamari] have a sharper quality than bean paste and are bad for people who suffer from diarrhea. Nor should vinegar be taken in too large amounts, for it is bad for the spleen and stomach... One must not eat too much of foods that are salty, vinegary [sour], or hot." One should also avoid tobacco.

In the chapter titled "Repressing Sexual Desire," Kaibara states that the great human frailties are gluttony and lust. He agrees with the Chinese sages that one should

practice sexual abstinence in youth to reserve one's vitality and vigor. He cites the *Chien Chin Fang* by Sun Szu-miao which talks about the frequencies of sexual intercourse: "At twenty years of age, people should have a discharge [of semen] no more than once in a period of four days, at thirty once in eight days, at forty once in sixteen days, and at fifty once in twenty days. At sixty a person should no longer discharge his energy sexually unless he is particularly vigorous physically, in which case he can do so once a month." Kaibara believes that it is very important to conserve sexual energy since it deeply affects the function of the kidneys, and the kidneys are the seat of vital energy for all the other organs. Address: Japan.

1689. Takeuchi, Tokuo; Yokoo, Yoshio. 1974. [Studies on peptides in miso and soy-sauce. XI. Effect of *koji* addition on the proteolytic patterns of soybean *miso* manufactured with an enzyme preparation]. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 52(1):58-61. Jan. [2 ref. Jap; eng]

• **Summary:** Four types of soybean miso was made by several different combinations of the commercial enzyme Biosaime A, which was prepared by the water extraction of wheat bran *koji* made with *Aspergillus oryzae*. The enzyme was combined in different proportions with *koji* (0 to 100%), and the amount of free and bound amino acids in each miso was measured. Address: Food Research Inst., Aichi prefecture, Nishi-ku, Nagoya, Japan.

1690. Watanabe, Tokuji. 1974. Government role and participation in development and marketing of soy protein foods. *J. of the American Oil Chemists' Soc.* 51(1):111A-15A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973. [14 ref]

• **Summary:** Contents: Abstract. Introduction. Japan's soybean supply and demand. The present soybean protein food market in Japan. Administrative aspects with respect to soybean protein foods. Research and development projects concerning soybean protein foods and their achievements. References. Address: National Food Research Inst., Ministry of Agriculture & Forestry, Tokyo, Japan.

1691. Eden Foods, Inc. 1974. Wholesale prices, F.O.B. P.O. Box 100, 310 W. Ann St., Ann Arbor, MI 48107. 2 p. Catalog. Effective Feb. 1.

• **Summary:** The products are very similar to those in the Nov. 1973 catalog. The 3 types of miso (Mugi, Hacho, Kome) bear the Erewhon label. Address: Ann Arbor, Michigan. Phone: (313) 769-8444.

1692. Dresden, Donald. 1974. Japan Inn: A good show, visually and gastronomically. *Washington Post*. Feb. 17. p. PO34.

• **Summary:** Dining: The Japan Inn, now in its 3rd year of operation, located at 1715 Wisconsin Ave., NW (Georgetown), continues to rank as one of the finest Japanese restaurants in Washington, DC. To make the broth for Miso soup, begin with a Japanese seaweed called “sea tangle” [kombu], then remove it after it has imparted its flavor. Add dried bonito flakes to produce a delicate, fish-tasting broth. “Bean cake [tofu], mushrooms, and chopped green onions finish the dish.”

Shabu-shabu comes with two dipping sauces. One of these is made by mixing soy [sauce], vinegar, two kinds of sake, seaweed and dried bonito flakes. The other contains sesame seeds, oil, and paste. Shabu-shabu “also contains hot pepper, aged soy bean cake, soy sauce and two kinds of sake, one of them [mirin] sweet.”

Note: The meaning of “aged soy bean cake” is unclear. It could be fermented tofu, although that is rarely used as an ingredient in Japanese cookery.

1693. Kushi, Michio. 1974. Natural agriculture and food processing. *Michio Kushi Seminar Report (Brookline, Massachusetts)* No. 3. Feb. 26 and 27. p. 5-30. Edited by Ane & Mark Riegel.

• **Summary:** On Feb. 26 Mr. Kushi, a macrobiotic teacher, lectured on: Tekka. Miso and miso manufacturing, including how to make malt (rice koji). Soup stocks and miso soup.

On Feb. 27 he discussed: General outline for making shoyu—soy sauce, including discussions with Kikkoman on making natural shoyu starting with whole soybeans. Using bean and grain sprouts—moyashi (including soy sprouts). Other soybean products: Fried tofu (two methods for agé). Ganmodoki. Kori-tofu or koya-tofu (freeze-dried tofu). Soybean milk. Yuba. In the discussion, soymilk yogurt and “Chinese fermented tofu... fu nyu” (p. 28) were mentioned. The U.N. [United Nations] recommendations on food, using vegetable proteins.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term “freeze-dried tofu” to refer to dried-frozen tofu. Address: Brookline, Massachusetts.

1694. *Better Nutrition*. 1974. Food for thought. Feb. [1 ref]

• **Summary:** “The Overseas Development Council is calling for a Sino-American Soybean Research Institute for developing soybeans which will produce more beans per acre...”

“Unfortunately, our country uses most of its domestic supply of soybeans as food for poultry and cattle. In the Far East soybeans are used directly as food for people, which is, of course, much more sensible. Soybean protein is as nearly complete a protein as exists in vegetarian food. Combined with cereals or nuts at the same meal, soybean food offers complete protein very inexpensively at the rate of 11 grams for every serving of the cooked dried beans.

“Other soybean products available in our country are loaded with high quality protein: soy flour, with up to 47 per cent protein, soybean curd (a kind of cheese) with almost 8 per cent protein, *miso* and *natto* with 11 and 17 per cent protein respectively.

“Soybean milk products are equally nourishing where protein is concerned.”

1695. Erhard, Darla. 1974. The new vegetarians. II. The Zen macrobiotic movement and other cults based on vegetarianism. *Nutrition Today* 9(1):20-27. Jan/Feb.

• **Summary:** This article is mainly a very critical assessment of the macrobiotic diet and movement introduced as a cure by George Ohsawa. It also discusses Sufi groups, the new Vrindaban International Society for Krishna Consciousness (founded in 1966 by his Divine Grace A.C. Bhaktivedanta Swami Prabhupada), and various vegan groups.

A pie chart on page 21 shows the various major food movements in the U.S. counterculture “and how they all lead to unscientific vegetarian forms of food faddism.” Within the natural food movement are organic communes, Krishnas, vegans, Sufis, followers of the Ehret’s mucusless diet healing system, and practitioners of Yoga. Within the health food movement are four major teachers: Paul C. Bragg, Herbert Shelton, Carleton Fredericks, and Adelle Davis. Within the “Cosmic Nutrition Movement” are Zen macrobiotics (yin/yang polarity), and the Messiah’s Crusade (positive/negative polarity).

“Veganism is the philosophy and practice of compassionate living. Founded in England in 1944, the Vegan Society originally stressed the ethics of eating. The American Vegan Society, based in New Jersey, was founded in 1960 and is composed of individuals who are more health oriented. This Vegan philosophy was essentially based on Dr. Albert Schweitzer’s concept of reverence for life, and Mahatma Gandhi’s concept of Ahimsa, a Sanskrit term meaning non-killing and non-injury” [dynamic harmlessness] (p. 27). “Vegans who practice more restrictive diet interpretations may use Dr. Shelton’s Food Combining System.” Vegans and their children often use soya milk.

The reason is that the general natural foods movement is an example of unscientific food faddism is that the “Diet emphasizes natural and/or organic vegetables, fruits, legumes, grains, and usually dairy products, and restricts meat.”

A sidebar briefly defines “Vegetarian terms” including amasake, miso, mochi, nirvana, tamari, tofu, and umeboshi.

Note: This is the earliest document seen (May 2002) concerning Sufism (or Islam) and Vegetarianism. Address: RD, MPH, Research Nutritionist, Clinical Study Center, San Francisco General Hospital, California.

1696. Gerner, Bob. 1974. Log of trip to Japan to study traditional natural foods, 28 Feb.–2 March 1974. Part I (Log–unpublished). Westbrae Natural Foods Inc., Berkeley, CA 94710. 26 p. Unpublished log. Handwritten. 20 x 8 cm.

• **Summary:** 1974 Feb. 28. Meet Bill Shurtleff and Mr. Masa Miyashita of Kikkoman export dept. (good man, speaks fluent English) at the Imperial Hotel (*Teikoku Hoteru*, built in the 1920s by Frank Lloyd Wright) in Tokyo. Talk for 4 hours. Westbrae hires Shurtleff as an interpreter and guide.

March 1. Dinner at Sasa-no-Yuki, beautiful old restaurant that specializes in tofu cuisine.

March 4, Monday. Visit Kikkoman in Noda with Shurtleff and Miyashita. Tour Plant #7, then Plant #4 (the Goyo-Gura), which produces the emperor's shoyu in the traditional, natural way. "Saw 5 batches of moromi mash from 1 month old to 12 months old, and tasted each one. Delicious. Great color change between the 1 month and the 12 month moromi. We saw all the traditional tools. The moromi vats were made of cedar and last approximately 200 years." See a movie on how shoyu is made. Lunch at a sushi shop. Visit two miso retail shops with Shurtleff near his home. One had 42-45 types of miso (mostly rice miso, with 1 each Hatcho, barley, and cooked miso), the other 32-35 types. Tasted many and learned the differences. I buy Saikyo sweet white miso and Hatcho miso.

March 5, Tues. Attend a cooking class at Lima Ohsawa's house, then have dinner with Lima and the class members. Sick for the next 2 days.

March 9, Sat. Call then meet Mr. Kazama of Mitoku. He represents Erewhon. We may import through Kikkoman's Pacific Trading. Plan trip to Sendai Miso-Shoyu. Sendai is interested in using organic soybeans to make shoyu but would like a contract stating that all of it will be purchased when done. Dinner at the natural foods restaurant, Hakumon run by a Frenchman named Pierre.

March 11, Mon. Meet Shurtleff early at Tokyo station. Take bullet train (Shinkansen) to visit two Hatcho miso plants (Hayakawa Kyuemon Shoten, and Ota Shoten in Okazaki city, Aichi prefecture). Both plants claim to be over 600 years old. They use modern steamers and koji rooms. They pile 4-6 tons of rocks atop each large vat of miso, age it for 2 summers. It becomes very mellow when fully aged. They also use about half of their Hatcho miso to make Akadashi miso. It also contains caramel coloring, barley syrup, MSG, shoyu, a white miso, and preservatives. They sell a lot of Akadashi but only a little Hatcho miso. Lunch at an udon noodle shop that hand makes and cuts the noodles. Lots of slurping. Then visit a plant that makes real tamari and shoyu. All the tamari is mixed with junk. Train to Kyoto; stay at Friends World College. Note: This is the earliest English-language document seen (July 2006) that contains the term "real tamari."

March 12, Tues. Visit a tofu maker, a yuba maker (*Yuba Han*), then the company that makes Saikyo sweet white miso. The owner lies to us initially about his miso aging and caramel coloring (which tastes and looks like tar). Then he reverses himself without batting an eye. Lunch at a 300 year old Zen vegetarian restaurant (*Okutan* near *Nanzenji* temple); so beautiful that I start crying. Fantastic place. Light snow falling by the pond. Enjoy Simmering Tofu (*Yudofu*) in a broth. Then we go to a 400-year old tofu restaurant (*Nakamura-ro*) at a shrine (*Gion*) for dessert of *amazake* and *Dengaku* (skewered and braised with sweet miso). On to a second miso factory. It is a bore and the owner does not seem sincere but he has a great reputation among macrobiotics. He makes both natural and sweet white miso. Shurtleff visited him last year. For white miso the soybeans are boiled; for red miso they are steamed. Some white miso contains sodium thiosulphate bleach. Visit another yuba shop. They use granite grinding stones to make soymilk, cast iron pot to cook it in and copper skimming tables. A very beautiful place. Meet Ty Smith at a soba shop. He is a chain smoker, just quit working for Muso, and promoting a cooperative effort between Janus, Chico-San, Erewhon, and The Well to import foods from Japan. Evening at Jittoku coffee house, owned by an American, in a large old Japanese treasury (*kura*). Back to Tokyo by train. Talk until 1:00 A.M.

March 14, Thurs. Meet Kazama and Shurtleff, and take express train to Sendai Miso-Shoyu. We are treated royally by Mr. Muro. Long introduction and discussion. Visit their 2 plants, one modern, one traditional, natural. They make only rice miso. Their production of natural miso is more than all that imported to America by Erewhon and Janus. They age their natural shoyu 18-24 months at the request of Michio Kushi and Erewhon. They have 9 aging vats for the first year, then it is switched to other tanks. They invite us to have a shoyu taste test among 3 products: Kikkoman regular shoyu, Sendai regular, Sendai natural. Both Bill and I choose Kikkoman as best; good aroma, color, and taste. They congratulate us on our good taste. Sendai regular had very strong salty taste. We both liked the Sendai natural least; good color, no aroma, very mild taste. Sendai people say only one year is needed to ferment shoyu naturally. We might sell them organic soybeans (we had purchased 12 truckloads from a farmer) and get shoyu back in 1 year. We meet the president (Sasaki?), born 1928. Elegant geisha-hosted tempura and sushi dinner with president, 2 vice presidents, production manager, and a consulting professor (Shibasaka sensei). After dinner to a traditional bar for *doboroku* (thick, unrefined sake with a low alcohol content [or was it nigori-zake?]), then a sushi house. Shurtleff leaves for Tokyo on night train.

March 16, Sat. Visit Shurtleff and Aoyagi's home for lunch. We have dried-frozen tofu main dish, salad with creamy tofu dressing, strawberries with tofu whipped

cream. Delicious. Then we learn how to make tofu at home. Its easy. I'll make it at home in California, then at our Westbrae Natural Foods retail store on Gilman Street (Note: This led to a long series of tofu classes by Gerner, Liz Horowitz, and later Shurtleff & Aoyagi; The retail store changed its name in late 1976 to Gilman Street Gourmet).

Note: This is the earliest document seen (April 2006) concerning Westbrae Natural Foods. Continued. Address: President & Chairman of the Board, Westbrae Natural Foods Inc., 1224 10th St., Berkeley, California 94710.

1697. Gerner, Bob. 1974. Log of trip to Japan to study traditional natural foods, 28 Feb.–2 March 1974. Part II (Log–unpublished). Westbrae Natural Foods Inc., Berkeley, CA 94710. 26 p. Unpublished log. Handwritten. 20 x 8 cm.
 • **Summary:** Continued: March 19, Tues. Take bullet train to Kyoto to meet Steve Earle of Muso Shokuhin. We 3 go to Okayama to see Fuchu Miso, that makes mugi miso (the barley miso sold in our store) and sweet white miso. The president's wife is the epitome of Japanese woman. For lunch we have tofu burgers with Italian sauce and mushrooms in a bento made by Akiko. Delicious. Take a boat to Shodo-shima where Marushima Shoyu Co. is located. Island is also famous for toasted sesame oil. Arrive at a ryokan at 6:30 P.M. VIP treatment. Bath before dinner and served in private room by geisha. Too much fish! Note: This is the earliest English-language document seen (Jan. 2007) that contains the term "tofu burgers."

March 20, Wed. Miso soup for breakfast. Visit Marushima Shoyu where Muso gets its "natural" shoyu for export to America. They have the newest wheat roasters (they roast it with sand), biggest presses. We see cement aging tanks in a temperature-controlled room, then onto a large red building with 150 aging tanks. But we see no whole soybeans, only soybean meal (*dashi daizu*). "I feel the owner is a liar and this is a bogus operation. The scene gets heavy and ugly. Bill is great and presses on with questions." The owner claims that 40% of their shoyu is natural, aged for 3 years and made with whole soybeans; 60% made with soybean meal, temperature controlled for 7 months. Thus there should be about 120 vats of natural versus 60 regular. But where is the natural? Their faces turn red. We have caught them red handed. The owner take us to one musty, dirty old building with 25 vats, only 8 of which contain shoyu, some only half full. Lots of cockroaches. Looks like no one ever goes here. Still no sign of a single whole soybean. Uneasy departure. Steve Earle is embarrassed. We take a train to Tokyo. We present Earle/Muso with a list of inconsistencies and ask for a written reply.

March 21, Thurs. Visit Mr. Kazama's miso factory (*Ikeda Kojiro Miso Shoten* in Kawaguchi-shi near Tokyo), that makes barley miso, the only brown rice miso in Japan, and shoyu. Call Ty Smith of Muso. He says Muso was very

happy with our findings concerning the problems at Marushima, and that they have contacted a new source in Kyushu. Marushima said their president died a year or so ago and his son took over. They have lost the old feeling and tradition.

March 22, Fri. 6:00 A.M. Meet with Bill Shurtleff at his tofu master's tofu shop (*San-Gen-Ya*, run by Mr. Toshio Arai). We watch how he makes tofu. Beautiful place (12 feet square) attached to their home. Beautiful people; they don't speak English. Both make tofu starting early in the morning. He delivers in the afternoon and she sells out of the shop. He gave me hot rich soymilk (from *kinugoshi*) with wild mountain honey. Both incredible. So sweet and delicious. They also serve us freshly made agé, kinugoshi, and natto. Lunch at Shurtleff and Aoyagi's home: Noodles and tofu, Chinese fried tofu, tofu pudding, agé, kinugoshi, and mikan orange. We go over my notes from the miso factory. We copy all of his notes. Then I leave, very sad, but the friendship will remain. Akiko is a remarkable lady. Meet Mr. Kazama and go to Pacific Trading. Lousy meeting with Mr. Masaaki Miki (sales manager), and Masa Miyashita (export dept). Go to airport.

Results of the trip: (1) Westbrae started (about 9 months later) to import many varieties of miso, plus shoyu, and other products from Mr. Kazama in Japan. Bob Gerner was the founder, president, and chairman of the board of Westbrae; (2) Bob Gerner and Liz Horowitz taught "Tofu and Miso Cookery Classes" in Berkeley during 1976; (3) Westbrae published and distributed widely two brochures, *What is Miso?* (May 1976) and *What is Tofu?* (July 1976) written by Shurtleff and Aoyagi; (4) In 1976 Westbrae Natural Foods Inc. decided to sell its retail store at 1336 Gilman St. in order to focus on being a distributor and importer. The store had been losing money. Bob Gerner bought it in June 1976 for the low price offered by the highest bidder. He remodeled the store, renamed it Gilman Street Gourmet, and re-opened it in Sept. 1976. In the spring of 1977 Gerner added a deli to the store; there he made and sold Tofu Burgers, Tofu Treasure Balls, and Tofu Steaks Sauteed in Ginger Sauce. The same week that the deli opened, Gerner sold 3,000 to 4,000 of his new Tofu Burgers out of the Westbrae booth at the New Earth Exposition in San Francisco. Bob's nephew and sister (Margaret) made the tofu burgers. The burgers sold equally well at the same Expo in 1978 and 1979; (5) Shurtleff and Aoyagi wrote *The Book of Miso* and their New-age Foods Study Center moved toward becoming Soyfoods Center.

Note: In late November 1974 Mr. Kazama came to a meeting at Pajaro Dunes by Santa Cruz, sponsored by The Well. The idea was to set up a natural foods trade association. Erewhon wanted to control all imports of Japanese natural foods from Japan. Janus and The Well both had to import through Erewhon. They said Westbrae must buy through them via The Well (Roger Hillyard/Pure &

Simple), and pay a 5% commission. Kazama had to defer to them. Gerner refused and they backed off. Ty Smith, now head of Erewhon, was upset that Westbrae was not paying a commission. Gerner told him "Tough." So Westbrae ended up importing from Kazama. Address: President & Chairman of the Board, Westbrae Natural Foods Inc., 1224 10th St., Berkeley, California 94710.

1698. Huang, Su-Huei. ed. 1974. Chinese snacks: Wei-Chuan cooking book. Taipei, Taiwan: Dept. of Home Economics, Wei-Chuan Foods Corp. 184 p. Illust. No index. 25 cm. [Eng]

• **Summary:** Almost every page contains a large color photo of a finished dish. Recipes include: Seaweed-bean curd broth (p. 7). Bean curd-rice noodle soup (p. 8-9). Egg flower soup with tofu (p. 10). Steamed spareribs with black beans over rice (with "fermented black beans," p. 14). Bean curd and vegetable soup (p. 14). Bean curd and oyster broth (p. 24). Chicken in black bean sauce over rice (p. 25). Red-cooked beef noodles (with black bean paste {pronounced "he do ban jiang"}) and hot bean paste {"la do ban jiang"}, p. 47). Saucy noodles—"Ja jiang mien" (with pressed bean curd and sweet bean paste {"tien mien jiang"}, p. 59). Sweet almond-beancurd soup (p. 143). Sweet soybean milk ("Do jiang," p. 156). Salty [soy] bean milk (p. 156). Crispy Chinese crullers ("You tiau," p. 157; serve with sweet or salty soybean milk).

Also: Cantonese moon cakes (with red bean paste [azuki] filling, p. 133, with color photo). Crunchy sesame cakes (with red bean paste filling, p. 135). Tasty fried bean cakes (with red bean paste filling, p. 137). Sesame-bean paste puffs (with red bean paste filling, p. 141). Sweet almond-beancurd soup ("beancurd" made with agar and evaporated milk—no soy, p. 143). Address: 19 West Nanking Road, Taipei, Taiwan. Phone: 551-13564.

1699. Nihon Jozo Kogyo K.K. 1974. Marufuku tane-koji (miso-yô) [Marufuku koji starter for miso]. Koishigawa 3-26-3, Bunkyo-ku, Tokyo, Japan. 1 p. Feb. Manufacturer's catalog. [Jap]

• **Summary:** Describes 9 types and 17 varieties of koji starter for miso, with prices and amounts of koji each will make. Address: Tokyo, Japan. Phone: 03-814-2738 or 9.

1700. Spiral Foods Inc. 1974. Wholesale price list. Chico, California. 4 p. March 15. 28 cm.

• **Summary:** This two-sheet catalog and price list, consisting of two pages stapled in the upper left corner, is printed front and back with reddish-orange ink on tan paper. The first item is five cookbooks. Soy-related products: Condiments: Lima tamari soy sauce (aged naturally over 2 yrs.). Miso—soybean puree (entirely natural—Mugi Miso, or Kome Miso). Lima kome miso. Nigari (natural coagulant to make tofu). Barley koji. Tekka. Sesame salt (toasted whole brown

sesame seeds and sea salt). Salt plums (pickled in sea salt). Kuzu (wild arrowroot starch). Utensils: Soy pitcher [dispenser]. Address: 1144 West 1st Street, Chico, California 95926. Phone: 343-2111.

1701. Takeuchi, Tokuo. 1974. Studies on peptides in miso and soy-sauce. XII. Low molecular weight peptide in soybean miso. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 52(4):256-67. April. [12 ref. Eng] Address: Food Research Inst., Aichi prefecture, Nishi-ku, Nagoya, Japan.

1702. **Product Name:** Yin Yang Soyang [Savoury Vegetable, Savoury Onion, Curry], and Fermented Soya. **Manufacturer's Name:** Yin Yang Natural Products Ltd. **Manufacturer's Address:** 45 Chalton St., London NW1 1HY, England. Phone: 01-387-0456.

Date of Introduction: 1974. April.

New Product—Documentation: Ad in *The Vegetarian Health Food Handbook (UK)*. 1974. p. 4. "Yin Yang-Soyang: A new wholesome high protein vegetarian food." Photos show the lid of a product named Soyang, and the side of a product named Yin Yang Fermented Soya. These two fermented products are rich in protein. "Organically grown sesame seeds perfectly combined with the soya give a very well balanced amino acid pattern, as well as a good source of calcium. Wheat germ provides an extra source of protein and creates youthful energy. To this basic product Yin Yang add Onion, Mixed Vegetables and Curry to make three very different, interesting and exciting meals. There are NO animal fats, no preservatives, and no artificial colourants or flavours."

The company also sells Yin Yang skin conditioner, precious earth face pack, and skin cleanser.

Listing in *The Vegetarian Health Food Handbook (UK)*. 1974. p. 176. "Soyang (Savoury Vegetable, Savoury Onion, Curry), and Sesame Sowen by Yin Yang Natural Products Ltd."

1703. Loring, Kay. 1974. Restaurants: Elegance prevails at new Dragon Inn North. *Chicago Tribune*. May 16. p. N1.

• **Summary:** This is a restaurant review. The Dragon Inn serves a hot and sour soup "filled with soybean curds and lean shredded pork."

The dessert (which must be ordered in advance) "was a 'jewel' rice pudding... It's beautiful to see, a molded sticky rice mound with black bean paste and fruits..."

1704. Kay, Theodore. 1974. Soybeans in the Nigerian diet. *Samaru Agricultural Newsletter* 16(1):18-22. May. [Eng]

• **Summary:** Contents: Introduction. Nutritional value of the soya bean. Daily amino acid requirements for men, women, and children. Suggested methods of incorporating soya bean into the Nigerian diet: Soya bean paste (soaked, uncooked

soya beans, with the hulls on, ground to a white paste) and whole beans (not dehulled). Utilization of the paste: Directly for kosei (akara ball) and panke (puff-puff), for preparation of soya bean milk, which can be used to make protein-enriched pap, fu-fu, bean curd (to-fu), awara or wara. Use of the residue from preparation of soy bean milk [okara]: In Alele (moin-moin), or biscuits. Utilization of whole soya beans: baked, sweet baked powder, stew. Discussion: Why do we need soya bean in Nigeria? Five reasons are given. Acknowledgments to many co-workers.

The soya bean has been cultivated in the Far East since about 2800 B.C. It has [been] the main source of protein for all of East Asia, particularly for the vegetarian Buddhist. It has been used as bean curd (To-fu) and soya sauce in most parts of the Far East from Indonesia up to the Northern end of Japan, as soya bean milk in China, as soya paste (mi-so) in Japan, and as a fermented product (Tempe) in Indonesia.

The crop is well established in Benue Plateau State south of Makurdi, in the North-Western State around Abuja and in the southern part of North-Central State. However, it has been very difficult to cook the beans in a traditional West African way so it has never become popular in this country. Most of the soya bean produced in Nigeria has been exported as a cash crop, except a little for animal consumption. Address: Inst. for Agricultural Research, Samaru, Ahmadu Bello Univ., PMB 1044, Zaria, Nigeria.

1705. Eden Foods. 1974. Spring pricelist. P.O. Box 100, Ann Arbor, MI 48107. 4 p. Effective June 1.

• **Summary:** There are many more total products than in the Nov. 1973 catalog. The 8 oz tamari soy sauce and the 3 types of miso (Mugi, Hacho, Kome) in 1-lb packages bear the Erewhon brand after the product name in the catalog, but the pints and gallons of tamari soy sauce and the same 3 types of miso sold in bulk (44 lb tubs) do not bear the Erewhon brand, perhaps indicating the Eden has found a way to go around Erewhon in importing bulk miso. New products include: Kuzu arrowroot. Grade C Korean nori (Roland). Canadian leaf dulse (Atlantic Mariculture). Sicilian olives (Pure & Simple). Barley malt powder. Barley malt syrup. Maple syrup. Bee pollen. Shiu-chu finest preserved Ginseng roots (China). Kirin extra large ginseng roots, red. pres. (China). Ginseng balls (*fo-ti-tieng*, *dong kwai* [angelica root]). Mao herb (Chinese ephedra). Lemongrass. And many other herbs. Address: Ann Arbor, Michigan. Phone: (313) 769-8444.

1706. Erewhon. 1974. Natural and organic foods: Supplying natural food stores, co-ops, schools and communities (Catalog). Boston, Massachusetts. 16 p. Effective June 1974.

• **Summary:** The structure and design of this catalog is quite similar to the previous one of April 6, however four pages of new products and sizes have been added. The

background of illustration has been changed but the foreground is the same; it is now copyrighted by Erewhon. The note from Paul Hawken has been replaced by a similar one signed "the erewhonians." OG = Organically grown.

New additions to the catalog: Flyers: (1) Organic Merchants: The flour story. The salt story. (2) Issues of *East West Journal*. From Vol. IV, No. 6, July 1974, "Energy" to Vol. IV, No. 9, Oct. 1974, "Healing." (3) Natural Recipes: Three by five inch tear-off pads, each pad containing 100 of the same natural-food recipe. Four assortments (A-D), eight different pads in each assortment. There is one soy-related recipe pad in each assortment: (A) Soybeans au gratin. (B) Miso soup. (C) Soybean casserole. (D) Soyburgers. Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: (617) 542-1358.

1707. *Foreign Agriculture*. 1974. Koreans expand soybean output by planting rice paddy dikes. July 8. p. 8-9.

• **Summary:** Korea, which doubled its imports of U.S. soybeans last year, is again promoting a program to boost domestic oilseed production by planting soybeans on rice paddy dikes. This practice, which was mandatory under the Japanese occupation, had been abandoned until revived last year. In 1973, "dike-bean" acreage was estimated at 86,485 acres. The Ministry of Agriculture and Forestry (MAF) estimates that the maximum area for dike-beans now ranges from 93,900 to 135,900 acres. A significant portion of the crop harvested daily in the summer to be consumed as a cooked, green vegetable, much as Americans eat lima beans. Nearly all of Korea's soybean production is consumed as food. Industry sources estimate that 70% is used in homes for making soy sauce and paste, 20% for bean curd, and 10% for bean sprouts. Address: Office of U.S. Agricultural Attaché, Seoul.

1708. Gandjar, Indrawati; Steinkraus, K.H. 1974. Biochemical, nutritional, and organoleptic changes occurring during production of indigenous fermented foods. In: UNESCO/ICRN/ITB Training Course on Indigenous Fermented Foods. 25 p. Held 12-31 Aug. 1974 at Bandung, Indonesia. *

• **Summary:** Discusses kecap ([kechap], soy sauce), tauco ([taucho] Indonesian-style miso), tempeh, idli, tapeh ketan, and terasi.

Note: This is the earliest English-language document seen (March. 2009) uses the word "tauco" (spelled in that way) to refer to Indonesian-style miso.

1709. Robinson, Robert J.; Kao, Chuan. 1974. Fermented foods from chickpea, horse bean, and soybean (Abstract). *Cereal Science Today* 19(9):397. Abst. #94. Sept.

• **Summary:** The authors made soybean tempeh, chickpea tempeh, and horse bean tempeh from dehulled 0.2 to 0.4 cm

diameter grits. The soybean tempeh had the best flavor, texture, and color.

They also made soybean miso, chickpea miso, and horse bean miso from the grits. Compared with soybean miso, chickpea miso's color was darker, while horse bean miso's is lighter.

Note: This is the earliest document seen (Sept. 2002) concerning miso made without soybeans; chickpeas and horse beans were used instead. Address: Kansas State Univ., Manhattan, Kansas.

1710. Spira, Ruth Rodale. 1974. *Naturally Chinese*. Emmaus, Pennsylvania: Rodale Press, Inc. iii + 346 p. Illust. Index. 25 cm. [8 ref]

• **Summary:** Contains recipes that call for and an excellent glossary that describes: Bean curd (dow foo—tofu), deep-fried bean curd (tofu), bean curd–dried (foo jook = yuba), bean curd cheese (fooh yu [fermented tofu], p. 297), bean curd stick (yuba), bean paste–yellow (wong dow sa), bean sauce–brown (min see jeung), beans–black fermented (dow see), soy milk, soybean sprouts, soybeans–black (kei tou).

1711. Eden Foods. 1974. Fall & winter pricelist. 4601 Platt Rd., Ann Arbor, MI 48104. 2 p. Effective Nov. 1.

• **Summary:** Note that the company has moved to a new and much larger warehouse. Soybean Flakes are still organically grown in Deaf Smith, Texas. Tamari Soy Sauce, and 3 misos still bear the Erewhon brand. Eden is selling Honey Vinegar, Apricot Butter, and Apple Sauce under the Pure & Simple brand. Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

1712. Aihara, Herman. 1974. *Soybean diet: Diet for the better protein*. Oroville, California: George Ohsawa Macrobiotic Foundation. xi + 164 p. Nov. Illust. Index. 21 cm.

• **Summary:** This book is an expanded version of "Miso and Tamari" (1972). Contents: Preface. Introduction. 1. Theory: Steak vs. gasoline, is animal protein indispensable, protein requirements, essential amino acids—law of all or nothing, minimum daily requirement of essential amino acids. 2. Miso: Introduction, the origin of miso, kinds of miso, ingredients, how to make miso, value of miso, miso in the treatment of tuberculosis, how to make miso using mugi koji, recipes using miso for warmer seasons, recipes using miso for colder times. 3. Tamari or traditional soy sauce: History, chemical change of tamari, how to make tamari soy sauce, how to use soy sauce, soy sauce cooking for warmer times, soy sauce cooking for colder times. 4. The other soybean and high protein foods: How to make tofu at home, how to make tofu plaster, how to make agé—deep fried tofu at home, how to make seitan at home. 4A. Tofu, seitan, and gluten cooking for warmer times: How to make tofu, nigari, and bulk tofu at home, how to make wheat gluten, seitan

and fresh wheat *fu* at home. 4B. Tofu, seitan and gluten cooking for colder times. Appendix: Cutting styles, useful information. Bibliography.

Large photos near front of book show Herman Aihara and (happy) Cornelia Aihara at her stove. Address: Oroville, California.

1713. *Soybean Digest*. 1974. East meets West in soybecue sauce. Nov. p. 38.

• **Summary:** "A Japanese scientist has added soybean miso to American barbecue sauce in a new East-meets-West food, 'soybecue' sauce. Ichiro Ouchi, studying at the USDA research laboratory in Peoria, Illinois, replaced part of the catsup in conventional barbecue sauce with red miso, a fermented soy food, to formulate the new sauce..."

"Mr. Ouchi is studying the use of miso made from U.S. soybeans in American foods like meat sauces, salad dressings and snack dips and spreads. His research with Hwa Lih Wang, biochemist, and Dr. C.W. Hesseltine is sponsored by the Shinshu Miso Association, an organization of Japanese companies."

1714. **Product Name:** Sunwheel Organic Hatcho Miso, Mugi Miso, Tamari, and Shoyu.

Manufacturer's Name: Sunwheel Foods (Importer-Distributor). Made in Japan. Imported from Muso Shokuhin.

Manufacturer's Address: London, England.

Date of Introduction: 1974. November.

How Stored: Shelf stable.

New Product–Documentation: CSP form filled out by Simon Bailey. 1988. Sept. 28. Gives date of introduction as 1974. In 1984 Sunwheel divided and sold its Sunwheel brand to Northumbrian Fine Foods. Its high quality Japanese products are now imported by Clearspring Natural Grocer. Peter Bradford is the contact person. Japanese agent is Mitoku. Various Japanese manufacturers.

Interview with Bill Tara, founder of Sunwheel. 1991. Aug. 18. By late 1974 Sunwheel Hatcho Miso, Mugi Miso, and Tamari were on the market, imported from Muso (Yuko Okada) in Japan. By 1979 Sunwheel was sold to a larger health food company.

1715. Ebine, Hideo. 1974. Miso no shokuhin tenkabutsu no mondai [The problems of food additives used in miso].

Shoku no Kagaku (Food Science Journal) No. 21. p. 46-53. Dec. [Jap]

Address: Norinsho Shokuhin Sogo Kenkyujo, Hakko Bunchu.

1716. Inamori, Michisaburo. 1974. Namemiso to miso no kakô [Finger-licking miso and processing miso].

Shoku no Kagaku (Food Science Journal) No. 21. p. 77-88. Dec. [Jap]

Address: Kaneju Shokuhin K.K., Japan.

1717. Kawamura, Moriyasu. 1974. Amamiso [Sweet red miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 54-60. Dec. [Jap]

Address: K.K. Hinode Miso Jozo, Moto.

1718. Kawamura, Wataru. 1974. Miso no rekishi [History of miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 14-20. Dec. [Jap]

• **Summary:** This entire issue contains articles written by Japan's best miso researchers. Address: Shokubutsushi-ka, Japan.

1719. Kondo, Hiroshi. 1974. Miso bunka-ron [Comments on miso as a culture]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 89-90. Dec. [Jap]

Address: Shokubutsu-shi Kenkyu-ka (Food history researcher).

1720. Matsushita, Zenichi. 1974. Miso no shurui [Varieties of miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 21-25. Dec. [Jap]

Address: Chuo Miso Kenkyujo, Tokyo, Japan.

1721. Miyasaka, Masaaki. 1974. Kansô miso [Dried miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 72-76. Dec. [Jap]

Address: Miyasaka Jozo K.K., Japan.

1722. Miyazaki, Motoyoshi. 1974. Miso no eiyô [Nutritional value of miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 32-34. Dec. [Jap]

Address: Kokuritsu Eiyô Kenkyujo.

1723. Nakano, Masahiro. 1974. Miso no jukyû no genjô to shôraisei [The present condition and the future prospects for the demand and supply of miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 26-31. Dec. [Jap]

Address: Professor, Meiji Daigaku Nogakubu.

1724. Ogata, Mikio. 1974. Karamiso [Salty miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 61-65. Dec. [Jap]

Address: Fukuoka Kogyo Shikenjo, Fukuoka-ken, Japan.

1725. Ueda, Atsumu. 1974. Kôji ni yoru miso no seizô [Miso production using koji]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 35-40. Dec. [Jap]

Address: K.K. Hinode Miso Jozo Moto, Japan.

1726. Yoshii, Hisao. 1974. Mame miso [Soybean miso]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 66-71. Dec. [Jap]

Address: Aichi-ken Shokuhin Kogyo Shikenjo.

1727. Yoshii, Hisao. 1974. Kôsozai riyô ni yoru miso no seizô [Miso production using enzymes]. *Shoku no Kagaku (Food Science Journal)* No. 21. p. 41-45. Dec. [Jap]

Address: Aichi-ken Shokuhin Kogyo Shikenjo.

1728. Fu, P'ei-mei. 1974-1976. Peimei shi pu [Pei Mei's Chinese cook book. 2 vols.]. Taipei, Taiwan. Illust. (color). No index. 22 cm. [Chi; Eng]*

• **Summary:** Volume 1 published April 1976, copyright 1969; vol. 2 published July 1974, copyright 1974. Chinese title also written *P'ei-mei shih p'u*. Address: Cooking teacher, Taipei, Taiwan.

1729. Central Bureau of Statistics (CBS), Indonesia. 1974. [Industrial census]. Indonesia. [Ind]*

• **Summary:** Contains the first statistics seen on commercial production of tempeh, tofu, Indonesian soy sauce (*kecap*), and Indonesian miso (*tauco*) in Indonesia. Producers are divided into 2 groups by size: Home industry (1-4 workers) and small scale industry (5 or more workers). The amount of soybeans processed in tonnes/year is as follows for home industry/small-scale industry: tempeh (1.8/12.3), tofu (3.8/15.2), soy sauce (0.8/3.7), and miso (4.7/6.3).

1730. **Product Name:** Eden Miso [Mugi (Barley), Hacho (Soybean), or Kome (Rice)].

Manufacturer's Name: Eden Foods, Inc. (Importer). Made in Japan.

Manufacturer's Address: 4601 Platt Rd., Ann Arbor, MI 48104. Phone: (313) 973-9400.

Date of Introduction: 1974.

New Product-Documentation: Ad in Soykraft. 1979. Summer. p. 38. "Traditional Soy Products from Eden Foods." "Eden miso is made from whole soybeans, grains, and sea salt, fermented at natural temperatures in cedar kegs. Barley miso (mugi), Soybean miso (hacho), Rice miso (kome), and Brown rice miso (genmai) are all available in 14 oz, 8.8 lb, 22 lb, and 44 lb sizes."

Eden Foods, Inc. 1991. Feb. "Eden Foods Product Overview." "1972-Trade relationship began with Muso Company, Ltd. of Osaka, Japan."

Talk with Ron Roller of American Soy Products (formerly of Eden Foods) in Saline, Michigan. 1991. Nov. 27. Originally Eden bought tamari and miso from Erewhon. Then Eden started importing them from Mitoku; they were importing from both Mitoku and Muso in the very beginning.

Letter from Bill Bolduc, a founder of Eden Foods. 1991. Dec. 4. Eden started to import a line of foods from Japan in about 1974 or 1975. Imports had definitely not yet started by the fall of 1973. Talk with Michael Potter, Chairman of Eden Foods. 1993. Oct. 31. These 3 varieties of miso

arrived with the first shipment imported from Mitoku in Japan.

1731. **Product Name:** 'Lima' Tamari (Soya Bean Sauce), and Miso (Soya Bean Paste).

Manufacturer's Name: Hofels Pure Foods Ltd.

Manufacturer's Address: England.

Date of Introduction: 1974.

New Product–Documentation: Listing in The Vegetarian Health Food Handbook (UK). 1974. p. 174.

1732. **Product Name:** Westbrae Natural Miso [2 Year Barley Miso, 2 Year Red Miso, Hatcho Miso (Aged 2 Years), or Soybean Miso (1-Year Waka Hatcho)].

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 1224 10th St., Berkeley, CA 94710.

Date of Introduction: 1974.

Ingredients: Barley Miso: Whole soybeans, barley, water, salt.

Wt/Vol., Packaging, Price: 1 lb poly bag.

How Stored: Shelf stable.

New Product–Documentation: Labels. 1974, undated. 3.5 by 5 inches. Black plus 1 color on tan. "Naturally fermented and aged in large wooden kegs. Packed on order and shipped without preservatives or additives of any kind." Labels. 1977. 4.5 by 3.5 inches. Paper. New design, with glossy gold, green, or red background. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. These were Westbrae's first soyfoods imported from Japan, from Mr. Kazama and Mitoku.

Westbrae Natural Wholesale Food Catalog. 1980. Spring. Red miso (*kome miso*) aged 2 years, brown rice miso (*genmai miso*) aged 1 year, barley miso (*mugi miso*) aged 2 years, Hatcho miso aged 2 years, soybean miso aged 1 year, natto miso. Each type comes in 1, 5, or 22 lb sizes. Red miso recommended retail price is \$1.36 per 1 lb bag. Westbrae now also sells Cold Mountain Miso (Red, Light Yellow, and Mellow White varieties).

Letter from Gordon Bennett. 1987. Oct. Gives year of introduction as 1974. Currently 8 varieties.

1733. Aihara, Cornelia. 1974. How to make miso using mugi koji (fermented barley). *Macrobiotic (The) (Chico, California)* No. 98. p. 53-55.

• **Summary:** Gives a large-scale recipe using 30 lb soybeans, 20 lb barley, 15 lb salt, and 7 cups barley koji. The mugi koji can be ordered from Janus Natural Foods, 1523 Airport Way, Seattle, Washington 98134. Or from Chico-San Inc., 1144 West First St., Chico, California 95926. Address: Chico, California.

1734. Altschul, Aaron M. ed. 1974. New protein foods. Vol. 1A. Technology. New York, NY: Academic Press. xiv + 511 p. [1750* ref]

• **Summary:** Contains 10 chapters by various authors. Five of these are cited separately. Address: Dep. of Community Medicine & International Health, Georgetown Univ. School of Medicine, Washington, DC.

1735. Bryant, Clare. 1974. Everyday vegetarian and food reform cooking. Shaldon, England: Keith Reid Ltd. 143 p. Illust. by Graham Searle. 23 cm. Recipe index.

• **Summary:** Soy-related recipes include: Miso soup (p. 19). Soy bean cake (made with whole soy beans, p. 45). Miso wakame soup (p. 90).

Page 137 lists "Meat Substitutes" including "Protoveg: Texturised vegetable protein made to look and taste like meat in several flavours." "Soyapro: A tinned [canned] texturised vegetable protein. Many other brands of TVP will appear on the market in the years to come."

1736. Corlett, Jim. 1974. Super natural cookery: Recipes for vegetarian gourmets. Newton Abbot, Devon, England, London, and Vancouver: David & Charles. 96 p. Illust. by Dave Colin. Index. 21 cm. [10+ ref]

• **Summary:** Among the "New Words" (p. 8) are miso and tekha [sic, tekka] powder (made from miso). Soy-related recipes include: Lentil, carrot and soy soup (p. 17). Soybean sprouts (p. 38). Gluten (Seitan, p. 56). Soy bean flours (p. 56). Soy sweet (dessert with soy flour. p. 56). Gluten cutlets (. 64). Soy bean cheese (to fu, p. 67). Soy sprouts (p. 67). Sakura's vegetable sukiyaki (with tofu, p. 69).

An identical 1975 edition was published in Washington, DC, by Acropolis Books. Address: England.

1737. Hannaford, Kathryn. 1974. Cosmic cookery. Berkeley, California: Starmast Publications. xixd + 264 p. Illust. by Lorena Laforest. 21 cm.

• **Summary:** This vegetarian cookbook contains 190 recipes created and tested at the communal One World Family Natural Foods Restaurant. Page 35 lists uses and seasonings of beans, including aduki beans and soy beans. Favorite seasonings for the latter are thyme, oregano, basil, green pepper, tomato, cheese, soy sauce, onion, or garlic. Soy-related recipes include: Soy grits (p. 75). Macroburger mix (with cooked soybeans, p. 83). Soy mayonnaise (with soy milk powder, p. 111). Chunky soy spread (p. 130). Miso tahini spread. Creamy soy spread (p. 131). Miso soup (p. 144). Miso-scallion broth (p. 145). Macro-sausage (with Soy Spread, p. 163). Spaghetti with miso sauce (p. 176). Super soybean casserole (p. 182). Miso sauce (p. 200). Soya carob nut brownies (with soy milk powder, p. 227). Address: Berkeley, California.

1738. Himalayan International Institute. 1974. *The Yoga way cookbook*. 1st ed. Honesdale, Pennsylvania: Himalayan International Institute. 203 p. *

• **Summary:** This is a natural foods, vegetarian cookbook. Page 7 contains basic information about various soyfoods. Soy-related recipes include: Soybean rice (p. 37). Soy burgers (p. 38). Soy tacos (p. 39). Miso soup (p. 99). Tofu-avocado sandwich (p. 193). Tofu salad dressing (p. 194).

1739. Hunter, Beatrice Trum. 1974. *Favorite natural foods: Adapted from a series of programs on WGBH, Boston*. New York, NY: Simon and Schuster. 219 p. Index. 21 cm. [154 ref]

• **Summary:** Contents: Foreword. 1. Vegetables, vegetables. 2. Perking up the salad bowl. 3. Sprouts (incl. legume seeds {alfalfa, chick pea, lentil, mung bean, peanut, pinto bean, soybean}, grain seeds, vegetable seeds, herb seeds, weed seeds, oil seeds {flax, safflower, sesame, sunflower}). 4. Whole grains. 5. The Cornell mix [for bread; Dr. Clive McCay]. 6. Sourdough. 7. Sauerkraut. 8. Yogurt. 9. Soybeans. 10. Satisfying that sweet tooth: Dried fruit desserts, confections, snacks. 11. Of special concern: Baby foods, brown-bagging, party fare, making good foods even better. Appendix.

Contents of chapter 9, Soybeans: Introduction. Soybean sprouts. Fresh green soybeans as a vegetable: Freezing, canning, drying. Recipes for whole dry soybeans (2). Making soybean pulp (put cooked, drained soybeans through a meat grinder; recipe for green peppers stuffed with soybean pulp). Roasting dry soybeans (soak, drain, and dry roast). Making soybean milk (recipes for spiced soybean milk, brown rice pudding with soybean milk). Making soybean curd (also called “soybean cheese” or “tofu.” From soybean milk, from fermented soybean milk, from soybean flour, from soybeans). Using soybean flours (three types: high-fat or full-fat, low-fat or medium-fat, minimum-fat or fat-free). 100% soybean flour cookies (grain-free). Other soybean products you can buy: Soybean grits and soybean flakes (with 1 recipe). Soybean lecithin (with 2 recipes). Tamari, miso. The soybean and you: Meat alternatives, tempeh, textured vegetable protein products (inferior), fabricated soy foods in school lunch programs (“a nutritional crime”). Avoid mock foods.

About the author: She is the author of numerous books and winner of the French Company’s Tastemakers Award. She and her husband, John, live in New Hampshire. Nationally known for her lectures and demonstrations on natural foods, she is a member of the Price-Pottenger Nutrition Foundation and twice a speaker for the Martha Jones Lectures in Nutrition at the Ashbury Theological Seminary in Kentucky. She holds a B.A. from Brooklyn College and a Master’s degree from Columbia University. She has done graduate work at State Teachers College in Buffalo, New York, and at Harvard University. A small

photo of Beatrice Trum Hunter appears on the front dust jacket of the hardcover edition. Address: New Hampshire.

1740. Iwata, Hisayoshi. 1974. *Shokuhin kagaku* [Food science]. Tokyo: Yokendo. 370 p. Illust. Index. 22 cm. [150+* ref. Jap]
Address: Tokyo, Japan.

1741. Kao, Chuan. 1974. *Fermented foods from chickpea, horsebean, and soybean*. PhD thesis, Kansas State University. 143 p. Page 2250 in volume 35/05-B of *Dissertation Abstracts International*. *
Address: Kansas State Univ; PrAlBeBr.

1742. Kawamura, Wataru; Tada, Kazue. 1974. *Misoshiru hyakka* [Encyclopedia of miso soups]. Tokyo: Kosei Shuppansha. 230 p. Illust. No index. 19 cm. [Jap]

• **Summary:** Contents: Part I: Lecture of the miso scholar (sensei) (by Wataru Kawamura): 1. How to make delicious miso soups (recipes). 2. A talk about miso. 3. A talk about dashi soup stocks. 4. True stories. 5. About garnishes for soups. 6. Miso soups and health. 7. Topography/geography of miso. Part II: 100 selected miso soups in spring, summer, fall and winter (by Kazue Tada). In the beginning: Spring. Summer. Fall. Winter. Miso soups of homeland country villages (recipes). Miso teacher’s quick memos (hints).
Address: Miso teacher, 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan.

1743. Kikuchi, Grace. 1974. *Tofu recipes*. Ann Arbor, Michigan: Published by the author. 47 p. Illust. by Lou Bohr. No index. 22 cm. Spiral bound.

• **Summary:** This is the first book on tofu ever published in the Western world or in a European language. The author’s formal married name is Mrs. Chihiro Kikuchi. Contents: 1. To begin with: Homemade tofu, okara. 2. Soups and sauces: Clear and miso soups, mushroom tofu soup, tofu sauce for vegetables. 3. Poached, steamed, fried: Hiyadofu—chilled, yudofu—hot, stewed tofu, fried tofu, steamed tofu, ganmodoki. 4. Pots—one dish meals: Hamanabe, fresh pork and vegetables, chicken mizutaki, sukiyaki, shabu shabu, sin sul lo. 5. With fish: Seafood mizutaki, tofu steamed with fish, tofu with flounder, sakamushi, tofu and tuna fish. 6. With this and that: Stir-fried tofu, soboro domburi, mandoo, meatballs made with tofu, tofu with scrambled eggs, tofu with pork and miso, beef with tofu and chili peppers. Glossary. Address: 260 Sumac Lane, Ann Arbor, Michigan 48105.

1744. Kobayashi, Keizō. 1974. *Shōjin ryōri nyūmon* [Entry gate to Zen vegetarian cookery]. Tokyo: Shibata Shoten. 230 p. Illust. 22 cm. [Jap]

• **Summary:** The author was born in 1930. Address: Formerly asst. head cook at Eiheiji Zen Monastery. Now

head priest, Rinsho-ji, Tateoka, Murayama-shi, Yamagata prefecture.

1745. Kozel, Carlos. 1974. *Guía de medicina natural. I. Salud y curación* [Guide to natural medicine. I. Health and healing]. Viladrau (Gerona prov.), Spain: Ediciones Cedel. xii + 467 p. Illust. 23 cm. Vol. 1 of his *Guía de Medicina Natural* [Guide to Natural Medicine]. [Spa]

• **Summary:** About natural food and vegetarianism. Pages 185-91 discuss soya, which is called “vegetable meat” and from which one can obtain lecithin, soymilk, whole soy flour, miso, tofu, shoyu, etc. The nutritional composition of soybeans is given.

1746. Lo, Kenneth H.C. 1974. *Chinese vegetable and vegetarian cooking*. London: Faber & Faber, Ltd. 172 p. Index. 21 cm.

• **Summary:** This original edition, published in London, is smaller in height, has no illustrations, and 13 fewer pages than the American edition published the same year. The recipes are the same, but on slightly different pages; For details, see the American edition (1974).

1747. Lo, Kenneth H.C. 1974. *Chinese vegetarian cooking*. New York, NY: Pantheon Books (Div. of Random House). 185 p. Illust. by Tom Funk. Index. 22 cm.

• **Summary:** Originally published in 1974 in London, England, as “Chinese Vegetable and Vegetarian Cooking” by Faber & Faber, Ltd. However that book is smaller in height, has no illustrations, and 13 fewer pages than this American edition. The entire text has been lightly edited and re-set for American cooks and readers. The recipes are basically the same, but on slightly different pages, and with some titles slightly changed (e.g., from “sesame jam” to “sesame paste,” p. 133).

In the Introduction, under “Flavoring,” the following soybean products are listed: Soy sauce, black beans (salted), soybean paste (yellow and black), bean-curd cheese (red and yellow). Soy-related recipes include: Steamed bean curd with peanut butter sauce (p. 50). Hot-marinated bean-curd sticks [dried twisted yuba] with quick-fried [mung] bean sprouts (with “yellow bean-curd cheese” [fermented tofu], p. 60-61). The Lo Han dish of the monks’ mixed vegetables (with tofu, and “red bean-curd cheese” [fermented tofu], p. 72-73). Hot assembly of shredded bamboo shoots and bean curd... (with tofu and “bean-curd cheese” [fermented tofu], p. 74). Hot assembly of chestnuts, sliced lotus root, ginkgo nuts, peanuts, Chinese mushrooms, and bean curd (with tofu and “white bean-curd cheese” [fermented tofu], p. 75). Hot black bean and tomato sauce (Ratatouille Chinoise; with salted black beans and soybean paste, p. 82-83). Basic bean-curd soup (p. 105). Enriched bean-curd soup (p. 105). Soy eggs (with soy sauce, p. 125).

Note 1. This is the earliest English-language document seen (Feb. 2007) that uses the terms “yellow bean-curd cheese” or “red bean-curd cheese” or “white bean-curd cheese” to refer to fermented tofu.

There is an entire chapter titled “Bean Curd” (p. 135-48), with an introduction and the following recipes: Cold bean curd (with soy sauce and peanut oil). Cold bean curd with sesame paste or peanut butter (“Use 1½ tablespoons sesame paste,” p. 136). Hot-and-savory bean-curd pudding (with salted black beans). Hot-and-pungent bean-curd pudding. Red-cooked bean curd with bean-curd sticks [yuba] (with soybean paste and soy sauce; the sticks are about 20 inches long). Stir-fried bean curds. Bean curd stir fried with [mung] bean sprouts or spinach. Bean curd stir fried with green beans. Deep-fried bean curd stir fried with duck eggs and cucumber skins. Deep-fried bean curd stir fried with eggs, mushrooms, and wood ears. Stir-fried shredded bean curd with dried bamboo shoots, dried mushrooms, lily-bud stems, and seaweed. Clear-simmered bean curds. Clear-simmered bean curd with lettuce and cellophane noodles. Clear-simmered bean curd with [mung] bean sprouts, water chestnuts, and sliced cucumbers.

Note 2. This is the earliest English-language document seen (June 2003) that uses the term “sesame paste.”

1748. Newman, Marcea. 1974. *The sweet life: Marcea Newman’s natural-food dessert book*. Boston, Massachusetts: Houghton Mifflin Co. 161 p. Illust. by Linda Stine. Index. 29 cm. A 1981 revised edition contained 176 p. [63* ref]

• **Summary:** This early and beautifully presented natural foods cookbook contains very innovative and tasty tofu dessert recipes made with limited natural sweeteners and no dairy products. It discusses the harmful effects of refined and denatured foods, with details on white flour, sugar, oil, salt, eggs, milk, and baking powder [which contains alum, a product of aluminum; “it may even be harmful”].

Chapter 1, titled “Natural necessities: Equipment, techniques, and ingredients,” gives good definitions of and introductions to amasake (p. 6), miso (p. 10), tamari (p. 12), and tofu (soybean cheese, p. 13). Soy-related recipes include: Basic cake II with tofu sour creame (p. 25). Cheesecake tofu pie (p. 37). Cantaloupe cheesecake (p. 37, with tofu). Upside-down tofu cake (p. 38). Mincemeat filling with miso (p. 50-51). Tofu poppy seed filling (for pastries or phylo, p. 53). Instant tofu creame (p. 59). Tofu creame (p. 59). Tofu creame whip (p. 60). Tofu sour creame I and II (p. 60). Tofu custard (p. 62). Apple tofu delight (p. 82). Creame puffs with amasake filling (p. 82). Cherry tofu strudel (p. 88). Tofu sour creame cherry tart (p. 92). Thanksgiving squash-mincemeat pie (with miso in the filling, p. 98-99).

The inside dust jacket gives a brief biography of the author, who was born and raised in New York. In Berkeley,

California, she studied Japanese and natural-food cooking, and helped to start a “noodle bar” where she baked her first dessert. Now she lives in Boston and caters weddings, parties and school fairs with natural and organic foods and desserts.

An Appendix (p. 151-52) lists the name and address of 39 suppliers of natural foods in the USA (divided by region), and 2 in Canada. This list includes the following companies: Erewhon Trading Co. (33 Farnsworth St., Boston, Massachusetts 02210), Good Nature Distributing Co. (Box 447, Export, Pennsylvania 15632), Infinity Co. (173 Duane Ave., New York, NY 10005), Shadowfax (25 N. Depot St., Binghamton, NY 13901), Sundance Organic Food (R.D. #1, Box 146A, Coventry, Connecticut 06238), Walnut Acres (Penns Creek, Pennsylvania 17862; founded by Paul Keene), Collegedale Distributors (Box 492, Collegedale, Tennessee 37315), Laurelbrook Foods (Box 47, Bel Air, Maryland 21014), Tree of Life (Box 1391, St. Augustine, Florida 32084), Ceres, Inc. (2582 Durango Dr., Colorado Springs, Colorado 80910), Cliffrose (129 Coffman St., Longmont, Colorado 80501), Eden Foods (Box 100, Ann Arbor, Michigan 48107), Food for Life (420 Wrightwood St., Elmhurst, Illinois 60126), Akin Distributors (Box 2747, Tulsa, Oklahoma 74101), Arrowhead Mills (Box 866, Hereford, Texas 79045), Shiloh Farms (Box 97, Sulphur Springs, Arizona 72768), Sunrise Distributors (Box 5216, Phoenix, Arizona 83010), Erewhon Trading Co. (8454 Steller Dr., Culver City, California 90230), Janus Natural Foods (1523 Airport Way, South, Seattle, Washington 98134), New Day Distributors (1242 S. Berendo St., Los Angeles, CA 90006), The Well/Pure & Simple (795 West Hedding St., San Jose, CA 95126), Lifestream Natural Foods, Ltd. (724-26 W. 6th Ave., Vancouver 9, BC, Canada), and Natural Foodstuffs (1 Main St., Box 27, Sutton, Quebec, Canada).

Note: This book contains the earliest recipe seen (Dec. 2005) for a tofu cheesecake. It is also the earliest English-language document seen (Dec. 2005) that uses the term “cheesecake tofu pie” to refer to a tofu cheesecake. For the story of how Marcea got interested in tofu and wrote this book see: Marcea Newman. 1994. Oct. Re: Early work with tofu and tofu cheesecakes in America. Address: Boston, Massachusetts.

1749. Ohsawa, Lima. 1974. *The art of just cooking*. With Nahum Stiskin. Hayama, Japan and Brookline, Massachusetts: Autumn Press. 216 p. Illust. by Maurice Owen. Index. 19 x 23 cm. Reissued in 1984 as *Macrobiotic Cuisine* by Japan Publications, NY. 175 p. [26 ref]

• **Summary:** This work is based on Lima’s Japanese-language book titled *Macrobiotic Cookery* (1971). In 1953, at age 54, Lima Ohsawa first ventured beyond the shores of her native Japan. She and her husband, Georges Ohsawa, left on their first world tour. In 1955-56 they spent time with

Dr. Albert Schweitzer in Lambarene, Gabon. “Being vegetarian Dr. Schweitzer was always very interested in the nutritional assets of the soybean and asked me to show him different ways to prepare it” (p. 10). During this and many subsequent travels, Lima learned many traditional, natural recipes from around the world.

Contains numerous Japanese macrobiotic style recipes. Page 32 gives good definitions of miso and shoyu. Soy-related recipes include: Brown rice with soybeans (p. 53). Inarizushi (p. 55). Brown rice porridge with vegetables and miso (p. 58). Soya omochi (mochi with soya flour). Burdock with miso and lemon peel (p. 90). Broccoli and radish with miso dip (p. 92). Carrot with green beans and tofu (p. 95). Ninjin shiro-ae (with tofu, p. 93). Cucumber with wakame and walnut miso (p. 96). Cucumbers with miso and sesame (p. 97). Onion nitsuke with miso (p. 100). Onion goma-miso-ae (onion with sesame miso, p. 100). Eggplant nabeshigi-yaki (with miso, p. 101). Scallion and aburage nitsuke (p. 101). Scallion dengaku (with miso, p. 102). Renkon ikada age with kuzu-lemon sauce (p. 103). Kabocha miso ni (p. 106). Kabu miso-ae (turnips with sesame miso, p. 109). Daikon age rolls (with aburage, p. 114). Vegetable skewers with koya-dofu (dried-frozen tofu, p. 114). Kombu with shoyu (p. 117). Renkon miso inro (lotus root tempura with miso, p. 123). Coltsfoot buds with miso (p. 126). Wakame miso soup (p. 137). Mugi-miso soup (p. 137). Sake-no-kasu jiru (miso soup with sake lees, p. 137). Go jiru (soybean potage with aburage, p. 141). Oden with ninjin and gobo kombu maki (with aburage, p. 146).

Condiments and pickles (p. 154-57): Gomashio (sesame-salt). Tekka miso (sauteed vegetables with miso). Shigure miso (moist tekka). Miso sauté. Soybeans with miso and burdock. Soybeans with miso. Miso pickles (fall and winter). Sauces, spreads and salad dressings (p. 161-63): Lemon shoyu. Ginger shoyu. Orange shoyu. Tsuje-jiru dipping sauce (with shoyu). Goma joyu sauce (with shoyu). Scallion miso. Walnut miso. Citron miso. Goma miso (sesame).

Beans (p. 165-78). Black bean ni (the black beans are actually black soybeans. “In Japan this exquisitely sweet dish is a must on New Year’s Day. It gets even sweeter after standing for a day or two”). Gomoku-mame (soybean nitsuke).

Tofu ryori (p. 173-78; “Tofu or bean curd is rich in vegetable protein. Although it is rather *yin* in our classification of foods, the recipes I have included here balance its *yin* characteristics with *yang* so don’t hesitate to use it occasionally. It’s delicious in miso soup, stews and *nabe*, and as a dish by itself. It is available at Oriental food shops and can also be made at home.”): Homemade tofu. Unohana pouches (with okara and aburage). Gammodoki. Tofu with kuzu sauce. Tofu roll. Koya-dofu sandwich. Tofu nitsuke. Chinese dow-foo oroshi-ae. Tofu mold (with kuzu). Tofu tempura. Goma dofu (sesame tofu).

Squid and scallion miso-ae (p. 183). Salmon head soup (with soybeans, p. 183). Surimi shinoda (with aburage, p. 184). Red snapper in miso. Koi koku (with miso, p. 184). Egg tofu (p. 185). Amazake manju (sweet sake dumplings, p. 198). Amazake (homemade, using glutinous “sweet” brown rice, p. 207).

The section titled “*Kofu*: Wheat Gluten” (p. 85-86) includes recipes for Homemade kofu (wheat gluten, including Kofu loaf and Seitan), and Kofu cutlet. “First introduced to Japan from China by Buddhist monks, *kofu* became a very popular food in Zen temples. It is delicious in soups and stews and mixed with sautéed vegetables. *Kofu* cutlet looks, feels, and tastes like meat.” Seitan is made by simmering 5 cups cold wheat gluten, separated into small pieces, for 3 hours in shoyu, sesame oil, and minced gingerroot.

Dandelion coffee (made from roasted, ground dandelion root) and Yannoh (prepackaged grain coffee, made from 5 different grains) are described on p. 206-07.

The book, which contains many fish recipes, begins with a nice photo of Lima at age 75—she looks 20 years younger—and ends with a good glossary. Lovely illustrations, a wealth of original information on Japanese foods.

Note 1. This is the earliest document seen (July 2000) that mentions “Tekka miso” (spelled that way).

Note 2. This is the earliest English-language document seen (Feb. 2005) that used the word “kofu” to refer to wheat gluten. Address: Tokyo, Japan.

1750. Sandler, Sandra Takako. 1974. *The American book of Japanese cooking*. Harrisburg, Pennsylvania: Stackpole Books. 192 p. Illust. Index. 24 cm.

• **Summary:** The author, a third generation Japanese-American, reveals the secrets of successful Japanese-style cooking—specifically for the American cook. The three introductory chapters discuss tofu (p. 16, 23, 29, 36), shoyu (p. 20), and miso (p. 27, 35). Soy-related recipes include: Seafood in miso sauce (p. 54). Shellfish in soy-mirin sauce (p. 55). Miso soups (p. 57-59). Tofu & scallions soup (p. 60-61). Instructions for sprouting beans (incl. mung- and soybeans, p. 72-74). Vegetables with tofu & sesame dressing (with white miso, and “white sesame seeds, toasted and ground,” p. 77-78). Eggplant and green peppers with miso dressing (p. 78-79). Fried okara (p. 79-80). Sweet cooked soybeans (p. 82). Inari-zushi (p. 89-90). Fish misoyaki (p. 111). Miso abalone (p. 112-13). Beef misoyaki (119-20). Sukiyaki (with tofu and soy sauce, p. 121-22). Pork and tofu (p. 135-36). Stuffed tofu (p. 138-39). Chicken teriyaki (with soy sauce, p. 145). Fresh tofu (p. 154-55). Homemade tofu (p. 155-57). Deep-fried tofu (p. 157). Batter-fried tofu (p. 158). Yakidofu (p. 158-59). Aburage (p. 23, 159). Fox noodles (p. 167-68). Udon in miso shiru (p. 168). Tempura and udon (p. 168-69). San bai zuke (p. 175).

Also discusses azuki beans (p. 23, 178), sweet azuki bean paste (*koshi-an*), sesame seeds, sesame oil (p. 28), sea vegetables, and mochi.

1751. Shinoda, Osamu. 1974. *Chûgoku shokumotsu-shi* [History of foods and diet in China]. Tokyo: Shibata Shoten. 389 p. Illust. Index. 21 cm. [Jap]

1752. Watanabe, Tokujii; Ebine, H.; Okada, M. 1974. *New protein food technologies in Japan*. In: A.M. Altschul, ed. 1974. *New Protein Foods*. Vol. 1A. Technology. New York: Academic Press. 511 p. See p. 414-53. Chap. 9. [80 ref]

• **Summary:** Contents: Introduction: Soy products, fish products, enzyme applications. Tofu: General description, new materials, new type products, large-scale production, trends in cost, kori-tofu and aburaage. Miso: General description, new technologies, new type products, problems of mycotoxin, packaging and preservation, trends in cost and consumption. Kamaboko and fish sausage—fish jelly: General description, new technologies, new materials—frozen surimi, packaging and preservation, trends in consumption. Textured vegetable protein: Soybean protein curd, wheat gluten, soybean protein sponge. Hydrolyzed vegetable protein (HVP). New enzyme applications: Liquefied fish protein concentrate (LFP), collagenase for poultry processing, removal of beany flavor from soybean by enzyme treatment, microbial rennet. The protein food structure of Japan.

Fig. 13 (p. 47) shows 3 pie charts, each giving the percentage of protein intake per capita from various sources at three different time periods. In 1921-25 only 9% of the total protein came from animal sources (6% from fish and 3% from other animal sources); 42% came from rice, 21% from soybeans, and 14% from cereal grains other than rice. In 1951-55, shortly after World War II, some 23% of the total protein came from animal sources (17% from fish and 6% from other animal sources—such as milk, eggs, chicken, pork, and beef); 32% came from rice, 15% from soybeans, and 20% from cereal grains other than rice. In 1969, some 30% of Japan’s total protein intake came from animal sources (21% from fish and 19% from other animal sources); 22% came from rice, 12% from soybeans, and 13% from cereal grains other than rice. Thus the main trend seen during this period is the steady increase in the percentage of protein from animal sources and the corresponding decrease from plant sources. Source: Food Balance Sheet. 1970. Ministry of Agriculture and Forestry. Fig. 14 shows that these trends are apparently related to increasing per capita income and GNP. Address: 1-2. National Food Research Inst., Ministry of Agriculture and Forestry, Tokyo, Japan; 3. Tokai Regional Fisheries Research Lab., Fishery Agency, Ministry of Agriculture and Forestry, Tokyo, Japan.

1753. Chuo Miso Kenkyujo. 1974? Miso no hanashi [About miso]. Tokyo: Zenkoku Miso Kogyo Kyodo Kumiai Rengokai. 10 p. Undated. [Jap]

• **Summary:** An excellent source of statistics on types of Japanese miso and composition by type. Contains many color tables. Address: Tokyo, Japan.

1754. Janus Natural Foods. 1974? Home made mugi miso (Leaflet). Seattle, Washington. 2 p. Undated. 28 cm.

• **Summary:** Describes in detail how to make miso at home using 20 lb soybeans, 20 lb barley koji (dried), and 8 lb salt. Janus sells barley koji.

Note: This is an excellent, accurate recipe, with exact ingredients, a 12-step process, and many notes. Address: 1523 Airport Way South, Seattle, Washington 98134. Phone: (206) 624-1084.

1755. Canupp-Penrod, R. Lewis. 1975. Soy you want soy sauce [Make yer own]. *Mother Earth News* No. 31. Jan. p. 36-37. [2 ref]

• **Summary:** The author is writing a book on soybean products. "Perhaps the best description of the basic chemical process involved [in making soy sauce] was given by a traveler named Bishop, who visited Korea between 1894 and 1897. He wrote, 'Oil of sesamum is largely used in cooking, as well as vinegar, soy and other sauces of pungent and objectionable odors, the basis of most of them being capsicums and fermented rotten beans.' In Bishop's time, Koreans made soy sauce in the fall, after the harvesting of the dried soybeans." He proceeds to describe the ancient Korean process for making mei-ju [meju, soybean koji] and from it soy sauce.

Then he describes briefly how to make Korean miso (*toin-chang {doen-jang}*), tofu (*yu-bu*), soybeans boiled in soy sauce (*kong-cha-ban*), dry roasted soynuts, soy sprouts, and pickled soy sprouts.

Illustrations show: (1) A truncated cone of pounded soybeans, 8-10 inches high by 12 inches in diameter, as it begins its period of fermentation on a homemade mat of cattail leaves. (2) The cone is later enclosed in tapered strips of unbleached muslin and hung from a hook—as under the eaves or a rafter.

1756. Kushi, Michio. 1975. The unifying principle in the world of biology; Natural agriculture and home food processing. *Michio Kushi Seminar Report (Brookline, Massachusetts)*. Winter. No. 5. Feb. 11. p. 13.

• **Summary:** A student asks "Should miso be boiled or not?" Kushi answers: "It doesn't matter. Again, it depends upon what you want. If you want to have yin type of miso with plenty of enzymes present in the soup to aid in good digestion, then you should not boil the soup after adding the miso. But, if you would like to have a strong miso soup which will make you yang, then you can boil it. This is a

very controversial argument among macrobiotic people: should miso be boiled or not. It is a controversy not only in America but all over the world." Address: Brookline, Massachusetts.

1757. Laurelbrook Foods. 1975. A little bit about our food. Bel Air, Maryland. 6 p. Feb. 28 cm.

• **Summary:** Laurelbrook now distributes about 43 different food products, plus 7 non-food products. Each of these is described, including wheat, brown rice, soy flour (ground from lightly toasted beans by arrowhead mills), granola, tamari ("High quality soy sauce from Japan, made from whole soybeans, wheat and sea salt..."), miso ("A thick soybean paste from Japan." Hacho miso, Mugi miso, and Kome miso are available), Deaf Smith peanut butter, vegetable oils (expeller pressed and unrefined), sea vegetables, kuzu, umeboshi (salt pickled plum with chiso [shiso, aojiso] leaf). Address: P.O. Box 47, Bel Air, Maryland 21014; Raleigh Branch: 330 W. Davie St., Raleigh, North Carolina 27601.

1758. McCormick, Sally. 1975. Azuma Sukiyaki House: Authentic Japanese cuisine and atmosphere!—5120 N. Broadway, Chicago (Ad). *Chicago Tribune*. March 15. p. G10.

• **Summary:** Azuma is Chicago's oldest and finest Japanese restaurant. "The Azuma dinner includes Sukiyaki, a generous portion of prime rib slices with fresh mushrooms, bamboo shoots, Tofu (soy bean cakes), Shiratake [Shirataki] (yam noodles) [thin konnyaku noodles] and assorted fresh vegetables." Azuma also serves Cold tofu [Hiya-yakko], Miso shiru [Miso soup], Beef Teriyaki, Chicken Teriyaki and Salmon Teriyaki. Four photos show Azuma Sukiyaki House.

Note: A similar ad appeared in the 9 Oct. 1975 (p. N17) issue of this newspaper.

1759. Kushi, Michio. 1975. The unifying principle: Excerpt from the Book of Miso by Aveline Kushi. *Michio Kushi Seminar Report (Brookline, Massachusetts)*. Winter. No. 9. March 24. p. 25-31. [2 ref]

• **Summary:** Contains a description of "What is miso?" by Michio Kushi, and the "Song of Miso," a poem translated from the Japanese book *Miso Daigaku* by Mr. Kan Misumi. Its many Japanese terms are explained in footnotes. Address: Brookline, Massachusetts.

1760. Spiral Foods Inc. 1975. Wholesale price list. Chico, California. 4 p. April 1. 28 cm.

• **Summary:** This two-sheet catalog and price list, consisting of two pages stapled in the upper left corner, is printed front and back with reddish-orange ink on tan paper. The first item is five cookbooks, including *The Art of Just Cooking*, by Lima Ohsawa. The soy-related products are similar to

those in the 1974 catalog. Address: 1144 West 1st Street, Chico, California 95926. Phone: 343-2111.

1761. Spiral Foods Inc. 1975. Mail order price list. Chico, California. 4 p. April 1. 28 cm.

• **Summary:** This two-sheet catalog and price list, consisting of two pages stapled in the upper left corner, is photocopied front and back with black ink on white paper. Address: 1144 West 1st Street, Chico, California 95926. Phone: 343-2111.

1762. Kozaki, Michio. 1975. Tōnan Ajia no hakkō shokuhin [Southeast Asian fermented foods]. In: Nippon Shokuhin Kogyo Gakkai (Japanese Society for Food Science and Technology), 22nd Convention: Special Lectures and Symposium. See p. 12-20. [Jap]
Address: Tokyo Nogyo Daigaku, Sakuraoka 1-1-1, Setagaya-ku, Tokyo, Japan.

1763. Jenks, John. 1975. Vitamin deficiency in vegetarians. *East West Journal*. May. p. 22-23. [1 ref]

• **Summary:** Mentions miso and sea vegetables as vegetarian sources of vitamin B-12. Address: Graduate student in nutrition, Univ. of Rhode Island, and a medical student at Hahnemann [Hahnemann?] Medical College, Philadelphia.

1764. Shurtleff, William. 1975. Miso: A soybean miracle food. *East West Journal*. May. p. 24-25. [1 ref]

• **Summary:** Pre-publication excerpt from *The Book of Miso* by Shurtleff and Aoyagi. Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

1765. Shurtleff, William. 1975. Letters: Tofu and miso. *East West Journal*. June 15. p. 3.

• **Summary:** "For the past four years, I have been living in Japan, studying and writing books about tofu and miso. This summer, the Japanese cook and artist with whom I have been working, Akiko Aoyagi, and I will be visiting communities and natural food centers around the United States teaching about these fine, traditional soybean foods so high in protein and low in cost. Anyone interested in learning to cook with or prepare tofu or miso on a family, community, or commercial scale, please write..." Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

1766. Imai, S.; Matsumoto, I. 1975. Aka-kara miso ni okeru teien-sei *Torulopsis*-gun no bunpu to bunri kabu no dōtei [Population of halophilic *Torulopsis* in red and salty miso and their identification]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 70(6):413-15. June. [12 ref. Jap]

Address: Niigata-ken Shokuhin Kenkyusho, Niigata, Japan.

1767. Erewhon Trading Co. [Los Angeles, California].

1975. Wholesale price list. July 1975. Culver City, California. 10 p. Catalog and price list.

• **Summary:** On the front cover is a copy of an analysis of carrots performed by Agri-Science Laboratories Inc. of Los Angeles. They contain no Organo-phosphates—None detected as Parathion < 0.010 ppm.

Products include: Whole grains. Cereals. Flours—Freshly milled whole grains (incl. Raw soy flour, organic). Beans (incl. Soybeans, organic, Texas {10 or 16 lb}, Soybean flakes, organic, Texas). Butters (incl. Peanut butter, Sesame butter). Applesauce. Carbonated drinks. Juice. Chips. Goodies. Nik's Snaks. Granola. Soybean products: Tamari soy sauce (4 sizes, 8 oz to 4.7 gal). Hacho miso, soybean paste (1 lb or 44 lb). Mugi miso, Barley-soybean paste (1 lb or 44 lb). Kome miso, Rice-soybean paste (1 lb or 44 lb). Sea vegetables. Specialties (incl. Kuzu arrowroot, umeboshi {Plums pickled in brine}, Sesame salt). Seeds. Nuts. Fresh produce—Organic. Dried fruit—Bulk. Dried fruit—Packaged. Books and flyers (Deaf Smith County Cookbook, Oil Story, Pasta Cooklet). Redwood rennetless natural cheeses (Raw or pasteurized). Pasta (Bulk or packaged, incl. Soya-rice shells). Salt. Oils (incl. Soy oil). Erewhon packaged goods: Grains, cereals, flowers, seeds, beans. Teas. Celestial Seasonings bulk herb teas or tea bags. Cosmetics. Cooking utensils.

Inserted is a letter on Erewhon letterhead from Loren M. Spector, general manager, dated 1 July 1975. It begins: "Dear customers: Please find enclosed our summer price list." On the back are "July specials." Address: 8454 Steller Dr., Culver City, California 90230. Phone: (213) 836-7569.

1768. Honorof, Ida. 1975. "Miso"—the miracle soybean food: Man does not live by amino acids alone. *Report to the Consumer* 5(106):104. July. [4 ref]

• **Summary:** Contains a long translation by Herman Aihara of Dr. Akizuki's account of miso soup curing victims of the Nagasaki atomic bomb. Address: P.O. Box 5449, Sherman Oaks, California 91493.

1769. Tara, René. 1975. Re: Interest in making miso.

Writing European macrobiotic cookbook. Letter to William Shurtleff at New-Age Foods Study Center, Aug. 17. 2 p. Handwritten, with signature. [1 ref]

• **Summary:** "I was so happy to see your note in the East-West Journal as I have for a long time wanted to learn more about miso making and different uses of the soybean. Do you have completed books that I might buy from you and if so how much?"

"I am in the process of writing a European Macrobiotic Cook Book and would like to discover how to do it in this country... We live in a small town more or less in the country. I am sorry I missed your article on miso & tofu but

it is not always so easy to get E.W.J. here. Please let me know about the books. Do you know Bev & Nahum Stiskin? Thank you." Address: 30 B Market St., Bradford-on-Avon, Wilts. [Wiltshire], England.

1770. Eden Foods. 1975. Wholesale pricelist. 4601 Platt Rd., Ann Arbor, MI 48104. 19 p. Aug. Catalog.

• **Summary:** This catalog is large enough to have a table of contents on page 1, along with an illustration (line drawing) of large windmills. Page 7 lists "Tamari, Miso & Condiments." Tamari Soy Sauce is now sold under 3 labels (Erewhon, Japan, and Lima-Chico San). Miso (Mugi, Hacho, and Kome) is also still sold under the Erewhon label. Mugi miso is described as "barley-soy paste" and Kome miso as "rice-soy paste." Also includes "Kuzu Arrowroot, Umeboshi Salt Plums (Erewhon), and Sea Salt-white French." Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

1771. Erewhon Trading Co. 1975. Erewhon talking food. Miso and tamari (Ad). *East West Journal* 5(10):43. Oct. 15.

• **Summary:** A lengthy description of how traditional miso and tamari (shoyu) are made in Japan and some philosophical reflections on the processes and ancient wisdom that created them. Address: Boston, Massachusetts.

1772. Erewhon Trading Co., Inc. 1975. Erewhon harvest '75. Boston, Massachusetts. 48 p. Oct. Catalog and price list.

• **Summary:** On the front cover, a brown and white photo shows a rustic farmer, holding a pitchfork, standing by his horse and hay wagon with wife and child. On the rear cover, Erewhon's president, Tyler Smith, writes a poetic passage about the beauty of wheat. Products include: Grains: Lone Pine in Arkansas grows organic short grain and long grain brown rice. Wehah Farms in California grows organic short grain brown rice and non-organic sweet brown rice [glutinous rice]. Baker in Louisiana grows organic medium grain brown rice. Organic hard red winter wheat is grown in Nebraska and in Deaf Smith, Texas. Organic hard red spring wheat is grown by Ted Whitmer in Montana and Ricke in Minnesota. Organic hard amber durum wheat is grown by Whitmer in Montana. Organic soft white pastry wheat is grown by Wild Winds in New York. Other organically grown grains are pearled barley (Idaho), whole unhulled buckwheat for sprouting, hybrid yellow or white corn (Deaf Smith), open-pollinated yellow corn (Minnesota), blue corn, whole oats, and rye. Cereals include organic soy flakes from Deaf Smith (25 lb). Flours include organic soybean flour (25 lb, steelground, full-fat). Pasta (packaged or bulk) includes Japanese soba, Soy Rice Shells.

Snacks from "Erewhon L.A." include Chico-San Yinnies, and Date-Nut Delight. Nik's Snaks (p. 8): This full page lists about 30 products. Of these, eleven are "tamari-

roasted" whole-food snacks. The 30 products are sold in 5 sizes: 2.5 oz, 3.5 oz, or 6 oz. pick-up packages, or 25 lb bulk. The soybeans (dry roasted with tamari, no salt) are sold only in 25 lb packs. Other tamari-roasted seeds include: Spanish peanuts, sunflower seeds, roasted almonds (all 2.5 oz or 25 lb), cashews or pumpkin seeds (25 lb). Non tamari-roasted products include: Raisin walnut mix. Roasted mixed nuts. Raw mixed nuts. Raisin nut mix. Peanut raisin mix. Trail mix (Honey almond granola, roasted peanuts, raw sunflower seeds, date pieces, raisins, and sea salt). Honey almond granola. Chia seeds. Bee pollen. Alfalfa seeds. Date sugar. etc. Erewhon Aztec organic corn chips. Baked goods from Cable Springs Bakery in Cambridge, Massachusetts. Fruit juices from Erewhon, Heinke's, Knudsen, Lehr's (natural grape juice from Germany), and Biotta (Swiss Vegetable juices).

Dairy Products: Cheeses from Alta Dena (also kefir and yogurt) in California, Superior Cheese Co. in Massachusetts, Redwood Natural Cheese Co. in California. Also Favorite Foods yogurt.

Dried fruit, including organically grown Monukka and Thompson raisins, prunes, dates, apricots, apples, Bing cherries, black mission figs, and Calimyrna figs. Peanut-, apple-, sunflower-, and sesame butters. Sesame tahini. Pure & Simple "fruit butters sweetened with honey only; terrific old-fashioned jams (apple, apricot, peach, plum, raspberry, strawberry, grape, cherry). Erewhon apple sauce. "Pumpkin Sour" apple sauce and apple butter made in Plainfield, Vermont. Tree of Life fresh fruit preserves from Florida (8 varieties).

Seeds & nuts, incl. Erewhon organic soybeans in 1-lb packs, and Erewhon organic stoneground soybean flour in 24-oz packs. Arrowhead Mills packaged products, incl. Bulghur-soy grits (24 oz), Soy flakes (16 oz, organic), Roasted soy flour (24 oz, organic). Beans, incl. Aduki (25 lb, from Japan or Mainland China), yellow soybeans (50 lb, organic, New York), black soybeans (25 lb, non-organic from Japan, or organic from New York), green soybeans [dry] (25 lb, organic). Erewhon granola (17 products, including various sizes), Arrowhead Mills granola, Back to Nature granola (unsalted).

Oils, incl. Arrowhead Mills soybean oil (pints, quarts, or 5-gallon jug). Honey. Baking, incl. Premose barley malt, and Yinnies grain syrup from Chico-San. Tea, incl. 2 pages from Celestial Seasonings, and Erewhon Mu tea (9 or 16 herbs), Lotus root tea, Kukicha-branch twig tea. Springwater.

Tamari & Miso: 4 pages of descriptions and prices for Hacho miso (all misos are sold in 1 lb or 44 lb keg), Mugi miso, Kome miso, Tamari soy sauce [actually shoyu] (8 oz, pints, quarts, ½ gallons, gallons, or 4.7 gallon tin), Barley koji (1 lb). Specialties, incl. Unrefined sun-dried sea salt with natural trace minerals from the north coast of Brittany in France, Tekka, kuzu, umeboshi, sesame salt, Herbamare

salt, nigari, brown rice vinegar, non-alcoholic beer (Birell, Kingsbury), Bambu instant coffee substitute.

Fearn Soya Foods: Soya granules, Soy-O wheat cereal, Soy-O corn bread & muffin mix, Soy-O bran muffin mix, Soy-O pancake mix–buckwheat, Soy-O pancake mix–wholewheat, Sesame burger mix, Natural soya powder.

Sea vegies: Agar-agar, dulse, hiziki, kombu, wakame, nori seaweeds (a description of each is given).

Erewhon certified organic produce, incl. Daikon grown in California. Soaps, incl. Cattier clay products and Dr. Bronner's Peppermint castile soap, Orjene, Nature's Gate, Tom's Natural Soap.

Cookware, mostly imported from Japan, incl. Soy [sauce] dispenser, 4½ inch. Growing [sprouts and sprouters]. Cast iron. Flyers, incl. Talking Food series, Natural recipes (3 by 5 inch tear-off pads. Soy-related recipes include: Soy au gratin, Soy casserole, Miso soup, Soyburgers, and Soy loaf).

A map shows Erewhon's delivery region (Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey) and schedule. The company also has an office near New York City at 303 Howe Ave., Passaic, New Jersey 07055. Phone 212-594-6455.

Note 1. This is the earliest document seen that uses the word "vegies" (spelled as such, one of two documents) to refer to vegetables, or "Sea vegies" to refer to sea vegetables (edible seaweeds).

Note 2. This is the earliest document seen (May 2006) that uses the term "trail mix" to refer to a non-perishable mixture of dried fruits, seeds, nuts, roasted soybeans, granola, etc. to be eaten as a snack, as when hiking or walking. Nik Amartseff coined the term "trail mix" and launched the first commercial trail mix product through Erewhon Trading Co. in 1974. At the time, Nik was studying and practicing macrobiotics in Boston, Massachusetts. By the late 1970s several brands of trail mix were on the market in both natural food stores and supermarkets; by the 1980s there were many, as it became a mainstream American snack. Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: 617-542-1358.

1773. Erewhon [Los Angeles, California]. 1975. Erewhon. November/December 1975. Culver City, California. 22 p. Catalog and price list.

• **Summary:** On the front cover is an illustration (line drawing) of Benjamin Franklin, wearing a fur hat and glasses. Below is a quote from his *Poor Richard's Almanac* (1739): "Keep thy shop and thy shop will keep thee." Other quotes are scattered throughout the catalog.

Products include: Pasta (packaged and bulk). incl. Soya-Rice Shells (organic) "Eat to live, Live not to eat." Bulk staples–Grains (including Sweet Rice from California), flours (freshly milled whole grain), cereals, beans (incl. organic soybeans and soybean flakes from Texas), seeds.

"Knowledge like a rich Soil, feeds if not a world of Corn, a world of weeds." Erewhon packaged staples–Grains, flours, cereals, beans (incl. organic soybeans), seeds. "A long life may not be good Enough, but a good Life is long Enough."

Granola. More packages–Arrowhead grains, cereals, and beans, Fearn Soya Foods (from Fearn Soya Products, incl. Soy-O-Pancake Mix {Wholewheat or Buckwheat}, Soya Powder {Natural or Low Fat}), Earthwonder meals-in-a-bag. Arrowhead Mills The Simpler Life food storage program (nitrogen packed in #10 metal cans; incl. soybeans and soy flakes). Juice. "They that cannot Obey, cannot Command." Spreads (nut butters {peanut butter, sunflower butter, sesame butter, sesame tahini} and fruit butters {Pure and Simple, sweetened only with honey}). Rocky Hollow Herb Farm's line of organic and natural herbs, spices, and essential oils. "Time is an Herb that cures all Diseases." Goodies: Nik's Snaks, chewies (incl. pemmican), chips (incl. Mother Earth Tamari Chips, Corn Munchies–Pure & Simple). "To lengthen thy Life, lessen thy Meals." Rennetless cheese from Redwood Natural Foods. Dried fruit (bulk or packaged, incl. calymyrna figs, medjool dates, monukka raisins). Tamari & miso (Tamari soy sauce–4 sizes aged 2 years, Hacho miso–3 sizes aged 2 years, Mugi miso–3 sizes aged 18 months, Kome miso–3 sizes age not given). Vegetable oils (incl. Arrowhead Soy Oil in 3 sizes). Garden fresh produce. Sea vegetables. Herb teas (incl. Celestial Seasonings). "Make Haste slowly." Body care (incl. Tom's soap and shampoos, Dr. Bronner's soaps, Cattier products), "When the well's dry, We know the worth of Water." Potpourri: Condiments (incl. "kuzu arrowroot, umeboshi (plums pickled in brine)," cookware (Quaker City grain mill, Corona stone mill, Mac steel utility knife, Soy sauce dispenser), publications). "Hunger is the best Pickle." Important stuff (Ordering information). "Drive thy Business, let it not Drive Thee."

On the last page, John Fountain extends "grateful appreciation to all those whose positive accomplishments have created Erewhon: Lima and George Ohsawa, Aveline and Michio Kushi, Cornelia and Herman Aihara, Michel Abehsera, Yvette & Jacques DeLangre, William Dufty, Frank Ford, Paul Hawken, Carolyn Heidenry, Roger Hillyard, Bob Kennedy, Bruce McDonald, Tommy Nakayama, Shane and Lou Olds [sic, Shayne Oles], Fred Rohe, Dr. Pietro Rotundi, Evan Root, Tyler Smith, Bill Tara, our customers, staff, suppliers, and growers, Susan and Lou Remy and all." Address: 8454 Steller Dr., Culver City, California 90230. Phone: (213) 836-7569.

1774. Shurtleff, William. 1975. Chronology of early tofu and miso classes in California and Hawaii: 25 Oct. 1975 to 14 Feb. 1976. Lafayette, California. 1 p. Unpublished manuscript.

• **Summary:** Each class started with a talk about soybeans, soyfoods protein, world hunger, and meatless/vegetarian

diets. Then a series of about 25 color slides demonstrated how to make tofu at home. Other slides showed favorite tofu recipes and how tofu was made in a traditional Japanese shop.

1975 Oct. 25–We do our first real “Tofu Class” at Westbrae Natural Foods in Berkeley, California, arranged by Bob Gerner and Liz Horowitz. Thrilling to have an audience of about 14 interested people. On Oct. 30 at Westbrae 16 people attend, and on Nov. 8, 18 people.

November tofu classes: Nov. 14th–Rainbow Grocery (arranged by Bill Crollius), 23rd–Esalen Institute in Big Sur (John Russel).

December tofu classes. 2nd–We do a big tofu class in living room of 790 Los Palos Dr. with lots of publicity from a big newspaper article on our work; 47 attend. 4th–Acalanes (Sandy Hills, 89 attend), 6th Westbrae (Bob Gerner), 7th–San Francisco Vegetarian Society (Dixie Mahy, 67 attend), 8th–Seventh-day Adventist Pacific Union College (Mary Eighme, 48 attend), 11th–Dawn Horse Bookstore in S.F. (Moe).

1975 Dec. 12–*Book of Tofu* in hand. Since we started it on 22 Oct. 1972, it had taken just about three years to write.

Dec. 13–Sept. 1976–I hand deliver *The Book of Tofu* to many bookstores and food shops that wish to sell it, typically selling 4–50 per stop at 40% discount: Communion Vegetarian Restaurant #2, Nutrition in a Nutshell, Open Sesame, Lafayette Natural Foods, San Francisco Vegetarian Society, Kinokuniya Bookstore, Rising Sun (440 Judah St. in San Francisco), Diablo Oriental Foods, San Jose Tofu Co., Soko Hardware, Effie Chow & East West Academy, Ted Nordquist (1536 Versailles Ave., Alameda, CA 94501), The Wok Shop (804 Grant Ave., SF), Westbrae Natural Foods, etc. By 24 July 1976, I had distributed 266 copies.

December tofu classes after we have our book: 13th & 14th–Jacques Delangre (Paradise, CA), 16th–East West Academy (Effie Chow), 17th–Westbrae, 18th–San Francisco Zen Center (Ed Brown), 19th–Fairfax (M. Squire).

Tofu classes/lectures in January 1976 in Northern California: 5th–Westbrae, 7th–St. Andrew’s Church in Walnut Creek (Dorothy Headley), 8th–Kepler’s Bookstore (Jeffrey Shurtleff & Hank Maiden) 12th–Odiyan, where I see David Mastrandrea after many years, 14th–Berkeley Co-op Natural Food Center at 1414 University Ave. (Susan Kishi, with Ted Nordquist and Janet Fehring [Ahava] helping to make tofu dip; 105 attended), 15th–San Francisco Medical School and East West Academy of Healing Arts (Effie Chow), 17th–Persimmon (Peter Godfrey), 20th–United Energy Co-op (Sri Ramon).

Jan. 16–18–Visit Bubba Free John at his community. Do and film a program on tofu.

Jan. 20–30?–Tofu trip to Los Angeles with mom and Akiko. Many tofu and miso classes. 22nd–East West

Academy of Healing Arts (Effie Chow in a church), 24th–weird Los Angeles Vegetarian Society (Blanche Leonard, 150 people attend), 25th–East West Center (P. Retzsky), 27th–Dr. Harry Miller and Loma Linda Foods (70 attend), 29th–Ojai (Luke Gatto). We visit Frazier Farms, a huge natural foods supermarket in Escondido, then go to San Diego for an interview with *Well Being* magazine (David & Barbara Salat).

Feb. Tofu classes: 4th–Walnut Creek Co-op, 6th–Albany church (Nancy Dohur).

Feb. 10 to Oahu, Hawaii. Feb. 12th–tofu class for Seventh-day Adventist group (Naomi Yamashiro, 80 attend), 13th–Honolulu, Hawaii, Kyukendall Hall at at Univ. of Hawaii at Manoa (David Lee “Kalm” Sukowske, 140 attend). Then Feb. 14 arrive in Japan. 30-minute KQED TV special on tofu we made shown in California after we left. Expected viewership is estimated at 45,000.

In summary, from October 1975 until February 1976 we did 35 tofu and miso programs in California and Hawaii plus numerous media appearances and interviews. 1,300 people attended these classes. We requested that an admission of no more than \$1 per person be charged. Our honoraria, shared with the sponsors, totalled \$600. We also sold 366 copies of our books.

Note 1. This is the earliest document seen (Dec. 2001) concerning a natural foods retail chain–Frazier Farms natural foods supermarket.

Note 2. This is the earliest document seen (June 2002) concerning the work of Ted Nordquist with soyfoods. Address: 790 Los Palos Dr., Lafayette, CA 94549.

1775. Singer, Peter. 1975. *Animal liberation: A new ethics for our treatment of animals*. New York, NY: New York Review. Distributed by Random House. xix + 301 p. Oct. Illust. Index. 18 cm. Paperback edition published Sept. 1977 by Avon Discus. [200* ref]

• **Summary:** This book, a milestone in and “bible” of the animal rights movement worldwide, first popularized the concepts of animal rights and speciesism (pronounced SPEE-shees-iz-um, a term first used in 1973) as logical extensions of human rights and racism. It helped to make 1975 a year that saw explosive growth in the animal rights and vegetarian movements.

The author, an Australian philosopher, argues for an end to oppression and exploitation of non-human animals, discusses animal experimentation and factory farming, and presents vegetarianism as an opportunity to take a political, economic, and moral stance in our daily lives.

Contents: Preface (It begins: “This book is about the tyranny of human over nonhuman animals. This tyranny has caused and today is still causing an amount of pain and suffering that can only be compared with that which resulted from the centuries of tyranny by white humans over black humans. The struggle against this tyranny is a struggle

as important as any of the moral and social issues that have been fought over in recent years”). Acknowledgments. 1. All animals are equal... or why supporters of liberation for blacks and women should support animal liberation too. 2. Tools for research... or what the public doesn't know it is paying for. 3. Down on the factory farm... or what happened to your dinner when it was still an animal. 4. Becoming a vegetarian... or how to reduce animal suffering and human starvation at the same time. 5. Man's dominion... a short history of speciesism. 6. Speciesism today... defenses, rationalizations, and objections to animal liberation. Appendices: Cooking for liberated people (incl. Seventh-day Adventists, bread, peanut butter, tahini, miso, hummus, and Tartex, Chinese recipes, mung bean sprouts and tofu, Indian recipes, Middle Eastern recipes, flat Arabian bread, chickpeas and felafel, Italian recipes, macrobiotic recipes {incl. soy sauce, soybeans}, meat substitutes {incl. TVP, Granburger, Protoveg, Itona, Vitpro, Loma Linda meatless frankfurters, imitation bacon bits}, and milk substitutes—often made from soybeans), further reading, organizations.

Singer's book was not just a philosophical treatise. It was a call to action. Invoking the concept of speciesism, Singer deplored the historic attitude of humans toward non-humans as a “form of prejudice no less objectionable than racism or sexism,” and urged that the liberation of animals become the next great cause after civil rights and the women's movement. Singer's popular book produced two important effects. First, it reintroduced to the anti-vivisectionist cause an intellectual basis, a philosophical orientation, and a moral focus. Second, it attracted to the animal rights cause a host of new activists who started many new organizations. The most active and visible of these has been PETA (People for the Ethical Treatment of Animals, in Washington, DC), which by 1988 was thought to have 200,000 dues paying members in the USA.

Note: This is the earliest document seen (May 2008) that mentions Itona, a British brand milk- and meat alternatives. Address: Australia.

1776. Erewhon Trading Co. 1975. News from nowhere (Japanese fermented foods—Miso, tamari, and koji). *East West Journal*. Nov. 15. p. 29.

• **Summary:** The subtitle states: “Erewhon news from Nowhere is a regular *East West Journal* column providing information about food. We hope that this will be a valuable educational service, enabling readers to select what they eat knowledgeably. If you require more information about food, we invite you to visit us at our retail stores.” Note that though the column is written in the first person, no author is given.

“In my opinion the most fundamental change in the creation of traditional fermented foods occurred with the shift of the Japanese rural-based economy after World War II. The movement of the population to the cities and the

emphasis on production and manufacturing by large numbers of city dwellers who consumed increasingly larger amounts of food created a demand for soybeans beyond the capacity of the rural of the rural population's productivity. The Japanese turned to America for their soybeans and began to use varieties that did not lead to the fine product to which the native beans had formerly contributed. The result was an economic necessity for research, carried out by American and Japanese technicians, and the results created several basic changes in the manufacturing process.

“First, the koji mold was investigated, and out of the hundreds of strains of mold bacteria [sic] present in the traditional mold culture, certain strains were isolated and propagated for their effectiveness to create the fermentation under laboratory conditions. Thus, new strains of ‘hybrid’ cultures were developed that would break down the American beans of inconsistent quality. The technicians failed to see the process as a whole, not realizing that the long-term fermentation and great attention in handling the raw materials at different stages was an art that depended on a great variety of naturally occurring bacteria to produce an environment where natural competition worked to strengthen the culture.”

“Except for the small number of true traditional makers in Japan, I would say that Americans in their own backyards will, within the next ten years, be producing finer miso and tamari than the majority of producers currently working in Japan.” Address: Massachusetts.

1777. Lambert, Pat. 1975. Classes to demonstrate cooking with tofu. *Contra Costa Times (Walnut Creek, California)*. Nov. 28. p. 13.

• **Summary:** “William Shurtleff and Akiko Aoyagi, co-authors of ‘The Book of Tofu,’ will present two demonstrations next week on creative ways to serve tofu (soybean curd) and miso (fermented soybean paste).

“The first will be Dec. 2 from 7:30 to 9:30 p.m. at 790 Los Palos Manor, Lafayette [the Shurtleff's home], and the second, held under the auspices of the American Nutrition Society is dated for Dec. 4. Registration for the Dec. 2 presentation is \$1. For reservations cal 283-2991.

“The Dec. 4. presentation will be at 8 p.m. in the multi-purpose room of Acalanes High School, Lafayette. There is a \$1.50 fee for adults and 50 cents for students...

“‘Tofu contains no cholesterol and little saturated fats,’ says Sandy Hills, president of the society's Northern California chapter... Tofu can be purchased at most health food stores for approximately 39 cents per pound but, according to Shurtleff, tofu has a more delightful flavor when prepared at home.” Three black-and-white photos (by Eric Rahkonen of the Times) show Shurtleff and Aoyagi making tofu in the Shurtleff family kitchen at 790 Los Palos Dr., Lafayette, California: (1) Pressing the curds in a cloth-

lined forming box. (2) Pureeing soaked soybeans with water in a blender. (3) Holding a large cake of tofu on a plate.

1778. Shurtleff, William; Aoyagi, Akiko. 1975. Tofu as a food. *Macrobiotic (The) (Chico, California)* No. 110. p. 14-24. Nov. [2 ref]

• **Summary:** Excerpted from the forthcoming Book of Tofu.

The magazine's editor notes: Tofu is also good for external plasters, especially on a head injury or concussion, etc. However it is not advisable to use it on heart area injuries, as tofu is very yin, and could weaken the heart.

Tofu as food should be balanced with Tamari or Miso, or eaten with fish, burdock or any other yang food. This will balance its yin quality. Address: Lafayette, California.

1779. Tovar Galvez, Luis Raul. 1975. Productos derivados del frijol soya tecnologías tradicionales en el Lejano Oriente [Traditional technology soy products in the Far East]. In: American Soybean Assoc., ed. 1975. *Memorias: Primera Conferencia Latinoamericana Sobre la Proteína de Soya*. Mexico City. 232 p. See p. 185-93. [14 ref. Spa]

• **Summary:** Descriptions of and flow sheets for the production of the following basic soyfoods are given: Miso, shoyu (*salsa de soya*), natto, tempeh, sufu (fermented tofu), and soy yogurt. A table shows the nutritional composition of each of these foods as well as yuba and kori-tôfu (dried-frozen tofu).

Note 1. This is the earliest Spanish-language document seen that mentions tempeh, which it calls "tempeh."

Note 2. This is the earliest Spanish-language document seen (Feb. 2004) that uses the term "kori-tôfu" to refer to dried-frozen tofu. Address: Facultad de Química, UNAM, Mexico.

1780. Eden Foods. 1975. Wholesale pricelist. Winter 75-76. 4601 Platt Rd., Ann Arbor, MI 48104. 26 p. Dec. 15.

• **Summary:** On the cover is a man entering the gate of his snow-covered cabin in the moonlight. Tamari Soy Sauce is now sold under 2 labels (Erewhon, and Japan-Marushima). The three types of miso (all under the Erewhon brand) are still spelled Mugi, Hacho, and Kome. Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

1781. Kiuchi, Kan; Ohta, Teruo; Ebine, Hideo. 1975. Changes in lipid components of miso-dama koji. *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 53(12):869-74. Dec. [6 ref. Eng]

• **Summary:** "A large amount of lipids [such as oil and lecithin] is contained in miso, especially soybean miso, since soybean is the raw material of miso." However the free fatty acid content of miso dama was higher than that of soybeans. Address: National Food Research Inst., Ministry of Agriculture and Forestry, Shiohama, Koto-ku, Tokyo, Japan.

1782. *Macrobiotic (The) (Chico, California)*. 1975. Miso as a replacement for meat. No. 111. p. 39. Dec.

• **Summary:** "Miso is Yang. It replaces meat, being as Yang as meat. One who eats miso every day will soon have no desire to eat meat. The Yang mineral salts he craves are amply supplied by miso. Without miso, it is difficult to remain healthy and free of disease. With miso, for the intestines, the root of all disease, are maintained in a healthy condition. Animal foods which are not digested completely easily breed bacteria which are toxic... Carnivorism is a short term adventure, always reckless and dangerous, that ends in tragedy and disease..."

1783. Shurtleff, William; Aoyagi, Akiko. 1975. The book of tofu: Food for mankind. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]

• **Summary:** This pioneering work started the "tofu revolution" in America. Contents: Preface. Acknowledgements. Part I. Tofu: Food for mankind. 1. Protein East and West. 2. Tofu as a food: Introduction, rich in high quality protein (NPU, biological value, protein score, amino acid content), high protein complementarity (tofu contains an abundance of lysine, an essential amino acid that is deficient in many cereal grains; increase usable protein by combining tofu with wheat, rice, corn, etc.), easy to digest, an ideal diet food, low in saturated fats and free of cholesterol, rich in vitamins and minerals, a health-giving natural food, backbone of the meatless / vegetarian diet, free of chemical toxins, low in cost, easily made at home, quick & easy to use, versatile.

3. Getting started: Introduction, buying and storing tofu, basic ingredients (whole-wheat flour, miso {rice-, barley, and soybean miso, special Japanese miso, Chinese chiang}, oil, brown rice, salt, shoyu {natural shoyu, shoyu, Chinese soy sauce, synthetic or chemical soy sauce}, sugar, vinegar, monosodium glutamate {MSG}), Japanese kitchen tools (each illustrated), preparatory techniques (salt rubbing, rinsing and pressing leeks and onions, soaking burdock root, reconstituting dried sea vegetables {dried hijiki, wakame, agar}, wheat gluten and kampo, parboiling, cutting tofu and vegetables, using sesame seeds, toasting nori, preparing a steamer), basic recipes (soup stocks and broths {dashi}, basic shoyu dipping sauces {*tsuke-jiru*}, miso toppings {sweet simmered miso / *nerimiso*, miso sauté / *abura miso*, special miso toppings and dipping sauces, finger lickin' miso, and regular miso}, miso salad dressings, nut and seed butter toppings, spreads and dressings, basic sauces, rice, noodles and other basic preparations).

Our favorite tofu recipes (lists about 80 recipe names for each of the different types of tofu, plus soymilk, yuba, whole soybeans, gô, okara, and curds; very favorites that

are also quick and easy to prepare are preceded by an asterisk).

Part II. Cooking with tofu: Recipes from East and West (500 recipes). 4. Soybeans: History of soybeans and “soybean foods,” cooking with whole dry soybeans, roasted soybeans (*iri-mame*), fresh green soybeans (*edamame*, incl. a recipe for “Sweet emerald bean paste {*Jinda*}),” kinako (roasted full-fat soy flour, incl. Japanese health food treats such as *kinako amé*, *gokabo*, *kokusen*, *kankanbo*, and *abekawa mochi*), soybean sprouts (*daizu no moyashi*), natto (sticky fermented whole soybeans, with “gossamer threads”), tempeh (fermented soybean cakes), Hamanatto and Daitokuji natto (raisin-like natto), modern western soybean foods (natural soy flour [full-fat], soy granules, defatted soy flour and grits, soy protein concentrates, soy protein isolates, spun protein fibers, textured vegetable protein {TVP}, soy oil products). 5. Gô (a thick white puree of well-soaked uncooked soybeans). 6. Okara or Unohana. 7. Curds and whey. 8. Tofu (includes history, and preparatory techniques: Parboiling, draining, pressing {towel and fridge method, slanting press method, sliced tofu method}, squeezing, scrambling, reshaping, crumbling, grinding).

9. Deep-fried tofu: Thick agé or nama agé, ganmo or ganmodoki (incl. *hiryozu / hirosu*), agé or aburagé (incl. “Smoked tofu,” p. 197). 10. Soymilk. 11. Kinugoshi (“*Kinu* means ‘silk’; *kosu* means ‘to strain’; well named, kinugoshi tofu has a texture so smooth that it seems to have been strained through silk”). 12. Grilled tofu. 13. Frozen and dried-frozen tofu. 14. Yuba (incl. many meat alternatives such as Yuba mock broiled eels, Buddha’s chicken, Buddha’s ham, sausage). 15. Tofu and yuba in China, Taiwan, and Korea (incl. Savory tofu {*wu-hsiang kan*}; see p. 258 for illustrations of many meat alternatives, incl. Buddha’s fish, chicken, drumsticks, and duck, plus vegetarian liver and tripe, molded pig’s head, and molded ham). One type of Korean soybean miso is called *kotsu jang* [sic, *kochu jang*]. When tofu is served with miso [Korean-style, *Tenjang*] as the dominant seasoning, and with rice, “it becomes the popular *Tenjang Chige Pekpem*” (p. 262). 16. Special tofu.

Note: This is the earliest (and only) English-language document seen (March 2009) that uses the word “*Tenjang*” to refer to Korean-style soybean jang (miso).

Part III—Japanese farmhouse tofu: Making tofu for more and more people. 17. The quest. 18. Making community tofu. 19. The traditional craftsman. 20. Making tofu in the traditional way.

Appendices: A. Tofu restaurants in Japan; many are vegetarian: In Tokyo: Sasa-no-yuki / Sasanoyuki, Goemon, Hisago, Sanko-in, Shinoda-zushi, Dengaku (south of Tokyo in Kamakura). In Kyoto: Nakamura-ro, Okutan, Takocho, Izusen, Junsei, Nishiki, Hakuun-an, Rengetsu, Sagano, Sorin-an. Tea ceremony cuisine (*Kaiseki ryori*), Zen temple

cooking or Buddhist vegetarian cooking (*Shojin ryori*), Tea ceremony cooking from China (*Fucha ryori*), Wild gathered cooking (*Sansai ryori*). A directory of these and others, with addresses and phone numbers, is given (p. 312).

B. Tofu shops in the West (Directory of 43 shops in the USA, 3 in Europe, and 3 in Latin America). C. People and institutions connected with tofu. D. Table of equivalents. Bibliography. Glossary. Index. About the authors (autobiographical sketches; a photo shows Shurtleff and Aoyagi, and gives their address as New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo, Japan 177). Sending tofu in the four directions.

pudding recipes include: Rice pudding with gô and apple (p. 76, incl. 2 cups soymilk). Tofu chawan-mushi (p. 147; Steamed egg-vegetable custard with tofu). Tofu fruit whips (p. 148). Tofu rice pudding (p. 150, incl. 1 cup soymilk). Tofu custard pudding (p. 152). Soymilk custard pudding (p. 208). Brown rice pudding (p. 208, with 2 cups soymilk). Soymilk chawan-mushi (p. 209). Chawan-mushi with yuba (p. 249).

Dessert recipes include: Tofu whipped cream or yogurt (p. 148; resembles a pudding or parfait). Tofu ice cream (p. 149, with chilled tofu, honey, vanilla extract and salt). Banana-tofu milkshake (p. 149). Tofu cream cheese dessert balls (p. 149). Tofu icing (for cake, p. 149). Tofu cheesecake (p. 150). Tofu-pineapple sherbet (p. 151). Also: Soymilk yogurt (cultured, p. 205). Healthy banana milkshake (p. 206). On p. 160 is a recipe for “Mock tuna salad with deep fried tofu.”

Note 1. This is the earliest English-language document seen (March 2007) that uses the term “Tofu ice cream” to refer to soy ice cream or that contains a recipe for “Tofu ice cream.”

Note 2. This is the earliest English-language document seen (March 2000) that uses the term “Tofu Cheesecake” and the first to give a recipe for a tofu cheesecake.

Note 3. This is the earliest English-language document seen (May 2000) that uses the term “Tofu Sour Cream” (p. 109) or that contains a recipe for “Tofu Sour Cream.”

Note 4. This is the earliest English-language document seen (Dec. 2003) that uses the term “tofu milkshake” or that gives a recipe for a shake made with tofu.

Note 5. This is the earliest English-language document seen (Feb. 2004) that uses the word “stringy” to refer to natto.

Note 6. This is the earliest English-language document seen (Feb. 2004) that uses the term “dried-frozen tofu.”

Note 7. This is the earliest English-language document seen (March 2004) that describes preparatory techniques for tofu (p. 96-98).

Note 8. This is also the earliest English-language document seen (March 2004) that contains the term “smoked tofu.”

Note 9. This is also the earliest English-language document seen (March 2004) that uses the term “kinugoshi tofu” to refer to silken tofu.

Note 10. As of March 2007, the various English-language editions of this book have sold more than 616,000 copies. Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

1784. Shurtleff, William; Aoyagi, Akiko. 1975. What is miso? *Macrobiotic (The) (Chico, California)* No. 111. p. 27-38. Dec.

Address: Lafayette, California.

1785. Shurtleff, William; Aoyagi, Akiko. 1975. Tofu and yuba in China, Taiwan, and Korea (Document part). In: W. Shurtleff and A. Aoyagi. 1975. *The Book of Tofu*. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. See p. 250-64.

• **Summary:** Contents: Introduction. Three varieties of tofu. Doufu: Known as *tojo* or *tokua* in the Philippines, or as *tahu* in Indonesia. Pressed tofu (*doufu-kan*): Savory tofu (*wu-hsiang kan*), soy-sauce pressed tofu (*chiang-yu doufu-kan*), pressed tofu sheets (*pai-yeh*, incl. pressed tofu noodles or “beancurd shreds” {*doufu-ssu, kan-ssu*}, pressed tofu loops {*pai-yeh chieh*}, Buddha’s Chicken {*su-chi*} or Buddha’s Ham {*suhuo-t’ui*}, salted dry tofu {*doufu-kan*}). Chinese soft kinugoshi (*shui-doufu, sui-doufu, nen-doufu, nan-doufu, shin-kaou doufu*). Warm soymilk curds: Chinese smooth curds (*doufu-nao, dou-nao*; often served for breakfast by street vendors), curds-in-whey (*doufu-hua*). Deep-fried tofu (*yu-doufu, cha-doufu, doufu-kuo, kuo-lao doufu*). Frozen tofu (*tung-doufu, ping-doufu*).

Fermented tofu: *Doufu-ru*, white fermented tofu (*pai doufuru*, incl. 5 different types such as red pepper, sesame oil and red pepper, five-spice, etc.), red fermented tofu (*hung doufuru, nanru, nanyu*, made by adding Chinese red fermented rice {*ang-tsao*} to the brining liquor to give it a deep red color, thick consistency, and distinctive flavor and aroma; soy sauce is generally used in place of rice wine; another variety is rose essence fermented tofu), stinky fermented tofu (*tsao-doufu, ch’ou doufu*, incl. green stinky fermented tofu), *chiang-doufu* (prepared by pickling firm cubes of tofu for several days in either Chinese-style miso {*chiang*} or soy sauce).

Soymilk (*doufu chiang, dou-chiang, dou-nai, dou-ru*): Widely enjoyed as a spicy hot breakfast soup (p. 204) or a warm, sweetened beverage (p. 207). Sometimes sold bottled by street vendors.

Yuba: Much more popular and much less expensive in China and Taiwan than it is in Japan. Called bean curd “skin” or “sheets” in most Chinese cookbooks, yuba is known in Mandarin as *doufu-p’i* (“tofu skin”) or *doufu-i* (“tofu robes”). Remarkable Chinese ingenuity and creativity in giving the semblance of meat. In the display case of

attractive restaurants or marketplace yuba shops are perfect replicas of plucked hens, roosters, and ducks, light-brown fish (complete with fins, gills, eyes, and mouth), juicy hams, tripe, liver, rolled meats, red sausage links, deep-fried drumsticks, and a life-sized pig’s head—all made from yuba. Most of these imitation meat dishes are prepared by pressing fresh yuba into a hinged (wooden or aluminum) mold, clamping the mold closed, then steaming it until the yuba’s shape is fixed. *Su-tsai* restaurants specialize in Buddhist vegetarian cookery. Names of prepared dishes: Buddha’s Chicken (*suchi*), Buddha’s Fish (*suyu, sushi*), Buddha’s Duck (*suya*), Vegetarian Tripe (*taoto*) or Liver (*sukan*); Molded Pig’s Head (*tutao*), Molded Ham (*suhuo*), Sausage Links (*enchan*), Buddha’s Drumsticks (*sutsai tsui*), Deep-fried Duck (*suya*). A full-page illustration (p. 258) shows these products. Fresh yuba. Dried yuba (*kan doufu-p’i*, incl. sweet yuba and Bamboo yuba {*fuchu*}). Tofu and yuba in Chinese cookery: Mandarin cookery, congee (rice porridge), “red broiled” sauces (*hong-sao*), meatless days, vegetarian restaurants.

The Chinese tofu shop: Description of the process for making tofu. Tofu in Korea. Recipes: Fermented tofu dressings, spreads, dips, and hors d’oeuvre. Fermented tofu in sauces, egg dishes, and with grains.

Illustrations show: (102) A woman cutting doufu at the marketplace. (103) Making pressed tofu using a hand-turned screw press. (104) Pressed tofu noodles. Buddha’s chicken. (105) Street vendor selling soymilk curds. (106) Pressing tofu in forming boxes using stone weights. (107) Deep-frying agé triangles in a wok. (108) Threaded thick-agé cubes. (109) Net-like thick agé. (110) A soymilk vendor carrying bottled soymilk using a shoulder pole. (111) Yuba mock meats. (112) Yuba steaming pots. (113) Steam-heated drum can cooker in Chinese tofu shop. *Doufu-ru* [fermented tofu] cubes on plate, in bottle, in can. Woman selling tofu, seated by the street side.

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the word “doufu” to refer to Chinese-style tofu. Note 2. This is the earliest English-language document seen (Oct. 2008) that uses the word “tofu skin” to refer to yuba. Address: Lafayette, California.

1786. Shurtleff, William; Aoyagi, Akiko. 1975. Natto (sticky fermented whole soybeans) (Document part). In: W. Shurtleff and A. Aoyagi. 1975. *The Book of Tofu*. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. See p. 67.

• **Summary:** “Natto are prepared (commercially or at home) by steaming soaked soybeans until they are soft, inoculating the warm (104°) beans with the bacteria *Bacillus natto*, and then allowing them to ferment for 15 to 24 hours in a humid environment at about 104°. The dark-brown beans have a fairly strong and unusual aroma and flavor, and a sticky, slightly slippery surface texture. When lifted from the bowl with chopsticks (fig. 13), like some varieties of melted

cheese, they form gossamer-like threads. Although most whole soybeans are somewhat difficult to digest, natto are highly digestible because the beans' complex protein molecules have been broken down by the bacteria during fermentation. A whole, natural food, natto contains 16.5 percent protein and are rich in vitamins B-2, B-12, and iron. In Japan and in Japanese grocery stores in the West, natto are sold small (3 to 4 ounce) packages wrapped in straw, from which they traditionally received bacteria for fermentation. Generally served as a topping for rice, natto are also used in miso soups and *Aemomo*-dressings, or sautéed with vegetables. In the provinces, they are mixed with a little sugar and served as an hors d'oeuvre. About 50,000 tons of soybeans are made into natto each year in Japan, about one-fourth the amount used to make either miso or shoyu." Address: Lafayette, California.

1787. Shurtleff, William; Aoyagi, Akiko. 1975. The book of tofu: Food for mankind (Illustrations—line drawings). Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]

• **Summary:** Continued: Illustrations (line drawings, both numbered and unnumbered) show: A hearth in a traditional Japanese farmhouse with tofu dengaku roasting around a bed of coals in a sunken open-hearth fireplace. An old Japanese plum tree blossoming in winter. Three pieces of skewered tofu dengaku with a sansho leaf atop each in a special serving box. A sprig of sansho with berries. Stylized top of a soybean plant in a circle. Fig. (4) Tofu products available in the West (tofu, dofu, kinugoshi, thick agé triangles, cubes, and cake, agé and age puffs, hollow agé cubes, soymilk, tofu pudding, doufu-ru {white and red}, ganmo {patties, small balls, and treasure balls}, grilled tofu, dried-frozen tofu, instant powdered tofu, okara, dried yuba, soymilk curds, pressed tofu, savory tofu). A wooden cutting board and Japanese broad-bladed vegetable knife (nagiri-bôcho) with vegetables and tofu on a woven bamboo tray. (8) A wooden keg of red miso and a plastic bag of barley miso. (9) Shoyu in a metal can, wooden keg, glass bottle, and table-top dispenser. Traditional Japanese kitchen tools: *Miso-koshi* (woven bamboo strainer used in making miso soup). cutting board, Japanese vegetable knife, wooden spatula, bamboo rice paddle (*shamoji*) and spoon, woven bamboo colander or tray (*zaru*), suribachi, Japanese grater (*oroshi-gané*), sudaré (bamboo mat), pressing sack for tofu or soymilk, serrated tofu-slicing knife, tawashi scrub-brush (made of natural palm fiber), wok with draining rack and wooden lid, stir-frying ladle and spatula, long cooking-chopsticks, mesh skimmer, deep-frying thermometer, Chinese bamboo steamer (*seiro*), charcoal brazier (*konro*, *shichirin*), broiling screen. Covered pot steamer. Small lidded pottery pot. More kitchen tools (p. 50-51). (10) A soybean measuring box (*isshô-bako*). (11) The soybean

plant. Two views of a soybean seed with seed coat, hilum, and hypocotyl labeled. A bag full of soybean. Roasted soybeans in a woven bamboo tray (*zaru*). Edamamé in the pods. Three shapes of kinako treats. Soybean sprouts. Natto on a bamboo mat (*sudare*). Natto wrapped in rice straw as it ferments. A hand holding chopsticks that lift natto up from a bowl of natto—connected by gossamer threads. Tempeh (round and square pieces). Wrapping a small packet of inoculated soybeans to make tempeh. (15) Two Japanese women in traditional clothing using hand-turned grinding stones (quern) to grind soaked soybeans when making tofu. (16) Push-pull grinding stones. (17) Motor-driven grinding stones. (18) Water-powered millstones. (19) Wind-powered millstones. (20) Unohana. (21) A tofu maker sitting on a traditional lever press that presses soymilk from the okara in a pressing sack on a rack. A heavy iron skillet. (22) Folding okara omelet pouches. Okara doughnuts. (23) A bamboo colander. (24) A tofu maker weighting a colander with a brick so that whey will collect in it. (25) Ladling whey from curds; it foams! (27) A horse drinking whey from a wooden vat. Soymilk curds in a bamboo mat. (28) Ladling curds for Awayuki. (29) Fresh tofu in a plastic tub. (30) A tofu maker placing a weight on pressing lids as tofu is pressed in settling boxes (forming boxes). Transferring tofu-filled settling box to sing. Cutting a block of tofu into cakes under water. Eggplant halves in a yin-yang dance. Preparatory techniques used with tofu (slanting press, sliced tofu, squeezing, scrambling, reshaping, crumbling). (32) Utensils for making tofu at home. (33) Three designs for a homemade settling container. (34) Preparing homemade tofu (a-1). (35) Removing tofu from a farmhouse-style settling container (forming box). (36) Chilled tofu. Iceberg chilled tofu. A hot, moist, white towelette (*o-shibori*) is used to wipe the face and hands before a meal Tofu salads in three Japanese pottery dishes. Japanese soups in three types of containers. (37) Chrysanthemum tofu. (38) Tofu poached egg. Tofu-stuffed green peppers. A wok. (39) Filling a wok with oil. (40) testing oil temperature in a wok. (41) Deep-frying tofu tempura—and (42) Serving it in a shallow bamboo basket. (43) Making *Kaki-agé*. (44) Dengaku Hoshi (from *Tofu Hyaku Chin*). (45) Skewered Tofu dengaku. Preparing Tofu dengaku in old Japan (from Hokusai's sketchbooks). (46) A variety of skewers. (47) Chinese firepots. (48) A Simmering Tofu wooden serving container heated by coals from within. (49) Miso oden. (50) Tofu wrapped in rice straw. (51) Nanzenji wrapped tofu. (52) Gisei-dofu. (53) Serving freshly deep-fried agé. (54) The deep-frying area of a traditional tofu shop. (55) Deep-frying tools. (56) Wooden bamboo tray with raised sides. Chinese cleaver. (57) Nori-wrapped sushi with agé (making and serving; six drawings). Eating noodles from old Japan (from Hokusai's sketchbook). (58) Preparing homemade noodles. (59) The Oden man on a winter's eve. A potter bowl of Oden. Kombu rolls. (60) Making konnyaku twists. (61)

Nishime in a multi-layered lacquerware box. (61) Pressing tofu for thick agé in a tofu shop. (62) Deep-frying tofu for thick agé. (63) A tofu maker with deep-fried thick agé triangles on screen trays. (64) Stuffing thick agé. (65) Thick agé stuffed with onions. (66) Pressing tofu for ganmo. (67) Adding seeds and vegetables. (68) Deep-frying ganmo. (69) A farmhouse open-hearth fireplace with nabe kettle. (70) Preparing homemade ganmo. Ganmo balls in a draining tray. Ganmo cheeseburger. (71) Cutting tofu to make agé slices (*kiji*). (72) Deep frying agé. (73) Opening agé into pouches. Agé treasure pouches. (74) Agé pouches sealed with foodpicks. Inari shrine with Shinto torii. (75) Kampyo-tied pouches. (76) Making rolled agé hors d'oeuvre. (77) Tofu maker ladling gô (fresh soy puree) into a cauldron. (78) Stirring down the gô. Pressing soymilk from okara with a hand-turned screw press. (79) Serving fresh soymilk in a tofu shop. Six Japanese commercial soymilk products. Little girl at The Farm (Summertown, Tennessee) seated on a small chair drinking a cup of soymilk. Chinese breakfast soymilk soup with deep-fried crullers (*Siento-chiang with yu-chiao tsao pi*). (80) Takigawa-dofu. (81) Tofu maker pouring the soymilk for kinugoshi tofu. (82) Adding solidifier. (83) Trimming kinugoshi from sides of box. (84) Modern lactone kinugoshi (with GDL). (85) Modern kinugoshi factory. (86) Sasa-no-Yuki's Gisei-dofu container. (87) Kinugoshi with ankake sauce. The entrance way to a traditional Japanese restaurant featuring tofu. Traditional metal skewer for making grilled tofu. (88) Traditional tofu maker grilling tofu over a charcoal brazier (*hibachi*). Grilling tofu in a traditional open hearth. (89) An early method of elaborate grilling. Pieces of tofu on different types of skewers. Farmhouse sukiyaki with grilled tofu. (90) Tying frozen tofu with rice straw. (91) Drying farmhouse frozen tofu. (92) Pressing frozen tofu at home. (93) Deep-fried frozen tofu with cheese. (94) Making deep-fried frozen tofu sandwiches (*Hakata-agé*). (95) Frozen tofu wrapped in kombu. (96) Steaming table in a yuba shop. Ten different types / shapes of yuba. (97) Lifting yuba away from soymilk. (98) Yuba sashimi. (99) Yuba envelopes. (100) Deep-fried yuba dengaku. (101) Folding yuba into bundles. Trimming half-dried yuba from a skewer. (102-113) Tofu and yuba in Taiwan, China, and Korea (see separate record). Sesame tofu in pottery bowl. (114) Traditional farmhouse tofu, tied into a package with rice straw rope. (115) Shirakawa-go farmhouses with water-powered rise-husker in foreground. (116) Making seawater tofu at Suwanose. Mortar and pestle for pounding mochi. Making community tofu: Western metal hand mill, hand-turned stone mill apparatus, faces of upper and lower stones, colander and cloth, two shapes of cooking pots, Japanese farmhouse earthen cooking stove, cooking pot set on cut-off oil drum, ladle, two wooden paddles, pressing rack, pressing okara, lever press, pressing sack, wooden settling [forming] container with cloths. (117) Making nigari with salt in

bamboo colander, a traditional "salt boat" for refining salt of nigari. (119) Country farmhouse tofu (5 illust.). (121) Morning shopping at a tofu shop. (122) Diagram of a tofu-shop floor plan. (123) Modern pressure with hydraulic press. (124) Modern centrifuge with 3 soymilk barrels. Thirty-one unnumbered illustrations showing every step in making and selling tofu in a traditional Japanese shop (p. 299-306). (125) Cutting tofu for Dengaku (from *Tofu Hyaku Chin*). (126) Ladies busy making dengaku (from *Tofu Hyaku Chin*). (127) Hearth at Nakamura-ro. (128) The garden at Okutan. Six types of Japanese sea vegetables: Hijiki, aonori, wakame, agar, nori, kombu. (129) Japanese vegetables (27 illustrations). Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

1788. Kozaki, Michio. 1975. Tônan Ajia no hakkô shokuhin [Southeast Asian fermented foods (Abstract)]. *Proceedings of the 22nd Annual Meeting of the Japanese Society of Food Science & Technology*. p. 29. [Jap]
Address: Tokyo Nôgaku Daigaku.

1789. Staron, T. 1975. Obtention des protéines à partir des graines oléagineuses par des méthodes microbiologiques [Obtaining protein from oilseeds using microbiological methods]. *Revue Française des Corps Gras (Paris)* 22(11-12):579-89. [40 ref. Fre]*

• **Summary:** Discusses some important East Asian fermented foods, including miso, shoyu, and tempeh. Note: This is the earliest record on soyfoods in the IALINE database from CDIUPA. Address: INRA, Stat. Antibiotiques Bioconversions, Chartres, France.

1790. **Product Name:** [Manna Miso: Soybean Paste (Barley Miso, Rice Miso, Hacho Miso)].

Foreign Name: Manna Miso: Sojapasta (Gerste Miso, Rijste Miso, Hacho Miso).

Manufacturer's Name: Stichting Natuurvoeding Amsterdam. Renamed Manna Natuurvoeding B.V. in 1982 (Repacker, Marketer, Distributor). Imported from Muso in Japan.

Manufacturer's Address: Rozenstraat, Amsterdam, Netherlands.

Date of Introduction: 1975.

How Stored: Shelf stable.

New Product-Documentation: Talk with Sjon Welters. 1989. Aug. 15. When he started to work for Manna in Sept. 1975 they were importing 3 varieties of miso from Japan via Muso. He does not know which company in Japan made this miso.

Label sent by Sjon Welters from the Netherlands. 2007. June. Manna Unpasteurized Organic Barley Miso.

1791. **Product Name:** Westbrae Natural Natto Miso.

Manufacturer's Name: Westbrae Natural Foods (Importer from Mitoku). Made in Japan.

Manufacturer's Address: 1224 10th St., Berkeley, CA 94710.

Date of Introduction: 1975.

Ingredients: Soybeans, barley malt, kombu seaweed, ginger, water, sea salt.

Wt/Vol., Packaging, Price: 22 lb retails for \$1.77 lb. Also in 30 lb.

How Stored: Shelf stable.

New Product–Documentation: Westbrae Natural Wholesale Food Catalog. 1980. Spring. Includes natto miso, which comes in 1, 5, or 22 lb sizes. Also label of product. 6 by 7 cm. Red and blue on gold. Note: This is the earliest document seen (Dec. 2008) with the term “natto miso” as a product name or in the title of a publication.

Interview with Bob Gerner. 1987. Aug. 20. Westbrae was the first company in America to introduce this Finger Lickin' Miso.

1792. Circle, S.J.; Smith, A.K. 1975. Soybeans: processing and products. In: N.W. Pirie, ed. 1975. *Food Protein Sources*. Cambridge, London, New York, Melbourne: Cambridge University Press. xx + 260 p. See p. 47-64. [88 ref]

• **Summary:** Contents: Introduction. Agronomy: Varieties, cultivation, yields. Soybean composition. Protein nutritional value. Traditional processing into nonfermented foods: Soybeans as a table vegetable (green soybeans), soy milk, tofu (soybean curd), yuba, kinako, salted soybeans, soybeans sprouts. Traditional processing into fermented foods: Miso and shoyu, tempeh. Others include: natto, hamanatto, sufu (soy cheese), tao-tjo, kochu chang, ketjap, ontjom, and yogurt-like products.

Contemporary processing without defatting: 'Debittering' by aqueous treatment, whole bean processing, full-fat flour, soy milk and curd. Contemporary defatting processes: Defatting by aqueous processing, defatting with organic solvents, composite flour, soy flours, protein concentrates, protein isolates and textured soy products (recipes for using soy protein products in foods are available from several publications). Address: Anderson Clayton Foods, W.L. Clayton Research Center, 3333 Central Expressway, Richardson, Texas 75080.

1793. Egami, Tomi. 1975. Misoshiru to miso ryôri [Miso soup and miso cookery]. *My Life Series (Tokyo: Gurafu-sha)*. No. 46. 66 p. Illust. 26 cm. [Jap]

• **Summary:** Contents: The food table at our home. Miso and me. Pure and right natural miso, by Masahiro Nakano. Varieties of miso from various areas, by Wataru Kawamura. Miso soup. Nerimiso [sweet simmered miso]. Dengaku. Furofuki daikon. Tokoroten. Nuta. Miso-yaki [broiled with miso]. Name miso [finger-lickin' miso]. One-pot cookery.

Miso pickles. Cooked with miso. Chinese-style miso cooking. Noodle cooking. Miso confections. Homemade miso. Contains many recipes. Address: Head, Egami Cooking School, Tokyo.

1794. Ekasari, Indriati; Winarno, F.G.; Jenie, B.S.L. 1975. The effects of starters, drying temperatures and storage on the quality of rehydrated tauco. In: Dept. of Agricultural Product Technology, Faculty of Agricultural Engineering and Product Technology, Bogor Agricultural University. *Research on Tauco: Phase One*. See p. A-1–A-11. [8 ref] Address: Bogor, Indonesia.

1795. Gin, Margaret; Castle, Alfred E. 1975. *Regional cooking of China*. San Francisco, California: 101 Productions. 192 p. Illust. Index. 21 x 21 cm.

• **Summary:** This book is filled with lovely woodcuts from the Horace Carpentier Collection, East Asiatic Library, University of California, Berkeley. Only 11% of China's land area is arable compared to 80% in the USA, yet today its population, mostly squeezed into the eastern third of the country, is four times that of the United States. The best soy sauce in China comes from Fukien [Fujian] and Amoy. The Classic of Mandarin cuisine reached its zenith around 1800, when Yuan Mei wrote volumes about food; these are still considered to be definitive studies of Chinese gourmet cooking in the Mandarin style. There is one entire chapter titled “Bean curd” (p. 57-63).

The book also contains recipes for: Fuzzy melon soup with bean curd (p. 37). Seaweed soup with bean curd (p. 41). Bean curd soup (p. 42). Ma Po bean curd (Szechwan, p. 59). Stir-fried vegetables with black bean sauce (with “2 tablespoons fermented black beans, rinsed and mashed, 1 slice ginger root, minced, 1 garlic clove, minced,...” p. 90). Stir-fried vegetables with fermented bean cake (fermented tofu, p. 91). Braised soybean sprouts (Shanghai, p. 96). Clams with black bean sauce (with fermented black beans, rinsed and mashed, and slices of ginger root, minced, p. 109). Braised fish with fried bean curd (p. 115).

The glossary (p. 178-84) defines: Bean cake, fermented, and fresh (2-inch squares, 1 inch thick). Bean curd cheese, red (nam goeey). Bean-curd cake, deep fried. Bean-curd sheets or sticks, dried [yuba] (“Creamy beige-colored thin sheets. Used for vegetarian (Buddhist) dishes congee or as substitute for egg roll skins. Stick form is used mainly for soup... Always soak in warm water to make pliable before proceeding with recipe”). Bean curd, sweet (“Comes in dried, flat sheets, about 6 inches by 1½ inches. Mocha in color; no sweet taste”). Bean paste, hot. Black beans, fermented (= Fermented black beans. “Small black beans preserved in salt. Very pungent and moist. Almost always used with garlic and ginger in sauces. Rinse with warm water and mash before using. Purchased in plastic bags by weight in Oriental markets”). Brown bean sauce (“Also

known as yellow bean sauce and ground bean sauce”). Fish soy. Hoisin sauce (“Thick, smooth, dark reddish brown sauce made from soybeans, spices, sugar, chili and garlic. Mildly sweet in flavor”). Soy sauce (light vs. dark with caramel added). Address: San Francisco, California.

1796. Goulart, Frances Sheridan. 1975. *Bum steers: How and why to make your own delicious high protein mock meats, fake fish & dairyless desserts, and avoid useless calories, cholesterol, sodium nitrate, salmonella, trichinosis & high prices.* Old Greenwich, Connecticut: Chatham Press. 205 p. Illust. Recipe index. 21 x 19 cm.

• **Summary:** This vegetarian cookbook, interspersed with many well-selected anti-meat quotations, describes how to make meatless meats and milk-free dairylike products at home. Contents: Introduction. On the block: Major mock-meat-making supplies. *Vegebutchering*: Master mock-meat recipe file. Bogus beef. Pseudo pork. Unreal veal. Sham lamb. Con game. Phony poultry. Fake fish. Un-innards. The vege-deli. Mocking up: General dishes. The mock crock. On the side. Dairyless desserts. Steerage (sources of unfamiliar ingredients).

Chapter 1 begins with an introduction to and nutritional composition of tofu, followed by the soybeans, gluten flour, other legumes, etc. Under “Flavors enhancers” are listed soy lecithin granules or flakes, miso, yeast extract (marmite), soy sauce and tamari, and Worcestershire sauce. Chapter 2 contains recipes for making gluten, tofu, grainola (with soy grits), a stock with miso for non-meat dishes (p. 32), mock milk I (made with soy flour), mock milk II (made with raw cashews or almonds), mock (soy) butter, and mock cream (with soy flour), and mock yogurt (with cashew nuts and soy yogurt culture). A sampling of the many other soy-related recipes include: Moo-less ragout (with tofu, soy sauce, and soy butter, p. 43). Vegetarian rolladen (with cooked ground soybeans, p. 52). Good red meat (with gluten or tofu, p. 53). Greenbutcher’s meatballs (with tofu, p. 57). Mock Mac I (burger with soybeans, p. 64-65). Pineapple pig (with tofu, p. 72). Half-calf (with tofu, p. 79). Surrogate salami (with “bean pulp (residue from making Tofu)” [okara], p. 125). Bumsteads: Two burgers for meat-totalers (with tofu, p. 131). Meatless mincemeat (p. 142). Soybean mustard (with soy sprouts, p. 165). Cow tow: Cowless milk candy (with soy milk powder). Jersey bounce: A moo-juice-less junket (with soy milk, p. 184). Bum bombe: Egg-less, cream free (with soy cream, p. 184). Two 100% vegetarian ice creams: Eggless, milkless (with soy powder, p. 186).

Many recipes also contain wheat gluten: Charisma: Char-broiled bum steers (p. 48). Pig-less pork sausage (p. 70-71). Roast loin of veal (p. 80). Fake steaks: Two sham schnitzels (p. 80-81). Vegetarian cutlets (p. 82). Mocking birds I (p. 83). Fruit stew (p. 86). Sham lamb (p. 89). Sham

lamb curry (p. 91). Bum bunny (p. 97). Sweet breads (p. 121).

Aduki beans are used in Moo-less rice pudding (p. 183). Sources of ingredients include: Walnut Acres, Penns Creek, Pennsylvania 17862 (herbs, spices, oils, whole grains, flours, seaweeds, etc.). Erewhon Trading Co., 342 Newbury St., Boston, Massachusetts 02115 (seaweeds and general goods, grains, beans, vegetables, seeds, etc.). Shiloh Farms, Route 59, Box 97, Sulphur Springs, Arkansas 72768. Arrowhead Mills, Box 866, Hereford, Texas 79045. Dynamic Nutritional Products, P.O. Box 528, North Hollywood, California 91603 (Milk-free yogurt culture. Trade names: Soyadophilus and Theradophilus). Address: Wilton, Connecticut.

1797. Hillyard, Roger. 1975. Biographical sketch. Hereford, Texas. 1 p. Undated. Unpublished manuscript. Followed by an interview on 17 April 2006.

• **Summary:** Born on 28 Aug. 1942 in Seattle, Washington, Roger was raised in the San Francisco area. In early 1965 he met Susan, his wife to be, through mutual friends in the Haight-Ashbury district of SF—where he was living. She was a photographer, working as a sort of apprentice with Ruth Bernard, a professional photographer. In June 1965 he graduated from San Francisco State College with a degree in language arts. He then became technical director for the San Francisco Mime Troupe, produced an experimental film series, and developed one of the first “light shows” in San Francisco.

In Jan. 1966 he started macrobiotics, then in July 1967 he and Susan left San Francisco and moved to New Mexico, where they lived on a 100-acre farm. They were married on Thanksgiving, 23 Nov. 1967 in Placitas, New Mexico. Their first child, Cyrena, a daughter, was born on 13 July 1968 in Santa Fe, New Mexico. In Oct. 1968 they moved to Boston, Massachusetts, where Roger pursue his interest in macrobiotics. He worked at the Erewhon retail store at 303B Newbury St. for 2 weeks, but wasn’t “together” enough, so he worked in a hospital as an operating room orderly for 3 months. In Feb. 1969 he began work at the Erewhon retail store at 342 Newbury St. In Aug. 1969 [actually probably early Oct. 1969] he took over as general manager of Erewhon’s over-all operations. He managed Erewhon-Boston and oversaw the financial aspects of Erewhon Boston and Los Angeles until March 1971. During this period the company grew substantially, wholesale activities were expanded, a warehouse at 33 Farnsworth St. was opened and developed, the staff grew from 6 to 45 members, the retail store’s daily sales grew from \$700/day to \$2,000/day, and imports from Japan expanded (including the largest American stock of hacho [Hatcho] miso).

Roger and Susan’s 2nd child, Christopher, was born on 24 Dec. 1970 in Somerville, a suburb of Boston, at a Seventh-day Adventist hospital that offered natural

childbirth. They were living in Newton at the time. Roger and his family left Boston in mid-1971 and drove to Los Angeles, where he spent 4 months managing Erewhon–Los Angeles. He is currently the manager of Deaf Smith Organic Farms, a joint venture of Erewhon and Arrowhead Mills. He is married, with 2 children. Note: That joint venture, created by Paul Hawken and Frank Ford, never developed. Address: Hereford, Texas.

1798. Irawati, Zubaidah; Winarno, F.G.; Rahman, Ansori. 1975. The effects of mold starters, fermentation containers and storage time on the quality of tauco. In: Dept. of Agricultural Product Technology, Faculty of Agricultural Engineering and Product Technology, Bogor Agricultural University. Research on Tauco: Phase One. See p. C-1–C-10. [6 ref]

• **Summary:** Tauco is Indonesian-style miso. Address: Bogor, Indonesia.

1799. Muso Co. Ltd. 1975. Foods from Japan: Miso. Osaka, Japan. 7 p. [Eng]

• **Summary:** Contents: Introduction. Hacho miso. Mugi miso. Kome miso. How to make miso soup. Address: Osaka, Japan.

1800. Nori kenkô-hô [The way to health through nori]. 1975. Tokyo: Mainichi Newspaper Publishing Co. [Jap]*

1801. Nurhajati, Siti; Winarno, F.G.; Sri Laksmi, B. 1975. Studies of the affect of *Rhizopus oligosporus* and *R. oryzae*, and fermentation time on the quality of tauco. In: Dept. of Agricultural Product Technology, Faculty of Agricultural Engineering and Product Technology, Bogor Agricultural University. Research on Tauco: Phase One. 35 p. See p. C-1–C-12. [11 ref]

• **Summary:** Tauco is Indonesian-style miso. Address: Bogor, Indonesia.

1802. Pearson, Janice; Pearson, Alan. 1975. Light & life cookbook: A new age adventure in natural foods. Forty days of menus and recipes for a transition to balanced vegetarian dieting. Los Angeles, California: Astara. 306 p. Illust. Recipe index. 23 cm. Created with Earlyne Chaney. Series: Astara's Library of Mystical Classics. [20 ref]

• **Summary:** Soy-related recipes include: Tamari dressing (p. 119). Soybean barley soup (p. 221). Savory tofu casserole (p. 223). Miso broth (p. 286). Address: Santa Cruz, California.

1803. Shimizu, Keiichi. 1975. Miso to umeboshi: Nihonjin no chie. San-zen nen mae ni hakken sareta kenkô shoku [Miso and umeboshi salt plums: The wisdom of the Japanese. Health foods discovered 3,000 years ago]. Tokyo:

Tokyo Sports Shinbunsha. 252 p. Illust. 18 cm. Series: Tosupo Bukkutsu. [Jap]*

• **Summary:** Keiichi Shimizu was born in 1907.

1804. Shokuryo-cho. 1975. Miso no seizô oyobi ryûtsû kijun [Regulations governing the manufacture and distribution of miso]. Tokyo. 274 p. Illust. 21 cm. [10+ ref. Jap]*

1805. Silverstein, Alvin; Silverstein, Virginia B. 1975. Beans: All about them. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.. 86 p. Illust. by Shirley Chan. Index. 22 cm. Summarized in Soybean Digest, Sept. 1975, p. 43. [7 ref]

• **Summary:** This book for children discusses beans in legend and history, how to grow them, and their future as a low-cost protein supplement. Includes experiments, bean recipes, and games.

Contents: Beans. The story of beans. The history of beans. Beans in legend and lore. The life story of the bean. Kinds of beans. Beans in the garden and the marketplace. Beans for the future. Fun with beans. Beans for good eating.

Page 2: “Kuan Yu, a great war god in Chinese folktales, was a bean curd [tofu] seller in his youth.”

Pages 12-13, a brief (and partially accurate) history of the soybean, begin: “Soybeans are native to eastern Asia. The oldest written records of them date back to 2838 B.C. [sic], when Emperor Shen Nung of China wrote a description of the plant.” Also mentions: The five sacred grains, soybean “milk,” tofu, yuba, [soy] sauces, soybean paste, soybean sprouts, soybean oil, Engelbert Kaempfer, first introduced “to the United States around 1800 when a ship brought some to Philadelphia, Commodore Perry (1854), USDA tested about 10,000 different kinds. Now soybeans are the number one U.S. cash crop, accounting for more then 75% of the world’s soybean supply. Soybeans are used as foods for humans (in the form of oil, flour, soy sauce, “milk substitutes, and meat substitutes and ‘extenders’”) and feeds for animals. They are also used in the manufacture of more than 250 industrial products, including paints, soaps, lubricants, adhesives, and fertilizer.

Page 16: “In China, beans were a good luck symbol. A person who wore a string of soybeans hidden around his neck was believed to possess magic powers to do amazing feats. Three dark soybeans soaked in sesame oil for three days were used to foretell the future.”

The chapter “The life story of the bean” (p. 18-29) gives (with illustrations) a simple and accurate description of the bean seed and how it grows, discussing the hilum or seed scar, the micropyle or tiny hole at one end of the hilum, the seed coat, the two cotyledons in which food for the young growing plant are stored, the embryo nestled (a plant in miniature) between the cotyledons, with its two tiny leaves (the plumule), a little root (the radicle), and a stemlike part

connecting them (the hypocotyl). When the seed is planted, and it germinates or sprouts, the “embryo root pokes its tip out through the micropyle and grows out into the soil. Tiny root hairs form along the growing root. They take in moisture and dissolved minerals from the soil.” The hypocotyl grows until it “suddenly pushes up out of the soil—the first part of the seedling to emerge. It is bent over, for the cotyledons are still buried in the soil.” The hypocotyl continues to grow. In a day or so the seed coat splits, then the top of the plant pops up out of the soil. “The empty seed coat is left behind, buried beneath the surface.” Now the young bean seedling is growing straight up. The two seed leaves at the top unfold and grow quickly. Below them on the stem are the two cotyledons. As sun shines on the growing plant, its leaves, cotyledons, and stem begin to turn green—a turning point in the life of the plant.

For a while, the growing plant takes the food it needs from the reserves stored in the two cotyledons. But as these reserves are used up, they shrivel and finally fall off. Now the young plant must create its own food using chlorophyll and photosynthesis.

Chlorophyll traps energy from the sun. When examined under a magnifying glass, one can see that the surface of a plant leaf contains many tiny openings called stomates, which are usually open during the day and closed at night. “When the stomates are open, gases from the air pass freely in and out.” Air is about 80% nitrogen, 20% oxygen, plus smaller amounts of carbon dioxide, water vapors, and others gases. In the leaves, “carbon dioxide and water are combined, using the sunlight energy trapped by chlorophyll, into sugar, starches, and other complicated chemicals. Scientists call this process photosynthesis (photo means light, and synthesis means a putting together).” The by-product, oxygen, passes out into the air through the stomates; it is the gas that humans and other mammals need to breathe.

Describes the underground activities related to plant growth, nodules, bacteria that live symbiotically in the roots and fix ammonia and nitrogen. Also describes the bean flower, its parts, self-pollination, and they key role of bees. And how the seeds are formed from the flower.

The chapter “The soybean—Number one” (p. 36-39) describes the current status of the soybean in the USA. The chapter “Beans for the future” discusses modern developments such as CSM, soyfoods such as sufu, tempeh, miso, spun soy protein fibers, soybean meat analogs, textured vegetable protein (TVP).

When a bean seed sprouts, how does it know which way is “up”? “Could you ever get a seedling with its roots pointing up in the air and its shoot poking down into the soil?” Supposing you cut off all sunlight? No, plants have a built-in gravity sense which scientists call “geotropism.” A plant hormone called an auxin causes the plant to bend upward—and toward the light (heliotropism). In 1888, the

symbiotic partnership between legumes and nitrogen fixing bacteria was first discovered by Hellriegel and Wilfarth. There are short-day plants, long-day plants, and day-neutral plants; flowering will not begin until the length of days and nights is just right (p. 54-59). Bean recipes (p. 70-75). Address: 1. Prof. of Biology, Staten Island Community College, New York City; 2. Translator of Russian scientific materials.

1806. Sulistioningsih, -; Winarno, F.G.; Jenie, B.S.L.; Muchtadi, Deddy. 1975. The effects of soybean varieties and different mold species mixtures for fermentation on the quality of tauco during storage. In: Dept. of Agricultural Product Technology, Faculty of Agricultural Engineering and Product Technology, Bogor Agricultural University. Research on Tauco: Phase One. See p. B-1 to B-12. [12 ref]
• **Summary:** Tauco is Indonesian-style miso. Address: Bogor, Indonesia.

1807. Swastomo, Wasidi; Winarno, F.G.; Muchtadi, D. 1975. Studies of the affect of soybean variety, soaking time and brine concentration on the quality of tauco. In: Dept. of Agricultural Product Technology, Faculty of Agricultural Engineering and Product Technology, Bogor Agricultural University. Research on Tauco: Phase One. 35 p. See p. A-1 to A-12. [11 ref]
• **Summary:** Tauco is Indonesian-style miso. Address: Bogor, Indonesia.

1808. Wood, B.J.B.; Yong, Fook Min. 1975. Oriental food fermentations. In: J.E. Smith and D.R. Berry, eds. 1975. The Filamentous Fungi. Vol 1. Industrial Mycology. New York: Wiley & Sons. xi + 336 p. See p. 265-80. [29 ref]
Address: Univ. of Strathclyde, Glasgow, Scotland.

1809. Zainudin, Djendjen; Winarno, F.G.; Rachman, A. 1975. Studies of the affect of different mold species and fermentation times on tauco production. In: Dept. of Agricultural Product Technology, Faculty of Agricultural Engineering and Product Technology, Bogor Agricultural University. Research on Tauco: Phase One. 35 p. See p. B-1-B-11. [7 ref]
• **Summary:** Tauco is Indonesian-style miso. Address: Bogor, Indonesia.

1810. *Hokubei Mainichi*. 1976. Tofu demonstration in Berkeley today. Jan. 14.
• **Summary:** “As a community service, the Co-op Natural Foods Center council is inviting the public to meet Bill Shurtleff and Akiko Aoyagi, co-authors of ‘The Book of Tofu,’ during a lecture-demonstration on Wednesday, Jan. 14, 7:30 p.m., in the University Avenue Co-op meeting room, at 1414 University Ave., Berkeley. The speakers will prepare and serve a number of their favorite Tofu and Miso

recipes, teach how to make Tofu at home (for less than \$0.13 a lb), discuss Tofu and Miso as excellent sources of high-quality, low-cost protein, and explain why these traditional soybean foods offer a realistic hope for solving the world food crises... A \$1 contribution is requested to help defray the cost of supplies and samples.” Address: San Francisco, California.

1811. Hesseltine, C.W. 1976. Miso no shinki yôto [New uses for miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 263. p. 5-7. [Jap]

• **Summary:** Translated by Dr. Hideo Ebine. Address: NRRL, Peoria, Illinois.

1812. Koyama, M. Assignor to Shinshu Miso Company. 1976. Process for producing processed low salt soybean paste. *U.S. Patent* 3,937,844. Feb. 10. 3 p. Application filed 20 Dec. 1974. [3 ref]

• **Summary:** “An improved process for producing soy bean paste miso by adding lactic acid at the early stage of fermentation to effect lowering of the pH, thereby resulting in a salt content of less than 10%...

“The improved process according to this invention comprises the steps of adding 0.05–0.5% (75% density) lactic acid or organic acid into the conventional components of bean paste at its early stage, lowering the PH of said paste at said early stage, brewing and ripening said paste with salt less than 10%.” Address: Tokyo, Japan.

1813. Ho, Coy Choke; Koh, Chong Lek. 1976. Microbiology of soybean-based fermented food in South-East Asia. Paper presented at the Third INTSOY Regional Soybean Conference. 7 p. Held 23-27 Feb. 1976 at Chiang Mai, Thailand. Unpublished manuscript. [17 ref]

• **Summary:** The relatively well-studied soy-based fermented foods in South-east Asia are tempe, sufu (soy cheese), ontjom tahu [okara tempeh], tau chiow ([tauco, tauch], soybean paste), soy sauce, and thua-nao (natto). These are shown in Table 1, with the microorganisms responsible for fermentation, substrates, uses, and principal references given for each. “It can be noted that only a very limited range of genera of fungi are involved in these fermentations, namely *Rhizopus*, *Aspergillus*, *Neurospora*, *Actinomucor* and *Saccharomyces*. Furthermore, within a genus only a very limited number of species are actually utilized, for example *Aspergillus sojae* in soy sauce fermentation, and *Neurospora intermedia* in ontjom tahu fermentation.

“Regarding ontjom tahu fermentation, the fungus used was formerly erroneously listed as *Neurospora sitophila* (Dwidjoseputro, 1961).”

The authors then use analyses of conidia color and crossing experiments based on meiotic sterility to show that

the cultures on okara tempeh (ontjom tahu) belong to a single species, *Neurospora intermedia*.

Note: This is the earliest English-language document seen (March 2009) that uses the word “tau chiow” to refer to Indonesian-style miso. Address: Dep. of Genetics and Cellular Biology, Univ. of Malaya, Kuala Lumpur, Malaysia.

1814. *Open Education Exchange (Berkeley, California)*. 1976. Tofu & Miso Cookery [Class by Liz Horowitz and Bob Gerner]. Feb. p. 2.

• **Summary:** Liz has 2 years experience cooking at Tassajara and Westbrae Natural Foods. Bob is a founder of Westbrae and an expert on tofu and miso. Four meetings, Mondays 6-8 p.m. Class size: 5-15. Preprinted recipes. A \$6-\$10 food fee is payable to instructors. Classes held in north Berkeley.

1815. Shurtleff, William; Aoyagi, Akiko. 1976. Soybean foods from Japan (Letter to the editor). *Organic Gardening and Farming*. Feb. p. 15-16.

• **Summary:** “For the past 4½ years, I have been living in Japan doing research and writing a book about two of East Asia’s most important soybean foods: tofu and miso, both of which seem to hold real promise of becoming basic sources of high-quality, low-cost protein throughout the world.

“This spring, Ms. Akiko Aoyagi, the Japanese cook and artist with whom I have been working, and I plan to travel throughout the United States visiting natural food centers, communities, and other interested groups. We will be conducting cooking classes, giving talks, and showing slides about these remarkable foods. We will also give demonstrations on the preparation of tofu and miso on a family, community or commercial scale. If anyone is interested in having us visit your area, please contact us at 790 Los Palos Drive, Lafayette, Cal. 94549.” Note: At this time Shurtleff & Aoyagi were still living in Tokyo. They returned to Lafayette, California on 23 July 1976, and left from there on their Tofu & Miso America Tour on 29 Sept. 1976. Address: Lafayette, California.

1816. Jerram, Elsie. 1976. Tofu adapts to American menus: Authors introduce an ancient food. *Monterey Peninsula Herald (California)*. March 17. p. 30. [1 ref]

• **Summary:** Based on a lecture by Shurtleff and Aoyagi, who “visited the Peninsula recently” (probably shortly before Feb. 10). Contains 5 black-and-white photos by Bob Fish. One shows Brian George of Pacific Grove making tofu in his apartment kitchen. Another shows Shurtleff and Aoyagi serving miso-topped apple slices and creamy tofu dip during a lecture.

1817. *Foreign Agriculture*. 1976. Outlook better for soybeans in three Far East markets. March 22. p. 2-4.

• **Summary:** The improved forecast is for Japan, Taiwan, and South Korea. Once virtually free of competition for the important Japanese soybean market, the U.S. must now reckon with Brazil as a competitor, while facing Malaysian palm oil in the vegetable oil market. Brazil's soybean exports to Japan last year, for instance, probably totaled only about 60,000 tons, compared with the 2.8 million tons of U.S. beans. The cost of shipping Brazilian beans to Japan in 1975 averaged \$5-\$10 per ton more than from the U.S. This difference reflected the longer distances from Brazilian ports, plus Brazil's use of smaller ships. The 10-day-longer shipping time from Brazil is especially important in Japan, where timeliness of cargo is a key market factor.

There is only one major oilseed crusher and meal supplier in Korea. The Government production plan calls for self-sufficiency in soybeans and the country has launched a strong drive in this direction. Current Korean production of soybeans totals about 311,000 tons. The low-oil variety of bean produced in Korea is best suited for food use (e.g. miso).

Taiwan is the largest per capita consumer of soybeans in the Far East, with a per capita soybean oil consumption of about 11 pounds in 1975 (out of 13 pounds for all vegetable oils).

1818. Bortz, Brenda. 1976. The joys of soy. II. Tofu and tempeh. *Organic Gardening and Farming* 23(3):128-31. March. See also Part I: 23:28-30, 32, 34, 36, 38. Feb.

• **Summary:** "Two Far Eastern soybean favorites—tofu and tempeh—turn up exciting new menu and nutrition ideas in the OGF Research and Development Group's latest tests..."

"At this time, Dr. Schwartz is inviting a limited number of adventurous OGF readers to help him evaluate the ease and dependability of his method and tempeh's potential as a new food for Americans. Readers who would like to join R & D's modest 'Soybean Task Force' should write to Nancy Bailey, R & D Readers' Service, Rodale Press Inc., Emmaus, Pennsylvania, 18049. Those selected will receive soybeans, culture, and complete instructions for making the simple incubator and tempeh itself."

Contains a recipe for Tofu Loaf with Onion and Cheese from *The Book of Tofu* by Shurtleff and Aoyagi.

Note: This is the earliest document seen (March 2003) that mentions tempeh, published by or in connection with Rodale Press.

1819. **Product Name:** Tekka (Miso Condiment).

Manufacturer's Name: Eden Foods, Inc. (Marketer-Distributor).

Manufacturer's Address: 4601 Platt Rd., Ann Arbor, MI 48104. Phone: (313) 973-9400.

Date of Introduction: 1976. March.

Ingredients: Incl. carrot, burdock, ginger, lotus root, miso.

Wt/Vol., Packaging, Price: 2.8 oz jar.

How Stored: Shelf stable.

New Product—Documentation: Eden Foods. 1976. March. Spring Catalog. Page 15. "Tekka. A salty condiment very rich in iron and minerals. Made from carrot, burdock, ginger, lotus root, and miso."

1820. Eden Foods. 1976. Spring catalog. 4601 Platt Rd., Ann Arbor, MI 48104. 30 p.

• **Summary:** On the cover is a woman carrying a sheaf of grain and a sickle on her head, with a child following after her. This is the first catalog with explanations of the product categories and individual products. Tamari Soy Sauce is now sold under 2 labels (Erewhon, and Marushima). "All of this soy sauce, bulk and bottled, is naturally and slowly aged for 2 years in wooden kegs. Made from soybeans, wheat, water, and salt." Hacho miso and kome (rice) miso, both still sold under the Erewhon brand, are fermented for 2 years, barley miso for 18 months. A new condiment is Tekka, sold in a 2.8 oz jar. "A salty condiment very rich in iron and minerals. Made from carrot, burdock, ginger, lotus root and miso."

Under packaged meals is Fritini (regular, with herbs, with curry, or with paprika; 8 oz.). Also new is Plum Extract (Bainiku Ikisu [sic, Ekisu]). Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

1821. Kiuchi, Kan; Suzuki, Tatsuro; Ohta, Teruo. 1976. Screening of flavor-producing yeasts in soybean cooking drain. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 31. p. 226-32. March. [12 ref. Eng; jap]

• **Summary:** Cooking drain refers to the waste water left over after cooking soybeans while making miso.

Reprinted from *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 53(6):386-92 (1975)—as "Studies on the utilization of soybean cooking drain exhausted in miso fermentation (I)." Address: 1&3. Div. of Applied Microbiology, National Food Research Inst., MAFF, Koto-ku, Tokyo, Japan; 2. Suzusei Shokuhin Co., Ltd., Yamanecho, Ichinoseki, Iwate.

1822. Kiuchi, Kan; Suzuki, Tatsuro; Ohta, Teruo. 1976. Conditions for the growth and production of flavor of the yeasts in soybean cooking drain. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 31. p. 233-41. March. [8 ref. Eng; jap]

• **Summary:** Reprinted from *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 53(6):386-92 (1975)—as "Studies on the utilization of soybean cooking drain exhausted in miso fermentation (II)." Address: 1&3. Div. of Applied Microbiology, National Food Research Inst., MAFF, Koto-ku, Tokyo, Japan; 2. Suzusei Shokuhin Co., Ltd., Yamanecho, Ichinoseki, Iwate.

1823. Norinsho. 1976. *Nihon shokuhin hyôjun seibunhyô* [Food composition tables for Japan. 2nd ed]. Tokyo: Ishiyaku Shuppan K.K. 180 p. March 25. Index. 15 x 21 cm. [Jap]

• **Summary:** The first edition of this book was published on 15 Jan. 1964. The first revised edition (130th printing) was published on 25 Jan. 1969. This is the second revised edition (265th printing), published on 25 March 1976. Also published by Joshi Eiyo Daigaku Shuppan-bu.

For soybeans and soyfoods, see pages 33-35, 69, and 74 (basic nutritional composition), and 111-12 (amino acid composition).

Page 88, No. 812: Amazake. Per 100 gm. Calories 101, moisture 74.0 gm, protein 2.4 gm, fat 0.1 gm, carbohydrates (sugars 22.7 gm, fiber 0.6 gm), ash 0.2 gm, calcium 74 mg, phosphorus 25 mg, iron 0.4 mg, vitamin A 0 mg, vitamin B-1 0.08 mg, vitamin B-2 0.06 mg, nicotinic acid 0.06 mg, vitamin C 0 mg.

A later edition (after 1976), containing at least 298 pages, gives details on the following soy-related foods (p. 76-80): Japanese-grown whole soybeans (dry, or boiled). Whole dry USA-grown soybeans. Whole dry Chinese-grown soybeans. Green immature soybeans (edamame; raw, or boiled). Soybean sprouts (raw, or boiled). Defatted soybeans (whole, or dehulled). Kinako (soybeans roasted and ground). Budô-mame (soybeans boiled with shoyu). Momen tofu (regular). Kinugoshi tofu (silken). Soft tofu. Packed tofu. Okinawa tofu. Yaki-tofu (grilled). Nama-age. Abura-age. Ganmodoki. Kôri-dofu. Tofu-chikuwa (steamed type, or roasted type). Natto (fermented soybeans): Itohiki-natto, Goto natto, or tera-natto.

Miso: Rice-koji miso (sweet type, light yellow type, dark yellow type). Barley-koji miso. Soybean-koji miso. Dried miso. Kinzanji miso. Hishio-miso.

Other: Okara. Soymilk (regular, reconstituted, or soft drinks). Yuba (wet, or dried).

Page 254 gives the amino acid composition of soybeans and various soyfoods. Page 298 gives the protein scores, amino acid values, and chemical scores of selected foods. Page 8 gives the energy conversion factor for tofu, age, and yuba.

1824. Colchie, Elizabeth. 1976. The sensual soybean: Eating well at bargain-basement prices. *House and Garden* 148:133, 144, 146. April. [1 ref]

• **Summary:** A brief introduction to soy flour, sprouts, whole dry soybeans, roasted soybeans, bean curd cakes [tofu], fermented curd, bean curd skin [yuba], dried bean curd sticks, bean paste, miso, black beans [soy nuggets]. With illustrations from *The Book of Tofu* by Shurtleff & Aoyagi.

1825. Dart, Susan. 1976. Mother finds way to beat food additives: Natural foods. *Chicago Tribune*. May 13. p. E30.

• **Summary:** Clara Lo was born in Hong Kong, but educated in the USA. She marinates her ground pork with “Chinese bean paste [jiang], which she buys in Chinatown.” She points out that “a marinade of soy sauce would have the same effect, but the soy sauce must not contain sodium benzoate or other preservatives and be free of any coloring whatsoever...”

Note: This is the earliest English-language document seen (March 2009) that uses the term “Chinese bean paste” to refer to Chinese-style miso.

She notes that the Chinese have traditionally eaten a balanced diet. Based on rice, or wheat, it always includes “green vegetables, fish, meat or soy bean cake [tofu]...”

1826. Crum, Maggie. 1976. Tofu—will it be the staff of life. *Contra Costa Times*. May 19. p. 13. [1 ref]

• **Summary:** About the work of William Shurtleff and Akiko Aoyagi. A photo shows the two co-authors holding up their *Book of Tofu*. “The popular tofu enthusiasts are currently back in Japan, where they are working on their second book, whose subject is miso... Come summer, Bill and Akiko will return to the United States to begin a lecture/demonstration tour in over 100 towns and cities.” Contains 4 tofu recipes. Address: California.

1827. Huang, Su-hei (Miss). ed. 1976. Chinese cuisine: Wei-Chuan cooking book. Taipei, Taiwan: Wei-Chuan Publishing Co. 221 p. May. Illust. Index (at front). 27 cm. [Chi; Eng]

• **Summary:** This attractive book of Chinese cooking from the Wei-Chuan Cooking School is a bilingual Chinese / English edition. On each page is one recipe and a 1/3-page color photo of the prepared dish. The title of the recipe is written in Chinese in large bold characters and is also given (to the right) in smaller bold letters in English. Above the number of servings is the province or region of China from which the recipe comes (e.g., Szechuan, Cantonese, Peking, Hunan, etc.) Most of the recipes call for ¼ to ½ teaspoon of MSG; many call for soy sauce.

The introduction (p. 2-17) contains: (1) Seasonings for Chinese cooking, incl. soy sauce. (2) Instruments [utensils] for Chinese cooking. (3) Culinary idioms (basic techniques, such as cleaning, cutting, heating the pan, stir frying, etc.). (4) Arrangement of seating order at feast. (5) Arrangement of the dinner sets at a feast. (6) Arrangement of food and menu. (7) Basic principles of arranging the menu. (8) Sample menus for banquets or ordinary meals. (9) Commonly used vegetables (2-page color photo, incl. “9. yellow soybean sprouts”).

(10) Commonly used dry materials and canned foods (2-page color photo, incl. “6. fried gluten balls {‘mien jin pau’}.” 13. pickled plums (‘umeboshi’). 18. agar-agar. 33. nori (purple laver sheet). 35. bean curd skin [yuba, doufu p’i]. 36. bean curd roll. 37. Pressed bean curd cake

[*doufugan*]. 39. kau fu. 40. bean curd wrapper (bai yeh; pressed tofu sheets). 41. vegetarian gluten roll (*mien jin*). 42. dried bean curd noodles [*kan-ssu*]. 43. Fermented black beans [soy nuggets]. 44. bean curd stick (*'fu dzu'*). 47. Soy sauce. These two pages also show Wei-Chuan Foods Corp. is a manufacturer of many Chinese-style foods.

(11) Description of some other special ingredients. "1. Hot bean paste (pronounced *'la jiao jiang'*). A thick spicy paste made from ground hot red peppers and soy beans." "2. Sweet bean paste (*'t'ien mien jiang'*). Made 'from ground, fermented steamed bread and spices'" [soy is not mentioned]. "3. Soy bean paste (*'do ban jiang'*). A thick black paste similar in taste to sweet bean paste, but made from fermented soybeans." "8. Fermented black beans: Small black [soy] beans which have been marinated in soy sauce and salt and are used to flavor steamed fish and meat or in stir-fried dishes." "10. Pickled bean curd or Chinese cheese (*'do fu ru'*). Bean curd cubes which are first dried and then mixed with wine, spices and salt and allowed to ferment. It is used to season braised pork and duckling." "21. You tiau. A deep-fried crispy Chinese cruller..." * "Kau fu: A spongy type of vegetarian ingredient made from wheat gluten" (see p. 151). "Fried gluten ball (*'mien jin pau'*): A type of light, round, deep-fried ball made from wheat gluten and water." "Su tsang: A type of long thin roll made of wheat gluten and water."

Interesting soy related recipes: Bean curd noodle and celery salad (with "4 oz. bean curd noodles," Szechuan, p. 23). Steamed spareribs with fermented black beans (with "3 T. [tablespoons] fermented black beans," garlic, ginger root, rice wine, and soy sauce, Cantonese, p. 60). Steamed pork in preserved bean sauce (with "2 squares fermented bean curd" (*'do fu ru'*), Cantonese, p. 74). Steamed carp with fermented black beans, Hunan, p. 88. Braised carp with hot bean paste (with "1½ T. [tablespoons] hot bean paste" (*'la do ban jiang'*), Szechuan, p. 100). Stir-fried oysters with fermented black beans (Taiwanese, p. 132).

One section of the book titled "Bean curd & eggs" (p. 140-49) contains various tofu and yuba recipes, including: Ma-Po's bean curd (Szechuan, p. 140). Vegetarian chicken loaves (with "16 sheets bean curd skin" [yuba], Shanghai, p. 147). Eggplant rolls with chopped pork (with "1 sheet bean curd skin, Taiwanese, p. 148). Stuffed bean curd rolls (with "8 bean curd sheets (*bai ye*), Shanghai, p. 149). Bean curd is counted in squares. Address: Taiwan.

1828. Saono, S.; Brotonegoro, S.; Abdulkadir, S.; Basuki, T.; Jutono, -; Badjra, I.G.P. 1976. Microbiological studies of tempe, kecap, and taoco. I. Quantitative estimation and isolation of microorganisms from some products from West Java. In: ASEAN Project on Soybean and Protein Rich Foods, Progress Report on Research Activities, Jan-May, 1976. Appendix 7. *

• **Summary:** Note: This is the earliest English-language document seen (March 2009) that uses the word "taoco" to refer to Indonesian-style miso.

1829. Shurtleff, William; Aoyagi, Akiko. 1976. What is miso? (Brochure). Berkeley, California: Westbrae Natural Foods Inc. 10 panels. Illust. by Akiko Aoyagi. May. 24 x 13 cm.

• **Summary:** Contents: Introduction. Delightfully varied; highly versatile. A nutritional treasure trove. The varieties of miso (including a table). The preparation of miso. Traditional natural miso and quick modern miso. A brief history of miso. Buying, storing, and using miso. Miso in Japan. Traditional Japanese miso shops and modern factories. Making miso at home. Favorite miso recipes (contains 16 recipes). About the Soyfoods Center.

Note: This brochure was sponsored, published, and widely distributed by Westbrae Natural Foods Inc., 1124 10th St., Berkeley, California 94710. From May 1976 to Dec. 1979 approximately 105,000 copies were printed. Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

1830. Burros, Marian. 1976. The no-sweat barbecue. *Washington Post*. June 24. p. E23.

• **Summary:** The recipe for Chinese barbecued ribs calls for "¾ cup hoisin sauce. 3 tablespoons yellow bean paste. 1½ tablespoons dark soy sauce."

1831. Miyako Oriental Foods, Inc. 1976. Cold Mountain Firm Granular Rice Koji recipes (Leaflet). Los Angeles, California. 2 p. Front and back. 28 cm.

• **Summary:** Printed with brown ink on both sides of a yellow sheet of paper, this leaflet contains recipes for homemade red miso, sweet white miso, and amazake, all excerpted with permission from *The Book of Miso* by Shurtleff and Aoyagi. One copy of the leaflet was packed with each tub of firm koji sold by Miyako. A copy was also printed in *Soycraft* newsletter (No. 3, June 1976, p. 6). A number of America's early manufacturers of commercial amazake learned how to make it from this leaflet.

Note: This is the earliest document seen (April 2009) concerning Miyako Oriental Foods. Address: 404 Towne Ave., Los Angeles, California 90013. Phone: (213) 488-1678 Factory.

1832. Shurtleff, William. 1976. Koji starter for miso and shoyu. Nerima-ku, Tokyo, Japan. 2 p. Undated (June?). Catalog.

• **Summary:** This typewritten, photocopied, 2-page leaflet describes 9 different types of koji starter for: Red miso, barley miso, soybean miso, mellow barley miso, sweet white miso, light-colored miso, fast white miso, amazake or pickling, or shoyu. All 9 types are available from: Mitoku

Trading Co., Attn: Mr. Akiyoshi Kazama, C.P.O. Box 780, Tokyo 100-91, Japan. Phone: 03-201-6706. Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

1833. *Asahi Shinbun (Asahi Daily News, Tokyo)*. 1976. Nihon to watakushi. Kondo wa Miso no Hon o [Japan and I. This time its a book on miso. Bill Shurtleff, the American food researcher who wrote *The Book of Tofu*]. Aug. 16. p. 4. [2 ref. Jap]

• **Summary:** Two photos show Shurtleff talking and one shows the cover of *The Book of Tofu*. Address: Japan.

1834. Tonomura, Tamihiko. 1976. Researcher on tofu, miso: Bill Shurtleff. *Asahi Evening News*. Aug. 23. Monday. [Eng]

• **Summary:** Contains a biography of Shurtleff and a history of how and why Shurtleff wrote *The Book of Tofu*, which is now in its third printing and has sold 30,000 copies. Photos show: (1) Shurtleff talking. (2) The cover of *The Book of Tofu*. Note: Akiko Aoyagi, co-author, artist, and cook. is not mentioned. Address: Asahi Shimbun writer, Japan.

1835. Bennett, Gordon. 1976. Re: What is Miso? pamphlets from Westbrae Natural Foods. Letter to William Shurtleff at New-Age Foods Study Center, Aug. 25. 2 p. Handwritten, with signature. [1 ref]

• **Summary:** “(1) Greetings! This letter is a collection of several days of considerations: (2) Is it possible to omit your side of how miso is packaged in America—our miso bag looks terrible next to others, and its a label we no longer use; a new slide?

“(3) Is it possible to get some pictures made of the miso slides—we’d like to put some of the more striking one into our pricelist & perhaps use as displays in our stores. I will arrange and pay for this.

“(4) Re giving away pamphlets across the country; we feel this is basically a good idea. However (1) we would like you to give away the WB [Westbrae] logo pamphlets...

“(5) Sea vegetables—we are writing to Japan to determine what their labeling capabilities are—this will actually decide whether we can use your copy as is, or whether we need to edit it down...

“(6) Due to the surprisingly small turnout at the lecture, our expenses were much greater than the number of people present @ \$1.00 per person. Next time we will use posters!” Note: Bill Shurtleff gave a outdoor lecture and slide show for Westbrae on Tuesday, Aug. 24, at John Hinkel Park in Berkeley, from 5-8 p.m.

“(7) A number of requests are coming for single pamphlets. We would like to forward there to you for your follow-up and interest. (8) The overseas mailing are more complex than we had thought. (9) Only 1 reply on the pamphlets so far—Manna in Toronto [Ontario, Canada]—their logo—small number [5,000]. (10) It is much more

convenient for me to arrange to get your pamphlets, agar, or whatever you’d like in advance... (11) We all thoroughly enjoyed Tues eve.—thank you & thank you Akiko—Gordon.” Address: 1224 10th St., Berkeley, California 94710. Phone: 415-524-0506.

1836. Doorn, Wil van. 1976. Lima, the European Erewhon. *East West Journal*. Aug. p. 21-22, 24-25. [Eng]

• **Summary:** This is an interview with Pierre Gevaert, co-owner and manager of Lima natural food factories in St. Martens, Latem, Belgium. Gevaert was working for world peace before George Ohsawa visited in May 1957. In early 1959 Gevaert started to produce large quantities of miso and tamari soy sauce at St. Martens Latem, Belgium, with the help of two Japanese specialists that Ohsawa had sent. The company, named Lima, was officially started in March 1960, though they had been producing food for almost 3 years under the name “Sesame.”

In 1962 Lima started to contract with farmers to grow grains organically; they were the first company in Europe to do this, in part because they were so familiar with organic agriculture themselves. “Using the knowledge gained from our own experience, we taught many farmers to grow their produce organically again in the traditional manner.” Brown rice was grown in the south of France. In 1967, after operating at a loss for many years, a businessman-consultant named Edouard van der Seelen advised them to halt production of miso and tamari. Sales were good but the products took 3 years to mature.

Pierre is a Catholic who has practiced macrobiotics for 19 years.

Note: This is the earliest document seen (Jan. 2003) concerning the soyfoods movement in Europe.

1837. Ohlund, Tim. 1976. Re: Work with miso and koji in Sweden. Letter to William Shurtleff at New-Age Foods Study Center, Aug. 2 p. Handwritten.

• **Summary:** “Dear friend. I have been very impressed with your articles on tofu and tempeh in such magazines as *East West Journal* and *Mother Earth News*. I have been working in this area on a very small scale since about 5 years ago, when I got into macrobiotics in Japan under Nahum Stiskin. Since then I have been living in Sweden studying Japanese and Chinese at Uppsala University as well as managing a truck garden (biodynamic) during the summers.”

He has been growing Japanese vegetables in Sweden—with good results. “I’ve also been working with a new variety of soybean suited for this northern climate. This year I have a very good crop of them. The last two winters I’ve been making up batches of miso just to see how it would go and gain some experience at it. It is not yet as I would like it, but that will take some time. What I really need at this time is some good literature on the subject. My friend and I have combed the library at the university here and found

much important information on tofu, tempeh, and lactic acid fermentation in *Applied Microbiology* and *Journal of Food Science*, etc.” He requests more information and contact people. He may make another trip to Japan in the next year or shortly thereafter to do research. Address: Box 559A, 19063 Örsundsbro, Sweden.

1838. Ohsawa-Japan. 1976. List of macrobiotic food products & related items. Tokyo, Japan. 2 p. Single sided.
 • **Summary:** Printed with black ink on white paper. Soy related products: Soya bean sauce (shoyu). Soya bean paste (miso). Mugi miso. Kome (koji) miso. mame miso. Tekka. Black [soy] beans (Kuromame). No prices are given. Address: 11-5 Ohyamacho, Shibuyaku, Tokto, Japan. Phone: (03) 465-5021.

1839. Order forms containing names and addresses of people who purchased publications or materials from New-age Foods Study Center in Aug. 1976 (Archival collection). 1976. Lafayette, California. Order forms filled out by the person who placed the order.

• **Summary:** BOT2 = The Book of Tofu, Vol. 2—later titled Tofu & Soymilk Production. BOM = The Book of Miso. BOM2 = The Book of Miso, Vol. 2—later titled Miso Production. TB = Tofu box. TK = Tofu Kit. NN = Natural nigari. CTE = Catalog of commercial tofu-making equipment. CKS = Catalog of koji starter for miso or shoyu.

August: Quong Hop’s Co., 161 Beacon St., South San Francisco, California 94080 (BOT2, CTE). Steven Zeev Berg, c/o Caldron Restaurant, 306 E. 6th Street, New York, NY 10003 (BOT2—The book did not arrive until Nov. 1976). Peter G. Beane, Star Route, North Anson, Maine 14958 (BOT2). Doug Wasyliw, 842 E. 10th Ave., Vancouver, BC V5T 2B1, Canada (BOM2, 10 WIT, 10 WIM, 2CTE, 2CKS). Bob & Toni Heartsong, 6051 S.W. 46 Ter. [Terrace], Miami, Florida 33155 (BOM, BOT2, BOM2). Lorenz A. Schaller, South Pasadena, California 91030 (BOM2). James Hemminger, 216 E. Ella, Fayetteville, Arkansas 72701 (BOM, BOM2). Address: New-Age Foods Study Center, 790 Los Palos Dr., Lafayette, California 94549. Phone: (415) 283-3161.

1840. Shurtleff, William; Aoyagi, Akiko. 1976. Miso to wa? [What is miso? Translated into Japanese by Tsutomu Mochizuki]. Shinshu Miso Research Inst., Nagano-shi, Japan. 15 p. [1 ref. Jap]

• **Summary:** A Japanese-language translation of the English-language pamphlet “What is Miso?” originally published by Westbrae Natural Foods in on 1 May 1976. Dr. Mochizuki was interested in this western viewpoint on miso. Address: Authors: 790 Los Palos Dr., Lafayette, California 94549; Translator: Director, Shinshu-Miso Research Inst., Nagano-shi, Japan.

1841. *Chicago Tribune*. 1976. Stocking your Mandarin pantry: A grocery list for Mandarin cooks. Sept. 16. p. D1.

• **Summary:** There are four basic categories of supplies: Dried, canned, condiments, and produce. Under “Dried” we find: “Fermented black beans—Also called salted black beans. Sold in plastic bags, slightly moist; store in covered container in refrigerator.”

Under “Canned” are Hoisin sauce, and Hot bean paste. The latter is “Essential to Szechwan dishes... (Don’t buy sweet bean paste, yellow bean paste, or soy bean paste by mistake).

Under “Condiments”—“Light soy sauce—The kind you are used to. Buy the ubiquitous brand all Chinese stores and restaurants use, Kikkoman; buy at least a pint.” “Dark or black soy sauce—Used as flavoring. Thicker than regular soy, it has a molasses-like quality and is a necessity in many dishes. Measure carefully, though, because it can be overpowering.” Also rice vinegar, and sesame oil made in Taiwan or Hong Kong, rather than Japan.

Produce: “Fresh bean curd [tofu]—Sold as produce in plastic containers in a chunk covered with water. Keeps a week in the refrigerator with two or three water changes. (Don’t buy dried bean curd, unless your recipe specifies it).”

A photo shows a man walking down South Wentworth Avenue with many Chinese signs and shops in the background.

1842. Knoblauch, Mary. 1976. Shopper in a strange land. *Chicago Tribune*. Sept. 16. p. D1.

• **Summary:** The biggest culinary rage in Chicago, next to eating Mandarin food out, is cooking it in. To start, you need a good cookbook, such as *The Chinese Cookbook*, by Craig Claiborne and Virginia Lee (1975, Lippincott). “You choose a recipe (or several) and make a shopping list—fresh ginger root, hot bean paste,... Szechwan pepper, fresh bean curd [tofu], fermented black beans, scallions...”

A large photo shows the inside of a Chinese grocery store and its grocer, Man Sun Wing Co., 2229 S. Wentworth Ave., Chicago

1843. Erewhon, Inc. 1976. Erewhon. Autumn 1976. Boston, Massachusetts. 17 p. Catalog and price list.

• **Summary:** On the front cover is a photo of six adults and three children standing atop the Erewhon warehouse building at 33 Farnsworth Street in Boston. In the background are skyscrapers and the Boston skyline. The people are: Front row (left to right): Maureen Young, Richard Young, Holly Young (youngest child), Tansy Young, Lori Young. Back row (left to right): David Simon, Jeanne Bleiweiss, Tom Herzig.

On the first page, Tyler Smith, writes about this catalog and upcoming events. “To help stimulate our customers, in the late Fall, Erewhon will present a lecture and

demonstration day in both the New York and Boston areas which will feature as the main teacher, Mr. Bill Shurtleff, author of *The Book of Tofu* and *The Book of Miso*. He will be coming to this area on a lecture tour from Japan.”

Contents: Grains. Cereals. Flour. Pasta. Juices. Beverages. Spring water. Natural sodas. Nik’s snaks. Barbara’s bakery. Bliss pastries (whole-grain, sweetened with unfiltered honey, made at Cable Springs Bakery). Donna’s butter cookies, Butterchews, Lind’s candy bars. Chico-San candies (Yinnies, Yinnies San-Wich). Crackers & Chips (incl. tamari corn chips or corn tortilla chips). Rice cakes & bread. Cheese. Butter. Yogurt. Kefir. Produce. Dried fruit. Seeds & nuts (incl. alfalfa seeds unsprayed, almonds, Brazils, cashews, peanuts, pecan halves, pistachios, pumpkin seeds, sesame–brown, sunflower seeds, walnuts). Granola. Beans (incl. aduki [azuki], organic black soybeans or yellow soybeans from New York, and black soybeans from Japan). Seed & nut butter (almond butter, cashew butter, peanut butter {Erewhon or Deaf Smith–crunchy, or unsalted}, sesame butter, sesame-peanut butter, sesame tahini, sunflower butter). Fruit butters. Oils: Erewhon oils, Arrowhead oils (incl. Soy oil). Condiments–sauces: Erewhon sauces (incl. 4 sizes of tamari soy sauce), Erewhon miso (kome {rice & soy}, Hacho {soy only}, or mugi {barley & soy}–each in 3 sizes), Erewhon Japanese imports (incl. shiitake mushrooms, barley kogi [sic, koji] to make mugi [miso], kuzu arrowroot powder, tekka seasoning, nigari (to make tofu), umeboshi), salt (incl. Herbamare salt, unrefined sea salt from France), olives, pickles, sauerkraut, brown rice vinegar (from Japan), Pure and Simple vinegar (Honey, red wine, apple cider natural), mulled cider spices. Baking (incl. barley malt syrup). Niblack’s. Fearn’s [sic, Fearn’s] (incl. Rich Earth wholewheat & soy pancake mix, Soya powder natural). Honey-syrup. Erewhon packages: Beans, grains & seeds (incl. soybeans yellow organic), hot cereals, flours (incl. soybean full-fat organic), baking. Arrowhead packages. Sea vegetables (agar-agar, hiziki [hijiki], kombu, nori, flavored nori with tamari, wakame, dulce). Fmali ginseng. Teas: Erewhon, Celestial Seasonings. Body care: Cattier clay, Dr. Bronner’s, Natural Living, Nature’s Gate, Orjene, Tom’s, luffas. Cookware (incl. soy dispenser glass). Readables: Magazines, books, posters, flyers-recipes. Apparel. Discontinued–sale. New products (Bob Swanson was the former owner and creator of Llama, Toucan and Crow, a New England distributor; Chico-San’s organic rice cakes).

Erewhon’s New York / New Jersey office is located at 303 Howe Ave., Passaic, NJ 07055. Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: 617-542-1358.

1844. Kozaki, Michio. 1976. Tōnan Ajia no miso to shōyu [Southeast Asia’s miso and shoyu]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 271. p. 1-7. Sept. [Jap]

1845. Miyako Oriental Foods, Inc. 1976. Price list, Sept. 1, 1976: Miso. 404 Towne Ave., Los Angeles, CA 90013. 1 p. • **Summary:** Gives package size, wholesale and suggested retail prices for Yamaizumi Miso and Yamajirushi (Shinshu Type) Miso. The latter is divided into shiro miso, aka miso, and koji miso. For example, the suggested retail price of a 2-pound bag of aka miso is \$2.19. In the upper left corner is *Yama-chan*, the company logo, showing a cute child eating miso soup with chopsticks. Address: Los Angeles, California. Phone: (213) 488-1678 Factory.

1846. Order forms containing names and addresses of people who purchased publications or materials from New-Age Foods Study Center in Sept. 1976 (Archival collection). 1976. Lafayette, California. Order forms filled out by the person who placed the order.

• **Summary:** BOT2 = The Book of Tofu, Vol. 2–later titled Tofu & Soymilk Production. BOM = The Book of Miso. BOM2 = The Book of Miso, Vol. 2–later titled Miso Production. TB = Tofu box. TK = Tofu Kit. NN = Natural nigari. CTE = Catalog of commercial tofu-making equipment. CKS = Catalog of koji starter for miso or shoyu.

September: The Nova Scotia Farm, RR#2, Hampton, NS B0S 1L0 Canada (BOM). Colorado Farm, Rt. 2, Box 188, Hotchkiss, Colorado 81419 (BOM). Ira Leviton, Corncreek whole grain bakery, 60 Elm St., S. Deerfield, Massachusetts 01378 (BOM, BOT2, BOM2). Empty Cloud [Arnold Karmody], RD 3, Canandaigua, New York 14424 (BOM, TK). Joseph G. Moser, RD1 (Corner Ketch), Downingtown, Pennsylvania 19335 (BOT2). Sylvia Nogaki, Island Spring, Rt. 1, Box 624, Vashon, Washington 98070 (2 x BOT2). Ceres Farms Inc. RD2, Hannibal, New York 13074 (BOM2, CTE). David Hinckle, c/o Earthbeam, 1399 Broadway, Burlingame, California 94010 (BOM2, CTE). Jimmy Udesky, [Rising Sun], 440 Judah St., San Francisco, California 94122 (BOM2, TB). Susan Gershuny, Box 207, Tivoli, New York 12583 (CTE). Ron McDowell, 466 Carl St., San Francisco, CA 94117 (TB). Alida Nijhof and Willem van Gudenaarde, Amsterdam, Netherlands (BOM, paid by Robby de Nies). Diane Murphy [Genjoji Zendo], 6283 Sonoma Mountain Road, Santa Rosa, CA 95404 (TK). Harlan D. Lundberg, P.O. Box 337, Richvale, CA 95974 (BOM, BOM2, Tapes, TK). Address: New-Age Foods Study Center, 790 Los Palos Dr., Lafayette, California 94549. Phone: (415) 283-3161.

1847. Revelle, Roger. 1976. The resources available for agriculture: The physical resources of earth, air, fire (energy) and water are large but essentially fixed. The biological and social resources, however, are far from being pressed to the limit. *Scientific American* 235(3):164-68, 170, 172-74, 177-78. Sept.

• **Summary:** Pages 170 and 172 discuss the importance of microorganisms and fermentation. “The fermentation process not only adds distinctive flavors, which are prized in their own right, but also often augments the content of riboflavin and other vitamins. Sauerkraut and yogurt are familiar fermentation products in American diets; tempeh, ragi, sufu, shoyu, ang-kak, tea fungus and mizo [sic, miso] are among those eaten in Asian countries.” Address: Director, Center for Population Studies, Harvard Univ., Massachusetts.

1848. Shurtleff, William; Aoyagi, Akiko. 1976. Getting the most from soybeans: Excerpt from *The Book of Miso*. *East West Journal*. Sept. p. 18-23.

• **Summary:** Excerpts mostly from the Preface and chapter 2, “Miso as a Food.” Includes recipes. Address: 790 Los Palos Dr., Lafayette, California 94549.

1849. Shurtleff, William; Aoyagi, Akiko. 1976. *The book of miso*. Hayama-shi, Kanagawa-ken, Japan, Soquel, California, and Brookline, Massachusetts: Autumn Press. 256 p. Sept. Illust. by Akiko Aoyagi. Index. 28 cm. Revised ed. 1981. New York, NY: Ballantine Books, 620 p. [60 ref]

• **Summary:** Contents: What is miso? Preface. Acknowledgments. Part I. Miso: Savory, High Protein Seasoning. 1. Soybeans, protein and the world food crisis. 2. Miso as a food. 3. The miracle of fermentation. 4. The varieties of miso: Regular Miso: Rice miso (red / aka, light-yellow / shinshu, mellow red / amakuchi akamiso, mellow beige / amakuchi tanshoku, mellow white / shiro koji, sweet red / edo or edo ama-miso, sweet white / Kyoto shiro miso), barley miso (karakuchi mugi, mellow barley / amakuchi mugi), soybean miso / mamé miso (miso-dama, Hatcho miso, soybean miso / mame miso, tamari miso). Special Miso: Finger lickin’ miso / Namemiso (Kinzanji miso, moromi miso, hishio, namémiso, natto miso, goto miso), sweet simmered miso / nerimiso. Modern Miso: Akadashi miso, dehydrated or freeze-dried miso, low-salt / high-protein miso.

Part II. Cooking with Miso (400 recipes). 5. Getting started. 6. Recipes from East and West: Miso toppings, miso in dips & hors d’oeuvres, miso in spreads & sandwiches, miso dressings with salads, miso in soups & stews, miso in sauces, miso with grains, beans & tofu, miso in baked dishes, miso sautéed & simmered with vegetables, miso in grilled dishes, miso in deep-fried dishes, miso & eggs, miso in desserts, miso pickles, koji cookery.

Part III. The Preparation of Miso. 7. Making miso at home and in communities. 8. Japanese farmhouse miso (incl. miso-dama). 9. The traditional miso shop. 10. The modern miso factory. Appendixes: A. A brief history of chiang, miso, and shoyu: Introduction, Chinese chiang, early Japan, the Nara Period (710 A.D. to 784 A.D.), the Heian Period (794 A.D. to 1160 A.D.), the Kamakura Period

(1185 A.D. to 1333 A.D.), the Muromachi Period (1336 A.D. to 1568 A.D.), tamari—the forerunner of shoyu (Priest Kakushin returns to Japan from China, where he learned how to make Kinzanji miso, settles at Kokoku-ji temple near town of Yuasa, discovers tamari), miso during the Edo Period (1603 A.D. to 1867 A.D.), the development of shoyu the Meiji and Pre-war Periods (1867 A.D. to 1941 A.D.), modern times, transmission to the West.

B. The varieties of Chinese chiang, Korean jang and Indonesian Tao-tjo. C. The chemistry and microbiology of miso fermentation: Introduction, koji starter molds, making koji starter, making koji—the first fermentation, cooking the soybeans, preparing the miso—the second fermentation, the finished miso. D. People and institutions connected with miso: In Japan—Miso research scholars and institutes, exporters of natural miso and koji to the West, traditional or semi-traditional shops making natural miso, Japan’s ten largest miso factories (gives the production in tons/year for several companies), other well-known miso makers. Makers of koji starter and koji, Japanese restaurants specializing in miso cuisine. North America—Miso research scholars and institutes, commercial miso makers, companies importing Japanese miso, koji, or koji starter, individuals interested in miso. Europe—Latin America. E. Miso additives. F. Miso with seafoods, chicken, and meat. G. Table of equivalents. H. So you want to study miso in Japan? Bibliography. Glossary. About the authors (autobiographical).

Note 1. This is the earliest English-language book seen (July 2000) that has the word “miso” in the title. It is also the first book in the Western world written entirely on the subject of miso.

Note 2. This is the earliest document seen (July 2000) that mentions “Hatcho miso” (spelled that way—which is now the correct romanization). Hatcho is a Japanese place name meaning (approximately) “Eighth Street.”

Note 3. This is the earliest document seen (Sept. 2002) that contains industry and market statistics on individual miso companies.

Note 4. This is the earliest document seen (March 2009) that gives illustrated details about commercial miso production.

Note 5. An advertisement on the inside rear cover of the paperback edition of this book announced that the authors were preparing *The Book of Sea Vegetables*. That book was half researched and written but never published because of concern with pollutants in sea vegetables, and increased interest in soyfoods. Address: 790 Los Palos Dr., Lafayette, California 94549.

1850. Shurtleff, William; Aoyagi, Akiko. 1976. *Tofu & Miso America Tour: 29 Sept. 1976 to 3 Feb. 1977* [Itinerary with two maps]. Lafayette, California: New-Age Foods Study Center. Unpublished manuscript.

• **Summary:** On 13 Sept. 1976 the authors bought a large, white 1975 Dodge Tradesman 300 van (used, with 40,000 miles on it). On one side Akiko painted in large, bold letters “Tofu and Miso America Tour 1976-77.” Their *Book of Tofu* had been published in December 1975 and *Book of Miso* on 23 Sept. 1976. On Sept. 29 they packed the van full to the ceiling with their books on tofu and miso, plus Larry Needleman’s tofu kits—and departed.

This trip had four main purposes: (1) To introduce tofu and miso to America; (2) To introduce people to the many benefits of a meatless/vegetarian diet; (3) To encourage people to start soyfoods companies, especially tofu shops; and (4) To promote the authors’ newly-published *Book of Tofu* and *Book of Miso*.

This itinerary includes the name and address of 64 people and organizations visited. Many of these were pioneers in the soyfoods and natural foods movements: Sept. 29—David and Kathleen Sandler, Robert Dolgin, Don Wilson, Farm Food Co. (San Rafael, California). Oct. 1—Petaluma, California. Oct. 2—Josephine County Food Center, Grants Pass, Oregon. Oct. 3. Heliotrope Natural Foods (Salem, OR). Oct. 4—West Bank Cafe (Corvallis, OR). Oct. 5. Visit Linda Shurtleff (McMinville, OR). Visit *Rain Magazine* (Portland, Oregon). They do an interview which is published in their Nov. 1976 issue. Oct. 6. Blake Rankin and Janus Natural Foods (Seattle, Washington). Oct. 7. Janus. Oct. 8—Luke Lukoskie and Sylvia Nogaki of Island Spring (Vashon, Washington). Oct. 10—Jack Grady, a macrobiotic (Spokane, WA). Oct. 13—Univ. of Minnesota. Oct. 14—Georgie Yiannias of Wedge Food Co-op and Ananda Marga (Minneapolis, Minnesota). Our largest class with 300 people. Oct. 15—Barbara (“Bobbie”) Reinhardt Shurtleff dies of colon cancer at Alta Bates Hospital, Berkeley, CA. Oct. 15. Famine Food Co-op (Winona, Minnesota). Oct. 16—Bonnie Maroney of The Wisconsin Farm (Ettrick, WI). Oct. 19—Visit George Strayer and Larry Kruger of the American Soybean Assoc. (Hudson, Iowa). Visit David and Ann Tucker (Iowa City, Iowa). Oct. 20. Outpost Natural Foods (Milwaukee, WI). Visit Bountiful Bean Co-op. Oct. 21. Visit Dr. Danji Fukushima and Kikkoman Foods (Walworth, Wisconsin). Oct. 22—Visit Drs. Hesseltine, Wang, Wolf, Mustakas, Cowan at Northern Regional Research Center (Peoria, Illinois). Oct. 23—Morning class on commercial production for Les Karplus and 5 people at Vegetarian Incorporated (Urbana, Illinois). Oct. 23-24. Side trip to visit ADM and Staley (Decatur, IL). Oct. 24—Les and Debbie Karplus of Vegetarian Inc. (Urbana, IL). Oct. 25—Visit Dr. L.S. Wei of the Univ. of Illinois Dept. of Food Science (Urbana, Illinois). Evening program for Karplus in Urbana. Oct. 26. Purdue University (Indiana). Oct. 27—Chris Steele (Lansing, Michigan). Oct. 28—Mike Potter and Louis Howie of Eden Foods (4601 Platt Rd., Ann Arbor, Michigan). Oct. 29—Calico Market (Erie, Pennsylvania). Oct. 30—Visit Greg Weaver and Jay

Thompson of Rochester Zen Center (Rochester, New York; Later Northern Soy). Visit Genesee Co-op. Oct. 31—Alternative Health Education Center (Rochester).

Nov. 1—Visit Arnold Karmody at Empty Cloud (Canandaigua, New York). Meet Dr. Keith Steinkraus (Geneva, New York). Nov. 2—Visit with Dr. Steinkraus at New York Agric. Exp. Station (Geneva, NY). Lunch together with his wife, Maxine. Nov. 3—Tom MacDonald at Hannibal, New York. Nov. 4—Ira and Kathy Leviton of Corncreek Bakery (South Deerfield, Massachusetts). Visit Laughing Grasshopper tofu shop just before it begins operation. Nov. 5—Fritz Hewitt of Common Ground Restaurant (Brattleboro, Vermont). Visit Tom Timmins of Llama, Toucan & Crow (Brattleboro). Nov. 6. Shep Erhard (Franklin, Maine). Nov. 7—Ann S. Johnson at Univ. of Maine (Orono, ME). Nov. 8—Visit Marine Colloids (Rockland, Maine). Nov. 10—Drive to Boston, stay with Nahum & Beverly Stiskin (Brookline). Nov. 13—Tofu & Miso program in Boston. Visit Erewhon Natural Foods (33 Farnsworth St., Boston, Massachusetts), Martha Trundy, Jeffrey & Gretchen Broadbent. Nov. 14—Visit to shops in Boston’s Chinatown. Michio and Aveline Kushi give a big party in our honor at their home at 62 Buckminster Rd., Brookline, then take us out to dinner at the Seventh Inn. Nov. 15—Tofu-making class at a home in Boston. Nov. 17—Visit offices of *East West Journal*. Sherman Goldman conducts long interview, later published in Jan. 1977 issue. Misomaking class at home of Ken Burns. Nov. 18—Visit Joel Wollner in Cape Cod. Nov. 19—Radio show then program for Joel. Nov. 20—Peter Smith at Quaker group in Pennsylvania. Nov. 22—Visit Woods Hole, Massachusetts to study sea vegetables. Evening program at New Bedford, MA. Nov. 23—Stay with Seung Sahn, Sa Nim at Providence, Rhode Island Zen Center. Meditate and show students how to make tofu. Evening at Insight Meditation Center, Barre, MA, a Vipassana center in a former Catholic seminary, co-founded in 1976 by Jack Kornfield, Joseph Goldstein and 3 others. We have dinner, meditate with the sangha, and hear Jack talk about Vipassana. Nov. 24 Sit morning zazen with master and students at Providence zendo. Nov. 25—Thanksgiving. Akiko and I stay alone in a house near Hartford, Connecticut and taste a good tofu pumpkin pie. I read about seaweeds. We take a long walk in the countryside. Nov. 26—Program for Erewhon Natural Foods in Hartford (stay with Maria Orefice, owner of Garden of Eating restaurant in Hartford). Article in *The Hartford Courant* (Dec. 1). Nov. 27—Long River Food Coop in Connecticut. Nov. 28—Stay with Susan and Kirk Gershuny of Snowflower (Tivoli, New York). They plan to make soy ice cream soon. Nov. 29—Drive in Deep snow to the New York Farm in Franklin, New York. Stay in a big house they built. Nov. 30—Carl Bethage of the East West Center in Gardiner, New York. Also did a radio program.

1976 Dec. 1—Visit Frances Moore Lappé at her upstairs office in Hudson-on-Hastings, New York. Then visit her large home on the hillside. Dec. 1-5—We missed a program for Annemarie Colbin in New York City (partly because we feared our van would be burglarized on the street) so we stayed Dec. 1-5 at the luxurious home of Leo S. Nikora (Niki; Bobbie's friend). I work on writing *The Book of Kudzu*. Dec. 6-7. Program for 40 people (Hosts: Nancy N. Bailey and Robert Rodale) at Rodale Press (Emmaus, Pennsylvania); I am surprised they serve white sugar on their dining tables. Dec. 8—Tim Snyder of Ecology Co-op in Philadelphia. Dec. 9—Stay at home of Sylvia Anderson in Pleasantville, New Jersey and do a program upstairs in a modern university. Study magnificent photos of Edward S. Curtis. Dec. 10—Visit Jay and Freya Dinshah of the North American Vegetarian Society (Malaga, New Jersey); their poor vegan child has bowed legs. Dec. 12—Cindy Blouse in Dallastown, Pennsylvania. Dec. 13—Visit Laurelbrook Foods, a natural foods distributor in Forest Hill, Maryland. We meet Rod and Margie Coates. Dec. 14—Big program hosted by Ella May Stoneburner and Seventh-day Adventists near Washington, DC. Dec. 15—Michael Rosoff (who ran the East West Center in Washington, DC) planned to host a class in a DC church. After we witness a robbery, we are afraid to leave our van on the street. So we do a scaled-down program in the home of Murray and Pam Snyder, which was the East West Center in Baltimore, Maryland. Visit Laurelbrook Foods Warehouse #2 in Durham / Chapel Hill. Dec. 16—Roanoke Food Co-op in Copper Hill, Virginia. Dec. 17-18—John Shuttleworth and Jim Morgans of *Mother Earth News* (Hendersonville, North Carolina). They do a long interview and take photos. Program at night. Note: An audio tape of Bill's talk at this program is filed with Soyfoods Center documents for 1976. Dec. 19—Chandler Barrett in Atlanta, Georgia.

Note 1. This is the earliest document seen (April 2001) concerning the work of Ira Leviton or Tom Timmins with soy. One evening, before Shuttleworth was scheduled to speak at Leviton's Corncreek Bakery, Leviton drove Shuttleworth to see the Laughing Grasshopper Tofu Shop which was under construction on the second story of an old wooden building in the nearby town of Millers Falls, Massachusetts. Much of the equipment was made out of wood—including wooden curdling vats and a wooden cider press. The company opened in Jan. 1977.

Note 2. This is the earliest document seen (April 2006) concerning Llama, Toucan & Crow in Brattleboro, Vermont.

Note 3. This is the earliest document seen (May 2006) concerning the forerunners of United Natural Foods, Inc. (INFI)—in the form of Llama, Toucan & Crow. Address: 790 Los Palos Manor, Lafayette, California 94549. Phone: 283-3161.

1851. Shuttleworth, William. 1976. New-Age Foods Study Center: Basic purposes and activities (Leaflet). Lafayette, California. 1 p. Single sided. Sept. 28 cm.

• **Summary:** "1. To work toward creative, low-cost solutions to the present world food/protein crisis by doing basic research and writing books... Our special interests include soybean products (tofu, miso, tempeh, shoyu, etc.), sea vegetables, whole-grain bread, and kuzu.

"2. To aid in the spread of the ideas found in our writings by regularly responding to invitations from any part of the world to do lecture/demonstrations and cooking classes."

3. To encourage the adoption of meatless and vegetarian diets which help make the best use of the planet's precious food resources, are low in cost, conducive to the development of a healthy body and clear mind, kind to animals, and ecologically sound.

"4. To encourage people in the West to begin commercial or community production of tofu, miso, and tempeh..."

"5. To provide centers where people can come to learn more about our work and to begin their own study of basic important foods. In Japan, we assist people in studying with tofu- and miso masters..."

"6. To work actively to promote the key concept of food self-sufficiency and simpler, low-cost lifestyles that are harmonious with the needs of the planetary ecosystem. Likewise to encourage deeper understanding of selfless service, and of daily life and work as a spiritual practice.

"7. To provide a catalog of publications and materials related to our work. We invite you to contact us and we hope we may be of service to you." Address: New-Age Foods Study Center, 790 Los Palos Dr., Lafayette, California 94549. Phone: (415) 283-3161.

1852. Shuttleworth, William; Aoyagi, Akiko. 1976. Tofu & Miso America Tour: 29 Sept. 1976 to 3 Feb. 1977. Continued from Jan. 1977. [Itinerary with two maps]. Lafayette, California: New-Age Foods Study Center. Unpublished manuscript.

• **Summary:** Continued: 1976 Dec. 21. Arrive at The Farm in Summertown, Tennessee. Meet Margaret Nofziger and Stephen Gaskin. Stay until 2 Jan. 1977. We stayed most of the time at "Hoot Owl Hollow," a large community owner-built home with many families; our host was Edward Sierra. During the next few weeks we stayed in a parked mobile home (owned by the Sandlers) in a lovely valley about 1 hour drive away. I worked on *The Book of Kudzu* final draft. Heavy confrontation with Farm folks—as I am about to start a program—about how they didn't like my way. Write a 4-page pamphlet titled "What is Tempeh?" jointly with Cynthia Bates. 1976 Dec. 31—This is our first year with significant income (\$27,390, mostly from Autumn Press royalties) but no profit. During 1976 thirty articles and book

reviews about our work with tofu and miso were published in magazines and newspapers in the USA and Japan.

1977 Jan. 2—Our Tofu & Miso America Tour continues. Jan. 3—Stay in a suburban home with Lynn Delacruz in Meridan, Mississippi. Jan. 4—Program for Atlantis Distributors in New Orleans. That night we stay in a trailer home with John Gabriel and his wife in Houma, Louisiana. They are from The Farm and make commercial tempeh in their trailer. Jan. 6—Jim Baker (Dallas, Texas). After the program I meet Dr. Ralph Sand who is studying tofu and soy cheeses at Anderson Clayton. We also visit with my cousin, Bob Shurtleff, near Dallas. Jan. 7—Jane Binante in Denton, Texas. Jan. 9—Jim Hemminger of Gregg St. Tofu Co. (started by Thom Leonard) in Fayetteville, Arkansas. His partner is Mary Weingartner. We sleep on the floor of a small house in Fayetteville and the next morning see Jim make tofu in a bathtub. Jan. 10—East Wind in Tecumseh, Missouri. Jan. 12—Stay with Robert Nissenbaum (a fine, humble fellow) in St. Louis, Missouri. I finish typewritten manuscript of “What is Tempeh?” Jan. 13—Program at a restaurant, The Sunshine Inn (St. Louis). Sponsored by The Ethical Society. Stephen Uprichard, Dale Deraps, and Robert Nissenbaum are there.

Jan. 15—Meet David and Danette Briscoe (Kansas City, Missouri; they soon start publishing *Soycraft*, a small periodical on soyfoods), dinner with Thom Leonard at his home in Lawrence, Kansas (we have miso soup with miso that Thom made, then do a big program sponsored by the Mercantile Community Co-op in downtown Lawrence at either the Lawrence Library or Community Center—in a big downstairs room. I tape the lecture. Unbeknownst to me, Ken Bader, CEO-to-be of the American Soybean Assoc., is in attendance). Jan. 16—Visit Bob Amelay of the Omaha Food Co-ops in Omaha, Nebraska. Jan. 17—Drive across Nebraska to Denver. Jan. 18-19—Dave Bolduc and Christie Shurtleff in Boulder, Colorado. The first night we do a big tofu program in the historic Boulder Theater. That afternoon we have an audience with the Karmapa—a high Tibetan spiritual leader, who has diabetes; we give him an inscribed hardcover copy of *The Book of Tofu*. Akiko recalls cooking tofu burgers for him. That evening in a large, packed hall, we witness his Holiness conduct the Black Crown Ceremony. Jan. 20. Jimmy Carter is inaugurated as president. Jan. 24—Program for The Colorado Farm in Hotchkiss, Colorado—way out in the boondocks. Jan. 25—Stay with Andrea Chin in Taos, New Mexico. Visit Lama Foundation high above Taos in the snow (Steve Durkee, teacher). They have many small meditation cubicles around the hillside and have just finished a nice adobe meditation hall. Near Durango, Colorado, we visit Ed Tripp, who looks lonely, sad and desolate, farming a little patch of organically grown wheat and living alone in a bare shack on coffee and cigarettes. Jan. 26. We stay somewhere in New Mexico. Jan. 27—Program at the First Unitarian Church in Albuquerque

(79 p.m.) hosted by Michele E. Martin of Jemez Bodhi Mandala Zen Center, Jemez Springs, New Mexico. Sit meditation in their cold Rinzai zendo then soak in the hot springs outside in the snow. Their teacher, Sasaki roshi, is not there. Jan. 28—Susan Berry in Silver City is supposed to host a program. We cannot find her house. At one point along in here we do a program in or near Utah in a remote church up on a little bluff. Dinner before at Frosty Hot Dog place. Jan. 29—Long drive across Arizona to San Diego. Jan. 30—Big program in San Diego for 350 people at the Ocean Beach Community School hosted by David and Barbara Salat, publishers of *Well Being* magazine. Afterwards we stayed overnight on their houseboat in San Diego Bay. Magical. Akiko had a bad cough and was very tired.

In Los Angeles we spend a day (in late January or early February 1977) with Lewis Headrick and Jimmy Silver visiting three small tempeh shops: Bali Foods (in Baldwin Park, run by Mr. Henoeh Khoe), Country Store Health Foods (in Sun Valley; Joan Harriman), and Toko Baru (in West Covina; Randy Kohler). One evening we had dinner with Mr. Yamauchi and perhaps Al Jacobson. I gave a presentation on tofu. Afterwards, in the parking lot, Mr. Yamauchi gave me an envelope containing several hundred dollars in bills—his way of saying thank you for the work we were doing on behalf of tofu. Feb. 1. Drive to northern California, then have dinner at the home of Herman and Cornelia Aihara (Oroville, CA). Feb. 2. Last program of the tour for Harold Lockhard of the Sacramento Natural Foods Co-op (Sacramento, California; Program is in a modern college building).

On 3 Feb. 1977 arrive home in Lafayette, California.

On this 4-month tour the Shurtleffs, trying to do for soyfoods what Johnny Appleseed did for apples, presented 70 public programs attended by about 3,646 people, did many media interviews and appearances, and travelled 15,000 miles. They had a gross income of \$18,020 from honoraria and sales of their books (*Book of Tofu*, *Book of Miso*), tofu kits, pamphlets, and nigari. Total trip expenses were about \$5,361 plus about \$7,200 for books from the publisher, leaving a net income of about \$5,459. It was a huge, challenging, and exhausting Odyssey that bore abundant fruit in the founding of a new tofu shop almost everywhere they spoke.

1977 Feb. 9—Meeting in Lafayette (790 Los Palos Dr.) with Robert Dolgin and David Sandler (from the Farm and Farm Foods in San Rafael) and Larry Needleman leads to the establishment of Bean Machines, Inc. (BMI). The Farm places a firm order for a Japan tofu system.

1977 Feb. 12—Bill and Akiko leave America and fly to Japan. Air fare paid by Hydrometals. Address: 790 Los Palos Manor, Lafayette, California 94549. Phone: 283-3161.

1853. Shurtleff, William; Aoyagi, Akiko. 1976. Tamari (Document part). In: William Shurtleff and Akiko Aoyagi. 1976. *The Book of Miso*. Hayama-shi, Kanagawa-ken, Japan, Soquel, California, and Brookline, Massachusetts: Autumn Press. 256 p. See p. 50, 219-21. Sept. Illust. by Akiko Aoyagi. Revised ed. 1981. New York, NY: Ballantine Books, 620 p. [60 ref]

• **Summary:** In Chapter 5, “Getting started,” in the section on “Basic ingredients,” is a subsection titled “Tamari” which states (p. 50): “A close relative of shoyu, tamari is prepared from a koji which contains only soybeans and no wheat; it has a distinctive, slightly strong flavor and aroma, a dark brown color, and a fairly thick consistency. Produced either as a byproduct of tamari miso (p. 44) or as a food in its own right, it is now rarely used in its natural form, being generally made into *sashimi-damari* by mixing it with miso-damari (see below), *mizuumé*, cane sugar, caramel, and often preservatives. Although not widely used in Japan, it remains fairly popular in Kyoto and central Japan, where it is used as a seasoning for *sashimi* (raw fish). In ancient times tamari was widely used in its natural form and highly prized as a fine seasoning, having much the same flavor as a best-grade Chinese soy sauce. Today, an increasing amount is made synthetically.

“*Miso-damari*—also called *uwahiki*—is the tamari-like liquid that accumulates in *any* variety of miso during fermentation. Thicker and richer than tamari, it is gathered only in very small quantities and is not sold commercially. A delicious by-product of most homemade miso (it rises to the surface in summer and settles in winter), it may be used like shoyu and is especially delicious with hors d’oeuvres.

In “Appendix A: A brief history of chiang, miso and shoyu,” is a section (p. 219-21) titled “Tamari: The forerunner of shoyu.” Address: 790 Los Palos Dr., Lafayette, California 94549.

1854. Shurtleff, William; Aoyagi, Akiko. 1976. Appendix B: Varieties of Chinese chiang, Korean Jang, and Indonesian Tao-tjo [Tauco] (Document part). In: William Shurtleff and Akiko Aoyagi. 1976. *The Book of Miso*. Hayama-shi, Kanagawa-ken, Japan, Soquel, California, and Brookline, Massachusetts: Autumn Press. 256 p. See p. 277-331. Sept. Illust. by Akiko Aoyagi. Revised ed. 1981. New York, NY: Ballantine Books, 620 p.

• **Summary:** Contents: Introduction. Note: Of the romanized Chinese names given in curly brackets below, the first is in the Wade-Giles transliteration; the second is in the more modern pinyin transliteration.

Chinese chiang: Introduction, Red or regular chiang (chunky chiang, hot chunky chiang, Szechwan red-pepper chiang, Hamanatto chiang, Cantonese red chiang, great chiang, yellow-red chiang), black chiang (sweet wheat-flour chiang, black chiang), assorted chiangs (introduction, red-pepper chiang, Canton sweet simmered chiang, dried

chiang, other varieties (none of which contain soybeans or grain koji; sesame chiang, peanut chiang, umeboshi chiang, shrimp chiang, corbicula chiang, tangy chiang, semi-fermented chiang)), chiang sauces (bean sauce, hoisin sauce [*hai-hsien chiang*, *haixiang jiang*], oyster sauce, barbecue sauce, other chiang sauces, none of which contain soybeans or grain koji; shrimp sauce, Chinese Worcestershire sauce, Chinese ketchup). Note 1. The Chinese (Wade-Giles) names and characters for each of these sauces are given on page 230.

Korean jang: Introduction, Korean soybean jang (*doen jang*), Korean red-pepper jang (*kochu jang*), Mild red-pepper jang (*mat jang*), Chinese sweet black jang (*cha jang* or *chungkuk jang*), Japanese red jang (*wei jang* or *ilbon jang*).

Note 2. This is the earliest English-language document seen (March 2009) that uses the word “kochu jang” (or “kochu-jang”) to refer to Korean-style red pepper and soybean paste (miso).

Indonesian tao-tjo: Summary.

Note 3. This is the earliest English-language document seen (March 2009) that uses the term “chungkuk jang” to refer to a fermented Korean soyfood or seasoning. Actually, the term refers to a type of Korean natto, and therefore does not belong in a book about miso. Address: 790 Los Palos Dr., Lafayette, California 94549.

1855. Shurtleff, William; Aoyagi, Akiko. 1976. The book of miso (Illustrations—line drawings). Hayama-shi, Kanagawa-ken, Japan, Soquel, California, and Brookline, Massachusetts: Autumn Press. 256 p. Sept. Illust. by Akiko Aoyagi. Index. 28 cm. Revised ed. 1981. New York, NY: Ballantine Books, 620 p. [60 ref]

• **Summary:** Continued: Illustrations (line drawings, both numbered and unnumbered) show: The two Japanese characters for miso. Three men “Putting Hatcho miso to bed” by piling nearly round river stones on top of a huge vat; the pyramid shape makes the pile earthquake proof. A child holding a sheaf of grain. A round *zaru* (woven split bamboo tray) with a circle of salt in the middle. A square wooden measure (*isshô-baku*) filled with soybeans. The top of rice and barley plants showing grains and leaves. A wooden vat or red miso tied with rice-straw ropes. A miso makers standing large wooden vats of two different sizes, with braided bamboo hoops. A well stocked miso shop in Japan (at Kichijoji train station, Tokyo). A woman standing behind two deep earthenware crocks filled with miso; ball so miso are in a basket. A sunken traditional Japanese farmhouse fireplace (*irori*) with a pot hanging over the coals on a hook (*jizai kagi*) and tofu dengaku being grilled around the coals, their skewers stuck into the ash. Nine wooden kegs of different kinds of miso piled up on 3 levels. A field of soybeans planted in rows. A hand holding soybeans pods still attached to the stem. A soybean pod split open to show

the beans. (1) Bar graph of protein from different sources vs. protein returned. (2) Diagram of energy flow through two different food chains, one with a steer in the middle, the other with direct consumption of soy and grains. (3) Development aid from affluent nations as a percentage of GNP (1960-1971). Stylized soybean plant growing out of a stylized Planet Earth. Miso gift pack, with poly bags of rice, barley, and Hatcho miso. A Japanese pipe *kiseru*. (6) Graph of intestinal cancer vs. meat consumption among females in selected countries; the more meat consumed, the more cancer. Miso aging (from *Miso Daigaku*). (7) The varieties of miso and their characteristics (full-page table). (8) The percentage of salt in different miso varieties. (9a) Map of Japan show where the different types of miso originate. (9b) Map of Japan showing geographical miso preferences. A head of rice. (10) Famous sub-varieties of salty rice miso. Two heads of barley. Table about two types of barley miso. Two sets of soybean leaves with pods. Table about three types of soybean miso. The Japanese characters for Hatcho Miso. (11) A wooden sign in a Hatcho miso office: "Supplier to the Imperial Household." (12) Two cross-section views of a tamari miso vat. A small pottery crock of sweet simmered miso (*Nerimiso*). Packages of different types of modern miso: Peanut miso, akadashi miso, low-salt, high protein miso, Instant miso soup with dried frozen tofu, leeks, wakame. (14) Different types of miso packaging, both traditional and modern. A sample miso label. (13) Varieties of miso available in the West, plus characteristics of each. Squeezing a bean of miso out of the cut corner of a plastic bag. Three different shoyu containers. Six different types of tofu on a cutting board. (15) Oriental kitchen tools (utensils; full page). A small crock of salt with a wooden spoon in it. Suribachi and modern sesame seed grinder. Tofu preparatory techniques. Broiling tofu with chopsticks on a broiling screen. Four forms of kombu. Two stylized crossed sheaves of rice. A traditional farmhouse kamado (raised earthenware cooking area). Pottery crock. Black and white sesame seeds and plant. Yuzu. Sprig of kinome. Head of garlic. Two burdock roots. Two leeks (*negi*). Making broiled miso. Hoba miso. Kaiyaki miso. Yubeshi miso. Wakame plant. A bowl of miso soup. A woman drinking hot miso soup next to a vending machine. Vegetables cut for miso soup (*mi* or *gu*). Table of the most popular ingredients in miso soup. How to make miso sup at home (4 views). Miso-koshi (woven bamboo strainer). Mad monks grinding miso. (19) Full-page table of miso soup throughout the four seasons. Shiso / beefsteak leaves. Kabocha. Daikon. Irori and jizai kagi (sunken farmhouse fireplace and overhead hanging hook). Woman serving miso by a sunken / open hearth fireplace. Woman kneeling, grinding miso with a pestle (*suri kogi*) in a *suribachi* (serrated earthenware mortar / mixing bowl). (20) Rice patties with nori (*o-musubi*, *o-nigiri*). Bamboo noodle tongs. Homemade noodles in a pot. (21) Broiled mochi wrapped

with nori. (22) Steamed tofu. A Chinese cleaver, with its tip stuck into a chopping block. Cultivated shiitake mushrooms growing on a log. Kabocha. Daikon. (23) Miso oden. Doténabé [Dotenabe]. Konnyaku twists. Dengaku Hoshi. Tofu dengaku (2 pieces, skewered; 3 pieces skewered in a box). Japanese eggplant (*nasu*) scored and Shigiyaki. Deep-frying with a wok. Lotus root stuffed with miso. (24) Deep-fried sandwiches. (25) Gashouse eggs. (26) Layered omelets. Japanese bamboo steamer. Kashiwa mochi. Selling miso pickles. Two pickling containers. (27) Salt-pressing. Air-drying daikon and turnips (*kabu*). Miso pickles with tea and chopsticks. Amazaké at the Nakamura-ro restaurant. How to make miso at home: Utensils, ingredients, and process (7 figures). (29) Miso fermentation crocks. Corona hand-mill. Soft mat koji. (30) Proportions by weight of basic ingredients for various homemade misos; full-page table. (32) Utensils for homemade koji and koji starter. (33) Miso flow chart. (34) Composition of nutrients in 100 gm of basic miso ingredients. (35) Process for homemade rice koji (9 figures). (36) Graph of changes in koji temperatures. Woman leaning over miso vat.

Japanese farmhouse miso: Traditional country farmhouses (2 views). Raised farmhouse kitchen hearth, caldrons and earthenware dais (*kamado*). (38) Farmhouse floor plan. A kura (family treasury and storehouse). Two bamboo colanders. Pounding miso at Suwanose. Making miso in a traditional farmhouse (9 figures). Farmhouse soybean miso made with *miso-dama* (miso balls) (5 figures).

The traditional miso shop: (39) A 17th century workplace (2 figures). (40) Tsujita shop floor plan. Koji trays. (41) Insulated fermentation box. (42) The small tools (full-page). (43) Shop with 2 cauldrons. (44) Steamer and cauldron. (45) A fermentation vat. (46) Shop floor at vat's rim. Preparing traditional rice miso (31 figures). Making koji using natural mold spores. Stacked koji trays. Making miso in a semi-traditional shop (5 figures). Hatcho miso; company and vats (2 views).

The modern factory (2 figures).

A brief history of chiang, miso, and shoyu (incl. evolution of Chinese characters). Hideyoshi Toyotomi and a robber on the bridge (Hatcho miso history). Making miso-damari. Inside a Kikkoman shoyu factory around 1900. Traditional shoyu seller.

Chinese chiang in earthenware jars in a courtyard. Korean jang; selling it and making at home. (48) The interaction of basic miso components during fermentation. (49) Temperature control curves for four quick misos. Edo period shoyu production. Cutting tofu for Dengaku and Busy making dengaku, both from the book *Tofu Hyaku Chin*. Cartoon of a man pouring himself sake, thinking of miso soup. Ebisu with fishing rod and big fish under left arm. Tamari shoyu pouring out of spigot at base of miso vat. Traditional Japanese kitchen utensils. Sunken fireplace

(*irori*) with huge carved wooden overhead hook hanging from braided rice straw rope. Photo (in Nerima-ku, Tokyo) and brief biography of William Shurtleff and Akiko Aoyagi. Address: 790 Los Palos Dr., Lafayette, California 94549.

1856. Inada, Lawson Fusao. 1976. Making miso. For Noboru Muramoto (A poem). *Bridge: An Asian American perspective*. Oct. p. 16.

1857. Liener, Irvin E. 1976. Nutritional aspects of soy protein products. In: Archer Daniels Midland Co., comp. 1976. *Edible Soy Protein Seminar*. Decatur, Illinois. 220 p. See p. 13-85. Held in 1976 at Moscow, USSR and Warsaw, Poland. [265 ref]

• **Summary:** Contents: Nutritional value of the protein of individual soy products: General considerations, soybeans as a vegetable, soyflour, soybean milk, soybean curd, protein concentrates, protein isolates, fermented products. Blended soy products: Blend with wheat protein, blend with corn protein, blend with rice, vegetable-protein formulations, soy protein as meat extender. Textured meat analogs. Nutritional value of non-protein constituents: Available energy, crude fiber, vitamins (fat-soluble vitamins, water-soluble vitamins), minerals (calcium, phosphorus, zinc, other metals). Antinutritional factors: Heat-labile factors (trypsin inhibitor, hemagglutinins, other heat-labile factors), heat-stable factors (saponins, estrogens, flatulence factors, lysinoalanine). References. Tables.

Concerning lysinoalanine (p. 58-59): "Sternberg et al. (1975) have recently shown lysinoalanine to be widely distributed in cooked foods, commercial food preparations, and food ingredients, many of which had never been subjected to alkaline treatment. Many of these foods had levels of lysinoalanine which were considerably higher than those found in commercial samples of soy protein isolate. The wide distribution of lysinoalanine among commonly cooked foods would tend to indicate that" this is neither a novel protein nor a serious problem, as some humans have long been exposed to proteins containing lysinoalanine with apparent impunity. "Its presence in soy protein can hardly be considered a serious problem for man." Address: Dep. of Biochemistry, Univ. of Minnesota, St. Paul, MN 55108.

1858. Order forms containing names and addresses of people who purchased publications or materials from New-Age Foods Study Center in Oct. 1976 (Archival collection). 1976. Lafayette, California. Order forms filled out by the person who placed the order.

• **Summary:** BOT2 = The Book of Tofu, Vol. 2—later titled Tofu & Soy milk Production. BOM = The Book of Miso. BOM2 = The Book of Miso, Vol. 2—later titled Miso Production. TB = Tofu box. TK = Tofu Kit. NN = Natural

nigari. CTE = Catalog of commercial tofu-making equipment. CKS = Catalog of koji starter for miso or shoyu.

October: Hugh J. Hanlon, 323 E. 24th St., North Vancouver, BC V7L 3E9 Canada (or 219 A Lonsdale, North Vancouver, BC V7W 2E9; BOT2, BOM2, CTE). Marvel and Jean Huffman, P.O. Box 444, Lecanto, Florida 32661 (BOT2, CTE). R. Yepson, Rodale Press, 33 E. Minor St., Emmaus, Pennsylvania 18049 (BOT2). Doug Wasyliw, 295 Wallasey St., Winnipeg, MAN R3J 3C2 Canada (BOT2). Greg Weaver, 21 Girton Place, Rochester, New York 14607 (BOT2). Jay Thompson, The Zen Center, 7 Arnold Park, Rochester, New York 14607 (BOT2). David and Ann Tucker, 1022 Hudson Ave., Iowa City, Iowa 52240 (BOT2, CTE). Lionel Shapiro, 3904 16th Ave. West, Vancouver, BC V6R 3C8, Canada (BOT2). Helen Sandler, 139 Beaconsfield Rd., Brookline, Massachusetts 02146 (BOT2). Luke W.M. Lukoskie, Island Spring, Rt. 1 Box 625A, Vashon, Washington 98070 (BOT2). Thom Leonard, c/o Hemminger, 216 E. Ella, Fayetteville, Arkansas 72701 (BOT2). Earl Lepper, 30 Upton Park, Rochester, NY 14607 (BOT2). Patricia Krug, 2765 Julliard, Boulder, Colorado 80303 (BOT2). Bernard Guay, St. Theophile, rang 6, cante de Beaute, QUE, G0M 2A0 Canada (BOT2). David Briscoe, 6900 Cleveland, Kansas City, Kansas 66109 (BOT2). Timothy Cleary, 80 Riverside Dr. #136, New York, NY 10024 (BOT2). Steven Berg, c/o Hyman Berg, 2830 Ocean Parkway, Brooklyn, New York (BOT2). Cathy Bauer, P.O. Box 164, Hathaway Pines, California 95233 (BOT2). Chandler Barrett, 97 A Druid Circle N.E., Atlanta, Georgia 30307 (BOT2). Toni Heartsong, 6051 SW 46th Terr. [Terrace], Miami, Florida 33155 (BOT2). Max Sprenger, Head, Dairy R&D Section, CPC Europe, Zurich Switzerland (BOT2, BOM). Rev. M.D. Strathern, Shasta Abbey, Box 478, Mt. Shasta, California 96067 (BOM, NN, CTE). Alec Evans, c/o Welcome Home Bakery & Tofu Shop, 231 S.W. 2nd St., Corvallis, Oregon 97330 (BOM, CTE). R. Mulliner, Southeast Asia Studies, Ohio University, Athens, Ohio (Audio cassettes on tofu and miso). Charles Roberge, St.-Aime-Des-Lacs, Co. Charlevoix, QUE, Canada (BOM). Gale Randall, Indonesian Tempeh Company, RR#1, Unadilla, Nebraska 68454 (BOT2, CTE). Leslie R. Berger PhD, Prof. of Microbiology, University of Hawaii at Manoa, Honolulu, Hawaii 96822 (BOM2). Greg Mello, c/o The Zen Center, 7 Arnold Park, Rochester, New York, 14607 (BOT2). Lisbeth Christiansen, Associated Expert, NIC 74/006 Naciones Unidas, A.P. 3260, Managua, Nicaragua (BOT, BOM—introduced by Ing. Luis Raul Tovar). John Hunter, Manna Foods Inc. 112 Crockford Blvd., Scarborough, ONT, Canada M1R 3C3 (5 BOT2, 5 BOM2, 25 CTE, 25 CKS). Address: New-Age Foods Study Center, 790 Los Palos Dr., Lafayette, California 94549. Phone: (415) 283-3161.

1859. Shurtleff, William; Aoyagi, Akiko. 1976. Excerpts from *The Book of Miso: Part II. East West Journal*. Oct. p. 44-45. [1 ref]

Address: 790 Los Palos Dr., Lafayette, California 94549.

1860. Hillman, Howard. 1976. 10 of the world's great cuisines—A cook's tour. *New York Times*. Nov. 7. p. XX1, 26, 28, 30.

• **Summary:** China, like France and Italy, is a country of regional cuisines. Canton: "Over 95 percent of Chinese-American restaurants serve Cantonese-style food because most Chinese immigrants to the United States have come from Canton [Guangzhou] and its surrounding Kwantung [Guangdong] Province." Most Americanized Cantonese cooking deserves its mediocre reputation, but true Cantonese cuisine is considered China's finest. So be sure to ask your waiter for authentic Cantonese dishes that have not been adapted to American tastes. Cantonese chefs make every effort to bring out the natural flavor of ingredients rather than masking them with heavy seasonings or sauces. "Flavoring agents much employed in Cantonese cooking include oyster sauce, salted fermented black beans, light soy sauce, rice wine, ginger and chicken stock." "Famous Cantonese dishes include Steamed Fish with Black Bean Sauce,... the vegetarian Buddha's Delight,..."

Next in popularity in America, after Cantonese cooking, is Northern and "Mandarin" cuisine, which comes from the northern provinces of Hopei (which includes Peking), Shantung, and Honan. "Mandarin Cuisine," an Occidental term, correctly refers to the elaborate and delicate dishes prepared for the elite members of the now-defunct Imperial Court. Famous recipes include Peking Duck, Bird's Nest Soup, Shark's Fin Soup, etc. So we must distinguish this from the unique man-on-the-street Northern cuisine. Among its characteristic "flavoring agents are fermented soy bean paste, dark soy sauce, rice wine and members of the onion family [genus *Allium*], especially garlic, leeks, scallions and chives."

Next in stateside popularity are the cuisines of Szechuan and Hunan, both known for their use of hot chilis and oil. Finally we have Shanghai, the Central Coast, and Fukien.

1861. Gevaert, Pierre. 1976. Re: Thank you for *The Book of Miso*. Letter to William Shurtleff and Akiko Aoyagi at New-Age Foods Study Center, 790 Los Palos Manor, Lafayette, CA 94549, Nov. 22. 1 p. Typed, with signature.

• **Summary:** "Dear William and Akiko, What a beautiful surprise to get this fresh and pure book of miso. A real big step for survival for anyone wishing to play in the new world where light is visible everywhere. Thank You! Yours friendly, Pierre Gevaert." Address: P.V.B.A. Lima, Edgar Gevaertdreef 10, 9830 St.-Martens-Latem, Belgium. Phone: (091) 82.41.76.

1862. *Hartford Courant (Connecticut)*. 1976. Food authors to discuss protein bases. Nov. 23. p. 16. *

1863. Bernstein, Hattie. 1976. New-Age 'Johnny Appleseeds' come to town: They spread the word for soybeans, tofu and miso. *Standard-Times (New Bedford, Massachusetts)*. Nov. 30. p. 7.

• **Summary:** "Bill Shurtleff and Akiko Aoyagi say they're trying to do for soybeans what Johnny Appleseed did for apples—introduce them to the West." This full-page article discusses a lecture-demonstration on tofu and miso cookery that gave at the New Bedford, Massachusetts, YMCA. Contains 4 recipes and 3 large photos by Hank Seaman, including one of Shurtleff and Aoyagi serving foods to Chris Mroczek [Roczek]. Address: Standard-Times staff writer.

1864. Autumn Press. 1976. Meet two people who care... [Bill Shurtleff and Akiko Aoyagi] (Ad). *Mother Earth News* No. 42. Nov. p. 177. Also in 1977: No. 44. March/April. p. 143, and No. 45, May/June p. 77. [2 ref]

• **Summary:** This is a half-page ad for *The Book of Tofu* and *The Book of Miso*, "two revolutionary cookbooks," with a description of the work of authors Shurtleff and Aoyagi, and a photo of them (from *The Book of Miso*).

Note: *The Book of Tofu* and *Book of Miso* were subsequently carried and prominently advertised in Mother's Bookshelf, where they were sold via mail order through the magazine. See for example *Mother Earth News*. 1977. No. 45. May/June. p. 114-15. Address: P.O. Box 469-M, 3941 Glen Haven Rd., Soquel, California 95073.

1865. Ebine, Hideo. 1976. Fermented soybean foods. *INTSOY Series* No. 10. p. 126-29. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign). [11 ref]

• **Summary:** Contents: Introduction. Miso. Shoyu. Natto. Conclusion. Literature cited. Discussion.

Production of fermented soyfoods in Japan in 1974 was as follows: Miso 587,228 tonnes (metric tons; this miso was made from 191,621 tonnes of whole soybeans, 2,200 tonnes of defatted soybean meal, 102,104 tonnes of rice, 22,280 tonnes of barley, 80,265 tonnes of salt).

Shoyu 1,213,350 tonnes (made from 14,278 tonnes of whole soybeans, 176,138 tonnes of defatted soybean meal, 176,319 tonnes of wheat, 209,674 tonnes of salt).

Natto 90,000 tonnes (made from 47,000 tonnes of whole soybeans). "In 1960 the National Food Research Institute initiated a project to develop a new type of soybean food in order to comply with a request from UNICEF to supply a nutritious protein food for children. The product thus developed is processed in the following way: soaked soybeans are first cooked in an autoclave at 121°C for 30 minutes. A starter of *B. natto* is then added to the hot,

cooked soybeans and mixed well. The inoculated soybeans are fermented at 42°C for 8 to 10 hours. The fermented soybeans are then passed through a chopper and spread over trays for vacuum dehydration. The dried material is made into a powder for use as an ingredient, mixed with wheat flour, in biscuits. In animal feeding experiments this new food had an absorption rate of 83 percent and a biological value of 63 percent, a notable improvement compared with the absorption rate and biological value of raw soybeans.”

“An ancient legend indicates that the technology for making soybean foods with the aid of microorganisms originated in China. These foods and the manufacturing process involved were introduced into Japan between 500 and 600 A.D.” Address: Applied Microbiology Div., National Food Research Inst., Ministry of Agriculture and Forestry, Tokyo, Japan.

1866. Lee, Hong Suk; Park, K.Y.; Chung, B.J.; Park, J.S.; Yohe, J.M. 1976. The status of soybean production and research in Korea. *INTSOY Series* No. 10. p. 239-42. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** Contents: Introduction. Major problems related to increased soybean production: Weather, varietal improvement, planting time, soil fertility and pH, cultural practices (cropping systems, planting patterns, seed treatment and inoculation), soybean pathology and entomology. Present and future research problems.

“Good quality soybeans with large grain size have been cultivated for thousands of years in the middle and northern part of the east coast of Korea. Because soybeans have been grown primarily for subsistence, they have not been regarded as a cash crop by Korean farmers... Soybean cultivation in 1974 and 286,188.4 hectares, thus making soybeans the third major crop of Korea in hectareage...

“Soybean production has gradually increased from 231,994 metric tons in 1970 up to 318,576 metric tons in 1974. Although total soybean production has increased, it has not kept up with demand as indicated by the fact that imports have increased from 36,291 metric tons in 1970 up to 66,370 metric tons in 1974...

“Home consumption is the major area for soybean use, about 122,000 metric tons being consumed in 1974. Soybeans are prepared by mix-boiling with rice or vegetables, or are eaten in the form of curd, sprouts, sauce, paste, milk, and flour. The government uses soybeans primarily for military needs. Soybean oil is used for industrial purposes.” Address: 1. College of Agriculture, Seoul National Univ.; 2. Corps Exp. Station, Office of Rural Development; 3-4. Inst. of Agricultural Science, Office of Rural Development; 5. Crop Improvement Research Center, Office of Rural Development. All: Suweon, Korea.

1867. Order forms containing names and addresses of people who purchased publications or materials from New-Age Foods Study Center in November 1976 (Archival collection). 1976. Lafayette, California. Order forms filled out by the person who placed the order.

• **Summary:** BOT2 = The Book of Tofu, Vol. 2—later titled Tofu & Soymilk Production. BOM = The Book of Miso. BOM2 = The Book of Miso, Vol. 2—later titled Miso Production. WIT = What is Tofu? pamphlet. WIM = What is Miso? pamphlet. TB = Tofu box. TK = Tofu Kit. NN = Natural nigari. CTE = Catalog of commercial tofu-making equipment. CKS = Catalog of koji starter for miso or shoyu.

November: Evan Root of Erewhon, Inc., 33 Farnsworth St., Boston, Massachusetts 02210 (plus follow-up letter of 15 March 1977 from same address). Alec Evans, Welcome Home Bakery, 231 S.W. 2nd St., Corvallis, Oregon 97330 (BOT2, TK, Tofu Cassette). Ira Leviton, Corncreek whole grain bakery, 60 Elm St., S. Deerfield, Massachusetts 01378 (100 WIT, 100 WIM, TB). Lulu Yoshihara, General Delivery, Denman Island, BC, V0R 1T0, Canada (BOM2). Jean Celle (According to the Book of Tofu he started a company, however, there is no proof that it exists), Fondation Macrobiotique Vellave, 36 bis, Avenue Charles Du Puy 43700, Brives Charensac, France (BOT2, BOM2, CKS). Frank Konishi, Southern Illinois University at Carbondale, Carbondale, Illinois 62901 (BOT). Tim Redmond, Eden Foods, 4601 Platt Rd., Ann Arbor, Michigan 48104 (BOT2, BOM2, CTE, CKS). Bernadette of Lifestream Natural Food Store, 1813 West 4th Ave., Vancouver, BC V6J 1M4, Canada (50 WIT, 50 WIM). K.K. Fung, 4661 Chancellor Cove, Memphis, Tennessee 38118 (BOM, BOT2, BOM2, NN, CTE, CKS). Dr. Tsutomu Mochizuki, c/o Shinshu Miso Research Institute, 1014 Minamiagata Machi, Nagano City 380 Japan (3 BOM). Max Sprenger, Knorr Research Institute, Leutschenbachstrasse 46, CH 8050 Zurich, Switzerland (BOM, BOT2, BOM2, 3 WIT, 3 WIM, CTE, CKS). Vegetarian, Inc., 1310 W. Main, Urbana, Illinois 61801 (BOT2, 2 BOM2, NN, CTE, CKS). Wholistic Health Education Foundation, 715 Monroe Ave., Rochester, New York 14607 (BOM2, 50 WIT, 50 WIM, NN, CTE, CKS). Bruce Walker, 2131 Red Deer Road, Saskatoon, Saskatchewan, S7K 1C8, Canada (BOT2, BOM).

Note: This is the earliest document seen (July 1999) that contains the word “wholistic.” Address: New-Age Foods Study Center, 790 Los Palos Dr., Lafayette, California 94549. Phone: (415) 283-3161.

1868. *Rain magazine (Oregon)*. 1976. Tofu and miso: Eating high and lightly. Nov. p. 4-7. [6 ref]

• **Summary:** An interview with William Shurtleff and Akiko Aoyagi at Rain House in Oregon, plus excerpts and illustrations from their writings. The two are now on a nationwide tour.

1869. Sanbuichi, Takashi; Watanabe, Iwao. 1976. Soybean production in Japan. *INTSOY Series* No. 10. p. 237-38.

R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** “Each year Japan produces approximately 120,000 metric tons of soybeans on 90,000 hectares. About 30 percent of this yield is raised on the northern island of Hokkaido, where large-scale farming is practiced. Especially in the northeastern part of Hokkaido, soybeans are a very important crop... Throughout the country the average soybean yield is about 1.4 metric tons per hectare, but during the past four years production in the Tokachi District of Hokkaido has risen to between 1.8 and 2.0 metric tons per hectare...”

“In Japan soybeans are used principally as a source of edible oil and protein foods, such as miso (bean paste), shoyu (soy sauce), tofu (soybean curd), and natto (fermented soybeans). The soybeans produced in Japan usually have large seeds, a high protein content, and are of a quality suitable for producing high quality soy products...”

“In general, early varieties are cultivated in the high latitudes and late varieties in the low latitudes, but on the southern island of Kyushu early varieties are occasionally used. Known as summer soybeans, they are sown in the spring and harvested in the summer. Late varieties, which are called autumn soybeans, are sown in summer and harvested in the autumn...”

“Results show that large-seeded varieties produce high yields. Soybeans grown in the northern parts of Japan usually have larger seeds than those raised in southern areas. It is believed that the marked difference between day and night temperatures and the favorable soil moisture content during the early stages of plant growth account for the large size of soybean seeds grown in the north. The author observed a serious decrease in seed size when Japanese varieties were introduced into Thailand...”

“Soybeans are raised in several types of areas in Japan. Traditionally they have been planted beside the footpaths in paddy rice fields. Intercropping with wheat is another old cultural practice, although both practices are seldom used today. Because of the over-production of rice in Japan, the government has recently recommended that soybeans be cultivated in rice fields.” Address: 1. Tokachi Agric. Exp. Station, Memuro, Kasai-gun, Hokkaido; 2. National Inst. of Agricultural Science, Nishigahara, Kita-Ku, Tokyo. Both: Japan.

1870. Shurtleff, William; Aoyagi, Akiko. 1976. How to make miso: An excerpt from *The Book of Miso. East West Journal*. Nov. p. 38-39. [1 ref]

• **Summary:** Describes how to make homemade red miso (Sendai miso). With many illustrations (line drawings) by

Akiko Aoyagi. Address: 790 Los Palos Dr., Lafayette, California 94549.

1871. Somaatmadja, Sadikin; Guhardja, Edi. 1976. Current status of soybean research and utilization in Indonesia. *INTSOY Series* No. 10. p. 232-35. R.M. Goodman, ed.

Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign). [1 ref]

• **Summary:** Contents: Introduction. Production: Hectarage and yield. Production techniques: Systems of cultivation, inoculation, harvesting and processing for storage, storage. Factors affecting soybean production in Indonesia: Seed viability and seed supply, pests, diseases, cultural practices, varieties. Consumption and utilization. Marketing. Extension: Training, method used to increase soybean production (expansion of hectarage, intensification, varieties).

“At present soybeans occupy fifth place among the other food crops, after rice, cassava, maize, and sweet potatoes. Research on soybeans is conducted at the Central Research Institute for Agriculture (CRIA) at Bogor and its substations, including Sukamandi and Ujung Pandang; at several universities, such as the Institut Pertanian Bogor, Universitas Gadjah Mada, Jogyakarta, and Brawijaya Malang; and at other research institutes, including Badan Tenaga Atom Nasional, Jakarta, and Lembaga Biologi Nasional, Bogor.

“From 1970 to 1973 the annual harvested hectarage of soybeans averaged 703,878 hectares with a production of 517,199 metric tons and an average yield of 7.34 quintals [1 quintal = 100 kg] per hectare. Approximately 80 to 85 percent of the total soybean hectarage in Indonesia is in Java-Madura...”

“Per capita consumption of soybeans in Indonesia reflects the distribution of the crop. In Java the per capita consumption each year is about 5.04 kg; in Sumatra, Kalimantan, Sulawesi, and Maluku/Irian Jaya between 0.10 and 1.04 kg; and in Bali about 3.43 kg.

“Soybeans are not consumed directly, but are processed into a large number of products. Tempeh (fermented soybeans), tahu (soybean curd), tauge (soybean sprouts), kecap (soy sauce), taucu (fermented mixture [Indonesian miso]), and oncom (made from residues of soymilk and tahu) are consumed as side dishes with rice. Roasted beans, tahu chips, and boiled seeds are eaten as snacks, and boiled young pods are prepared as a green vegetable. Soymilk is consumed as a beverage.” Address: 1. Sukamandi Research Station, Central Research Inst. for Agriculture, Sukamandi; 2. Bogor Agricultural Univ., Bogor. Both: Indonesia.

1872. Maglaty, Jeanne. 1976. Use as answer to nutritional needs. Couple praises soybean uses. *Hartford Courant (Connecticut)*. Dec. 1. [2 ref]

• **Summary:** William Shurtleff and Akiko Aoyagi, authors of *The Book of Tofu* and *The Book of Miso*, on a national speaking tour, visited Hartford. “‘We’re trying to do for soybeans what Johnny Appleseed did for apples,’ said William Shurtleff of Lafayette, California.” A photo by Michael McAndrews shows the two; Shurtleff is speaking into a microphone and holding a copy of *The Book of Tofu*. Aoyagi is holding a wooden tofu kit.

1873. Earl, Johnrae. 1976. Queen: In full sail on a sea of satisfaction. *Chicago Tribune*. Dec. 5. p. C13.

• **Summary:** Tokyo Tea Garden, a true diamond in the rough, is a tiny restaurant at 5 W. Superior St. that serves authentic Japanese cuisine. “For those who want to go the whole way, there’s dried sea seed, salted fish eggs, cold soy bean cake [Hiya-yakko], and fried soft won ton. The house soup was made with soy bean paste [miso].” It was unusual but tasty.

1874. Pearce, Jean. 1976. Getting things done: Expanding dietary horizons [Miso]. *Japan Times (Tokyo)*. Dec. 19. [Eng]

• **Summary:** “... when you begin experimenting with the 400 recipes introduced in “The Book of Miso” by William Shurtleff and Akiko Aoyagi which I have been quoting, you will likely become an ardent supporter of this highly nutritious food. There are also joyful drawings by Akiko and pages of general information about healthful food and living, culture and customs, and the history of foods, that make fascinating reading. Bill is a dedicated promoter of healthful products that can help overcome the food crisis which, for many of our world’s people, is not something to be worried about in the future; the hunger is now.

“I would like to reprint the whole book for you, but instead I’ll urge you to get a copy as soon as possible and begin learning about miso. Combine it with ‘Tofu’ for a Christmas gift combination that will be gratefully received by the growing number of people who are interested in good health, conservation, ecology, efficient utilization of natural resources—in other words, all of us. You’ll find the books at most stores handling English-language publications.” A small photo shows Jean Pearce.

1875. Matsuda, Yutaka. 1976. The etymology of soy. *Kwansei [Kansai] Gakuin University Annual Studies* 25:3-4. Dec. Nishinomiya, Japan. [3 ref. Eng]

• **Summary:** “British and American dictionaries including OED (*Oxford English Dictionary*) consider the Japanese word *shōyu* to be derived from Chinese. Is this theory reliable?

“OED states that the word is derived from Chinese *shi-yu*, *shi-yau* (*shi* salted beans, *yu* oil), and *Universal English Dictionary* (1932), *American College Dictionary* (1960), *Random House Dictionary* (1966). *Oxford Dictionary of*

English Etymology (1966), *Chambers Twentieth Century Dictionary* (1972) have followed suit. This Chinese pronunciation *shi* appears to represent a character meaning fermented soybeans with salt. On the other hand, the character meaning fermented soybeans and wheat with salt is transcribed *chiang* in present-day standard Chinese [according to the *pinyin* system established in China in 1957]. *Webster’s Third New International Dictionary* (1961) [Web. III] picks out *chiang-yu* as the origin of the Japanese term, and *Klein’s Comprehensive Etymological Dictionary* (1967), *American Heritage Dictionary* (1969) [AHD], *Webster’s New World Dictionary, College Edition* (1970) also adopted the *chiang* theory.

“In Japan *shi* had been eaten before the Taiho Rei Statute (701), but *shō* rather than *shi* was to the Japanese taste, and *shōyu* squeezed from *chiang* was used instead of *shi-yu* squeezed from *shi*. It follows that the OED theory—the *shi* theory cannot be supported.

“The Web. III theory—the *chiang* theory is also doubtful. Web. III and AHD note that the Japanese term *shōyu* is derived from Pekinese, but it is hardly plausible that the compound should come from Modern Standard Chinese, because *shiyau-yu* appeared already in the latter half of the 15th century and the very word itself was entered in the Japanese dictionary published in 1597. Indeed the Chinese characters *chiang* and *you* were introduced from Ancient China but the compound word *chiang-you* [pronounced *shoyu* in Japanese] was coined in Japan, as today’s Japanese dictionaries such as *Shin Jigen* (1968) and *Shin Kanwa Jiten* (1973) label the term as Japanese-made. As a matter of fact, several other compounds coined in Japan have been reexported to China: *tetsuzuki* (procedure) and *torishimari* (control), which seem to have been exported from Japan in the earlier periods of the 20th century, are now used in China, too, pronounced *shōuoxū* and *qūdi*, respectively [as written in pinyin]. The characters pronounced *haken* in Japanese and *bàqáan* in Chinese, meaning hegemony, which is so crucial a compound related to the Shino-Japanese [sic, Sino-Japanese] peace treaty under negotiation that the treaty conclusion depends on whether or not the compound will be included in it, also was coined in Japan. Along with these, the compound word *shoyu/chiang-you* has been imported from Japan and is pronounced in the Chinese way.

“Perhaps noticing a marked difference between *chiang-yu* and *shōyu*, *Webster’s New Collegiate Dictionary* (1973) has given up the *chiang* theory and has put forward a new one [Jap. *shōyu*, fr. Chin (Cant) *shi-yaû*, lit. soybean oil]. *Shi-yaû* might be Cantonese *chi you*. Anyway the new theory is nothing but a variant of the OED theory.

“In conclusion, we may duly state that *sōyu* or *soyu* which was the dialectical form of *shōyu* in the latter half of the 17th century was borrowed through Nagasaki into Dutch as *soya* and *soja*, and then from Dutch into English as

soya and *soy*. The theory that Japanese *soi* was directly adopted into English as *soy* is unsupportable because there was no opportunity at all of direct contact between Japanese and English in those days, though there is a possibility that dialect form *sô* or *soi* might have existed in Nagasaki at that time.” Address: Nishinomiya, Japan.

1876. Order forms containing names and addresses of people who purchased publications or materials from New-Age Foods Study Center in December 1976 (Archival collection). 1976. Lafayette, California. Order forms filled out by the person who placed the order.

• **Summary:** BOT2 = The Book of Tofu, Vol. 2—later titled Tofu & Soymilk Production. BOM = The Book of Miso. BOM2 = The Book of Miso, Vol. 2—later titled Miso Production. TB = Tofu box. TK = Tofu Kit. NN = Natural nigari. CTE = Catalog of commercial tofu-making equipment. CKS = Catalog of koji starter for miso or shoyu.

Stephen Sieh, 5146 N. 5th St., Philadelphia, Pennsylvania 19120 (BOT2). Andrew Schecter, c/o Zen Center, 7 Arnold Park, Rochester, New York 14607 (BOM2). Bill Tims, The East West Foundation, 359 Boylston St., Boston, Massachusetts (CKS). Lifestream Natural Food Store, 1813 W. 4th Ave., Vancouver, BC V6J 1M4 Canada (Pamphlets on tofu and miso). Lynette King, Teaching Japan in the Schools, Roger House, Stanford University, Stanford, California 94305 (TK). Dr. Werner G. Jaffe, Editor General, *Archivos Latinamericanos de Nutricion*, Apartado 2049, Caracas, Venezuela (BOT, BOM). Pierre Gevaert, Lima P.V.B.A., Edgar Gevaertdreef 10, 9830 St.-Martens-Latem, Belgium (3 each BOT, BOM, BOT2, BOM2, PT, PM, CTE, CKS). Address: New-Age Foods Study Center, 790 Los Palos Dr., Lafayette, California 94549. Phone: (415) 283-3161.

1877. Saono, S.; Brotonegoro, S.; Abdulkadir, S.; Basuki, T.; Jutono, -; Badjra, I.G.P. 1976. Microbiological studies of tempe, kecap, and taoco. I. The microbial content and its amylolytic, proteolytic, and lipolytic activities. Progress Report Subproject III.b. ASEAN Project for Soybean and Low-Cost High Protein Foods. Jan-Dec. 1976. Unpublished manuscript. *

1878. *Soybean Digest*. 1976. Book review: *The Book of Miso* by Shurtleff and Aoyagi. Dec. p. 28. [1 ref]

• **Summary:** The book can be ordered from *Soybean Digest*. “In this book, miso or fermented soy-bean paste, a savory, high-protein seasoning that allows the body to use this protein and other nutrients from soybeans more completely, is discussed in context to the world food crisis. It also shows miso to be varied and versatile, as well as nutritive.

“Many Americans are now preparing their own miso at home—and *The Book of Miso* tells how to prepare your own,

as Far Easterners have done for centuries. Four hundred recipes are included.”

1879. **Product Name:** Brown Rice (Genmai) Miso.

Manufacturer’s Name: Erewhon (Importer). Made in Japan by Sendai Miso Shoyu Co.

Manufacturer’s Address: 33 Farnsworth St., Boston, MA 02210.

Date of Introduction: 1976.

Ingredients: Brown rice, soybeans, water, sea salt.

Wt/Vol., Packaging, Price: 16 oz.

How Stored: Refrigerated preferably.

New Product–Documentation: Ad in East West Journal.

1977. “Erewhon: Our traditional foods are the foods of the future.” “Recently a brown rice (genmai) miso has been added to the Erewhon line of imported foods. Based on the traditional techniques and standards, this new variety was two and a half years in development before Mr. Ko Haga, brewmaster of Sendai [Miso Shoyu K.K.] produced what he considered a successful brown rice koji, or starter.” Sendai “produced a huller which merely scratches the bran along the ridges of each grain; even though only 1% of the grain is lost in the process, this is sufficient to permit spores to enter the inner starches. You will find genmai miso much sweeter than the kome [white rice] variety, due to the higher ratio of rice to soybeans in this special product. Sendai uses a regionally grown rice, called Sasanishiki, which is highly regarded in Japan, and the soybeans used are the ‘Prize’ variety grown organically in Minnesota by farmer Ed Ricke. Genmai miso is more expensive than the other varieties Erewhon offers. Besides being the first miso made with organic soybeans,” it also undergoes an 18-month fermentation.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 236. In 1968 Erewhon started to import miso and shoyu from Japan. “A wholesale and distribution company was started that year and soon it was trucking a line of fine Japanese imported red, barley, and Hatcho misos to a growing number of natural food stores.” By 1970 sesame miso and tekka miso were added to the Erewhon line. By 1976 brown rice (genmai) miso was added.

Ad (7.5 by 13 inches, full color) in *Natural Foods Merchandiser*. 1989. Feb. p. 25. There are now 4 varieties of miso under the Erewhon brand: Hatcho (note new correct spelling), genmai, kome, and mugi. Note that all still use the esoteric Japanese names. Plastic bag packages are colorful and attractive. On each is the prominent endorsement: “Recommended by Michio Kushi. Macrobiotic quality.”

1880. **Product Name:** [Tofu, and Red Miso].

Manufacturer’s Name: Etablissements Takanami (Takanami Tofu Shop).

Manufacturer’s Address: 128 Rue des Treffles, Anderlecht, Brussels, Belgium. Phone: 025-228-192.

Date of Introduction: 1976.

New Product–Documentation: Shurtleff & Aoyagi. 1977. Jan. 28. Commercial Tofu Shops and Soy Dairies.

Shurtleff & Aoyagi. 1978, Dec. *The Book of Tofu* (Ballantine pocketbook edition). “Appendix B: Tofu Shops and Soy Dairies in the West.” p. 400. Etablissements Takanami, Rue Antoine Dansaert 107, 1000 Brussels, Belgium. Phone: 02-511-6635. Owner: Mr. Takanami; also makes miso.

Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Etablissements Takanami. Magasin [retail shop]: Rue Antoine Dansaert 107, 1000 Brussels, Belgium. Phone: 02-511-6635. Atelier [plant]: Rue de Trefles 128, 1070 Brussels, Belgium. Phone: 02-522-8192. Owner: Mr. Takanami. They also make miso.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255. Listed as the Takanami Miso Shop. Address same as for 1977.

1881. Ito, Hiroshi. 1976. Hamanattô [Hamanatto]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 71(3):173-76. [Jap; eng+]

• **Summary:** Contents: Introduction. A brief history of Hamanatto. Methods of production: Yamaya and Horinji methods, Daifukuji method. The microbiology and chemistry of Hamanatto fermentation. Hamanatto’s special characteristics. Serving Hamanatto. Conclusion. Acknowledgments.

Two flowcharts show Hamanatto production methods at Horinji and Daifukuji. Tables: 1. Distribution of various microorganisms in Hamanatto (cells per gram) at Yamaya, Horinji, Daifukuji. 2. Nutritional composition of Hamanatto (from Yamaya, Horinji, and Hamana), Daitokuji natto, and regular sticky natto. 3. Composition of free amino acids (mg per 100 gm defatted, and gm per 10 gm protein) in Yamaya Hamanatto, Daitokuji natto, Yamaya Hamanatto, soybean miso (temperature controlled- and natural fermentations), and Hatcho miso. 4. Composition of Hamanatto fats. 5. Volatile acids in Hamanatto. 6. Aromatic compounds in Hamanatto.

In Japan, there are basically two types of natto: Regular natto (*itohiki-natto*) and salty natto (*shiokara-natto*). Generally the word ‘natto’ refers to the former but in Shizuoka prefecture in and around Hamamatsu city a type of salty natto called *hamanatto* is famous. Totally unrelated to regular natto except in name and the fact that both are fermented soyfoods, it is actually a close relative of soybean miso in terms of its flavor and the way it is produced. However unlike miso, the soybeans retain their original form, uncrushed, and the product has its own unique flavor and aroma. Another type of salty natto is Kyoto’s Daitokuji-natto.

A brief history of hamanatto: Hamanatto originated in ancient China and is one of the progenitors of today’s miso

and shoyu. Many old documents show that its relatives *kokusho* (‘grain chiang’) and *teranatto* (‘temple natto’) were brought to Japan from ancient China. A type of fermented, salt-preserved cooked soybeans called *tou-ch’ih kyo* was excavated together with articles buried with one *Mao-tai*, a ruler of the early Han dynasty who lived about 2200 years ago. This was the earliest form of hamanatto. According to the first scholars and envoys from Japan to T’ang dynasty China, *chiang* and *kuki*, both progenitors of miso and shoyu, were introduced to Japan from China. Records show that the great T’ang dynasty Buddhist master Ganjin, who came to Japan by boat in 753, brought with him 1428 gallons of ‘sweet kuki,’ an early type of salty natto. The first mention of salty natto in Japan appears in Fujiwara Akihara’s *Shinsaru Gakki / Shin-sarugaku-ki*, written in 1286. The first character of the word ‘natto’ means ‘to pay, supply, or dedicate;’ the second means ‘bean or soybean.’ According to the *Honcho Shokkan*, written in 1697, the first character was derived from the fact that natto were first prepared in Japanese temple kitchens which are known as *na-ssho*, the place which supplied the monk’s food. Since the propagation of salty natto throughout Japan was done primarily by temples, they also came to be known as ‘temple natto’ (*tera-natto*). They served as an important source of protein and savory seasoning in the Buddhist vegetarian diet. Kyoto’s Daitokuji-natto, Ichimeji Ikkyuji-natto, and Tenryuji-natto, each made in temples, and the Hamanatto made at Daifukuji and Horinji temples in and around Hamamatsu city are popular to this day. Hamanatto first became known when the monks of Daifukuji temple presented some to the seventh Ashikaga shogun, Ashikaga Yoshikatsuko, during the 1400s. during the Warring States Period (1467 to 1568) they also presented Hamanatto to lords of the families of Imagawa Toyotomi, and Tokugawa.

Because of its unique flavor and aroma and good keeping qualities, hamanatto became known throughout Japan. In some cases the skin of sansho seeds (Japanese pepper; *Zanthoxylum piperitum*) were mixed in and the product called *kara-natto* (‘spicy natto’). When Toyotomi Hideyoshi undertook his Korean campaigns, he took lots of hamanatto with him. When he arrived in the ancient province of Hizen in northwest Kyushu, just before his soldiers embarked in boats to Korea, he gave this food the same name, *kara-natto*, but written with characters which mean ‘beans for subjugating T’ang dynasty Korea.’ This name, he hoped, would bring him luck in his campaign. After returning to the Hamamatsu area in central Japan, he donated land to makers of hamanatto to encourage their craft.

Later, when Tokugawa Hideyasu took over Hamamatsu castle, he used hamanatto as soldiers’ provisions. Each year the local monks gave hamanatto as a gift to the shogun, who in turn used it as a New Year’s offering. Still later, produced by temple cooks and craftsmen, it was given as a New

Year's gift to parishioners; it also had a symbolic meaning since the word for soybeans (*mamé*) has also come to mean healthy and robust. In 1968 Yamaya, a producer of tamari shoyu (soy sauce) under the direction of Suzuki Yasuke, attempted to make an improved version of the product previously prepared at Daifukuji temple and first affixed the name 'hamanatto.' Thus the name of the product developed in the following order: *shio-kara-natto* ('salty natto), *kara-natto* (T'ang dynasty natto), *hamana-natto*, and *hama-natto*. To this day, Daifukuji has maintained its own special method of production, but this too has been commercialized.

Methods of production: Today hamanatto is prepared by two methods: the traditional method handed down from generation to generation since ancient times, and the modern industrialized method which made improvements on the traditional method without harming the special flavor and aroma. Yamaya company and Horinji temple use closely related methods; the former is industrialized while the latter is a handmade process using koji starter. Daifukuji uses a different traditional process without koji starter since the ancient incubation room, wooden trays, and rice-straw covering mats are each permeated with starter mold spores. The soybean koji (molded soybeans) is combined with brine and put into vats for the second fermentation in September. Since the room temperature during the koji making (first fermentation) is 20° to 25°C (68-77°F) no special incubation heat source is needed. Yet since the molds propagate naturally, without special inoculation, the koji making takes a long time, up to ten days.

There are numerous points of difference from regular miso production; when making salty natto [soy nuggets] the soybeans are not crushed; the koji is incubated with brine in a keg or vat with a heavy pressing lid; and the final product is sun-dried. At the factory, the soybeans are only partially reconstituted [by soaking in water] until they reach 1.5 to 1.6 times their dry weight; this takes 2 hours in winter and 1½ hours in summer. They are then drained and allowed to stand for 4-5 hours so the absorbed penetrates deeper. If they are drained for too long, the beans become hard. They are then steamed for 4-5 hours [at atmospheric pressure] and allowed to stand overnight in the steamer. At Daifukuji, the unsoaked beans are dropped into boiling water, parboiled for 7-8 minutes, steamed for 7-8 hours in a 2 meter deep steamer, then allowed to stand in the steamer until the next morning. Care is taken that the beans are not crushed or dehulled. Nowadays, since it is known that the process of leaving the beans overnight in the steamer lowers their net protein utilization and makes them more difficult for the enzymes to digest, this step is generally omitted. Traditionally it was always used to darken the beans; there were apparently no problems with bacterial contamination, perhaps because the reaction of sugars and amino acids under heat produces substances which reduce the

proliferation of bacteria and yeasts. In fact, the overnight period in the steamer may have been done expressly to encourage this effect. Continued.

1882. Ito, H. 1976. [The flavor of miso: A review of the literature]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 71(7):500-04. [37 ref. Jap]*
Address: Food Research Inst., Ministry of Agriculture & Forestry, Fukugawa, Tokyo, Japan.

1883. Ito, Hiroshi. 1976. Hamanattô [Hamanatto (Continued—Document Part II)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 71(3):173-76. [Jap; eng+]

• **Summary:** Continued. The steamed beans are then spread on a thick rice straw mat (*mushiro*), drained well, sun dried, sprinkled with roasted barley flour, and mixed until each bean is well coated. The straw mat helps to absorb excess water. In factories, the roasted flour is premixed with koji starter (*Aspergillus oryzae* mold spores), they dried the straw mat and used it year after year. Molds such as *A. oryzae*, *A. soyae*, and *Rhizopus* species inoculated the beans during mixing with the flour. The mixture is covered for one night with rice straw mats, then the next day transferred to wooden koji trays, which are arranged in the koji incubation room to make koji. Care must be taken that excess heat does not develop during fermentation, lest alien bacteria proliferate and the product's flavor and aroma decline. To prevent this, the koji mycelium is broken up three times by hand in the trays during the incubation.

At factories, the finished koji is sun-dried for 4 to 5 hours in winter (Hamamatsu is famous for its dry fall winds) or for 2 hours in summer so that the moisture content is reduced to below 30 to 35 percent. IF this drying is insufficient, after the beans have been put into the vats they easily get crushed. The vat used is a 19-gallon wooden vat or a small wooden tub. The koji is divided among several vats, brine made by combining salt with boiled water is added, a pressing lid equal to twice the weight of the vat contents is set in place, and the mixture is allowed to ferment for 80 to 90 days in summer or 150 days in winter. (In some places (Daifukuji), unpasteurized shoyu is used in place of brine).

The use of a heavy pressing lid is preferable since it causes the fermentation to proceed slowly; a light one helps it to go faster, but the soybeans more easily lose their form. At temples they sliver the middle skin of sansho seeds and place these at the bottom of the vat, then add the finished koji and finally the brine. In factories they add a more concentrated brine and ferment the mixture for at least 2 months. The fermentation room (*kura*) should have good air circulation and ventilation, otherwise the product may develop and unpleasant moldy or musty odor.

After draining off the brine scooping the beans out of the vats, they are spread on rice straw mats (traditionally *mushiro* from the Ryukyu islands; today *tatami* matting), sun-dried, and sifted to remove small pieces, which are discarded. In a separate process, gingerroot is cut thinly, soaked in boiling water, sun dried, and soaked in moromi (shoyu mash) for about 10 days to make pickled gingerroot. Sansho seeds are also added to some types.

The microbiology and chemistry of Hamanatto fermentation: The molds found in fresh hamanatto koji and commercial hamanatto, in addition to *Aspergillus oryzae*, include *Rhizopus* species and *A. niger*. Hamanatto such as that made at Daifukuji using a low incubation temperature (20-25°C) and a long time contains a large proportion of *Rhizopus* on the surface of the soybeans. Moreover the amylase and protease enzymes in these molds are weaker and less active than those from the koji used for commercial shoyu or miso. For this reason the soybeans are not broken down, but rather remain in their whole form. If the koji is made mechanically, the enzyme strength and quality increases. The incubation proceeds more quickly in summer since the temperature is higher; the koji is ready in 3 days.

In general during the koji production, amylase, protease, and pepsidase activity reach a maximum at 50 hours, but in order to dry it, it must be left longer which causes the activity to decrease. In addition to molds, lactic acid bacteria and film yeasts, which are related to *Pediococcus*, are found in all hamanatto; they are mixed in during contact with the straw mats. If air circulation during koji production is poor, lactic acid bacteria proliferate more than usual. Unlike most lactic acid bacteria, they ferment soybean sugars creating undesirable effects, but do not ferment lactose. After the koji-brine mixture is in the fats, film yeasts proliferate among the various flavors; at 45 days they are most abundant, then later decrease. Especially on the surface of vats with poor air circulation, they are found as a white mold. These yeasts produce hamanatto's unique aroma.

Hamanatto's special characteristics: Because the fermentation time is long, the color turns a dark brown. The form of the beans is well preserved. The composition of nutrients is shown in figure 2. Compared with regular natto, hamanatto has less moisture and more salt. Free amino acids are shown in figure 3. Those abundant are glutamic acid, leucine, and proline, while cystine, tryptophan and methionine are the most scarce. Compared with soybean miso, arginine, cystine, and histidine are also relatively scarce. Since soybean miso undergoes an even longer fermentation than hamanatto the difference is the amino acids freed from the soybeans, which is particularly enhanced by protease enzymes from the koji molds. Hamanatto flavor is rich and full-bodied, somewhat like that of soybean miso, but with a special aroma, more tartness, and a unique flavor component that Japanese call *egumi*.

The latter, related to oil rancidification, imparts what some describe as a subtle harsh or unpleasant stimulation to the tongue or throat. Kiuchi et al, in 1976, in an analysis of hamanatto lipids, found that this *egumi* originates from linoleic acid. Hamanatto fats, unlike those of regular natto, are more than 70 percent of free fatty acids. The majority of fats in both natto and soybeans are triglycerides, with other fat components being relatively low. The lipase in hamanatto koji breaks down a large percentage of the fats but the composition of the resulting fatty acids is not different from those found in soybeans; in both cases, linoleic acid comprises more than 50 percent of the total.

Hamanatto's volatile acids and aromatic compounds are shown in figures 5 and 6. The aroma of Yamaya's hamanatto was superior to that of Daifukuji or Hamana. This aroma was very poor just after the koji was made but during the ripening of various flavors, isobutyl aldehyde, isobutyl alcohol, and various amines decrease together with a decrease in the poor aroma. However if the air circulation is bad while making koji or during the vat fermentation, alien microorganisms proliferate, leaving an undesirable aroma.

1884. Ito, Hiroshi. 1976. Hamanattô [Hamanatto (Continued—Document Part II. Continued)]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 71(3):173-76. [Jap; eng+]

• **Summary:** Continued. Serving Hamanatto: Hamanatto is used both as a seasoning and as a protein source. Like Daitokuji-natto it is sprinkled as a seasoning over hot rice in a small bowl, then doused with hot green tea to make the popular Ochazuke. It may also be served as an hors d'oeuvre with sake, used in place of tea cakes with whisked green tea as Chauke, or served as a rice seasoning in box lunches like shoyu-simmered kombu. Since ancient times it has been used in Zen Temple Cookery as a source of subtle flavor, diced and mixed with grated daikon, sprinkled with vinegar, or used in the Chinese tofu dish Mabo-dofu. Its abundance of glutamic acid and nucleic acids enrich the flavor of any food with which it is served.

Conclusion: Hamanatto, a progenitor of today's miso and shoyu, has been made by traditional methods since ancient times. Long lasting, it embodies the fermentation and nutritional wisdom of our forebears. Thus its scientific study reveals new and valuable information. In its a traditional processing there are points that should be improved, yet today it is a long lasting food with its own distinctive characteristics.

Acknowledgements: I would like to thank the Yamaya and Hamana companies for supplying documents and samples, and allowing me to quote selected portions; Professor Kayo Kon of Shizuoka Women's University; and my colleagues at the National Food Research Institute, Kan Kikuchi, Teruo Ota, and Shinkuni Sasachi.

1885. **Product Name:** Kikkoman Instant Miso-Shiru Soy Bean Soup Mix [Shiro (White), or Aka (Red)].

Manufacturer's Name: Kikkoman Corporation.

Manufacturer's Address: Noda 278, Chiba-ken, Japan.

Date of Introduction: 1976.

Ingredients: Incl. miso (soybeans, rice, salt), dried green onions (negi), dried wheat gluten cakes (fu), dried seaweed, bonito extract, and MSG (monosodium glutamate).

Wt/Vol., Packaging, Price: 1.83 oz foil pouch retails for about \$1.07 (May 1980).

How Stored: Shelf stable.

New Product–Documentation: *Food Product Development*. 1980. May. p. 26. Label in both Japanese and English. Front panel shows a drawing of a miso soup cup with a happy face on it. Each pouch contains 5 individual serving packets.

1886. Lee, C-H. 1976. [The effect of Korean soysauce and soy paste making on soybean protein quality]. *Hanguk Sikip'um Kwahakhoe Chi (Korean J. of Food Science and Technology)* 8(1):12-32. [Eng; kor]*

1887. **Product Name:** Yamajirushi (Shinshu type) Miso, Kanemasa Miso, Yamaizumi Miso, Aka Miso, and Koji Miso.

Manufacturer's Name: Miyako Oriental Foods, Inc. Div. of Yamajirushi Miso Co. in Japan.

Manufacturer's Address: 404 Towne Ave., Los Angeles, CA 90013.

Date of Introduction: 1976.

New Product–Documentation: Price List. 1976. Sept. 1; Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 238, 240. By 1983 Miyako was the largest miso producer in the United States, with 544 tonnes a year.

1888. Nakano, Masahiro; Ebine, H.; Ito, H. 1976. On the miso, a Japanese traditional fermented food, in view of ecological system of fermentation microorganisms depending on the types of miso products. In: H. Dellweg, ed. 1976. *Abstracts of Papers, Fifth International Fermentation Symposium (Germany)*. See p. 363. Address: 1. Faculty of Agriculture, Meiji Univ., Japan; 2. National Food Research Inst., Tokyo.

1889. Steinkraus, Keith H. 1976. Soybean milk processing and technology. *Applied Nutrition (Calcutta)* 4(2):49-62. Lecture delivered to the Indian Dietetic Association. [31 ref]
 • **Summary:** Contents: Abstract. Introduction. Historical aspects of soybean milk processing and technology. Commercial success among soybean milks: Soyalac (made by Dr. Harry Miller and Loma Linda Food Co.), Infant formulas (incl. Sobee and Pro-Sobee [Mead Johnson], Mull-Soy [Borden], Isomil [Ross]), Saridele (in Indonesia), soft

drink approach (Vitasoy made by Hong Kong Soya Bean Products Co. Ltd.; Vegemilk, Beanvit, and Vitabeen made by Yeo Hiap Seng; Vitamilk made by Green Spot (Thailand) Ltd.; Philsoy in the Philippines), Taiwan Farmer's Cooperative soybean milks. Advances in soybean milk technology: Defatted soy process, residue (pulp) recovered from soybean milk manufacture, soybean milks simulating cow's milk, flavor problems, nutritional problems. Address: Dep. of Microbiology and Food Science, Cornell Univ.

1890. USDA Northern Regional Research Center. 1976. Removal of phytic acid in soybeans to increase utilization of trace elements in soybeans and also the solubility of soybean protein. *Report of the USDA Northern Regional Research Center*. p. 11. *

Address: NRRC/NRRL, Peoria, Illinois.

1891. **Product Name:** [Natto Miso].

Foreign Name: Nattô Miso.

Manufacturer's Name: Yoshida Shohachi Shoten K.K.

Manufacturer's Address: Takashima 1-382, Shimabara-shi, Nagasaki-ken, Japan. Phone: 0957-62-4107.

Date of Introduction: 1976.

New Product–Documentation: Shurtleff and Aoyagi. 1976. *The Book of Miso*. p. 43, 239. Shurtleff and Aoyagi. 1983. *The Book of Miso*, 2nd ed. p. 42, 258 (R.1). "Natto Miso: Prepared in the area of Nagasaki since the 1700s, natto miso contains a relatively large proportion of soybeans which gives it an appearance similar to the famous sticky fermented soybeans called *natto*, although there are no real natto in natto miso. Containing whole soybeans, barley koji, slivered kombu, gingerroot, and, in some modern varieties, *mizumamé* (a natural honeylike sweetener extracted from rice [rice syrup], millet, or barley), this miso is fermented at the natural temperature for about 30 days. One delicious and very popular variety, now widely available in the United States, is free of preservatives, artificial or refined sweeteners, and all other additives—proving that it can still be done. We would prefer to see this and all similar misos labeled as 'Finger Lickin' Miso;' we feel the general term is more appealing and less confusing." Page 258 states that the maker of this traditional, natural product is Yoshida Shohachi Shoten.

1892. Bumgarner, Marlene Anne. 1976. *The book of whole grains: The grain-by-grain guide to cooking, growing, and grinding whole cereals, nuts, peas, and beans*. New York, NY: St. Martin's Press. xiv + 334 p. See p. 261, 281-89. Illust. by Maryanna Kingman. Index. 24 cm. [20 ref]

• **Summary:** Gives recipes for: Homemade tofu (p. 281-82). Brown rice porridge with tofu and vegetables. Okara and barley flour muffins.—all reprinted with permission from *The Book of Tofu* by Shurtleff and Aoyagi. Plus original

recipes for: Miso soup. Soybean festival (using cooked whole dry soybeans).

1893. Duquette, Susan. 1976. Sunburst Farm family cookbook. Santa Barbara, California: Woodbridge Press Publishing Co. 303 p. Illust. by Donna Wright. Photographs by Mehosh Dziadzio. From the Brotherhood of the Sun. Recipe index. 23 cm.

• **Summary:** “The Brotherhood of the Sun is a family of more than 300 people, who have dedicated themselves to living in harmony with all people and all things. Our desire is to follow the simple laws of God and nature. In order to create an environment in which this is possible, we have established four communities upon thousands of acres of farm and ranch land in the coastal mountains around Santa Barbara, California... In order to help support ourselves and to share with other people our way of life, we have established a large organic foods complex in Santa Barbara called Sunburst Organic Foods.

“This organization includes a large wholesale warehouse that ships food to stores across the country, six large retail markets (with future markets projected along the coast), a community store, a restaurant called ‘The Farmer and the Fisherman,’ a whole-grain bakery and a fresh juice-bottling plant that distributes along the west coast.”

Although this natural foods cookbook is not entirely vegetarian (it includes a chapter titled “Fish,” p. 100-123, and many fish and shellfish recipes), the rest of the book is vegetarian and one long chapter (p. 64-99) is titled “Vegetarian Main Dishes.” The illustrations are beautiful.

Soy-related recipes include: Tofu-vegie soup (p. 17). Miso-onion soup (p. 17). Many recipes topped with “Baco-bits.” Bean salad (with soy beans, p. 35). Sprouts (incl. soy sprouts, p. 38-39). Tamari-onion gravy (p. 63). Enchiladas (filled with tofu or soy beans, p. 85). Corn pudding with Baco-Bits (p. 168). Soy flour cakes (pancakes, p. 268).

The chapter titled “Beans and pasta” (p. 124-39) has a section on Soybeans subtitled “Or: How to get protein without really trying.” Recipes and descriptions include: How to cook whole soybeans (with or without pressure). Soybean loaf. Soyburgers. Soy milk. Tofu (curded with lemon juice or vinegar). Tamari and miso. Cheese-soybean soup. Soy nuts. Soy grits. Soy flakes. Soybean cheese spread.

The Glossary (p. 295-97) contains descriptions of gluten, lecithin (from the soybean), miso, protein powder, tamari, seaweeds, tofu. Address: Santa Barbara, California.

1894. Hattyo Miso Kakkyu Goshikaisha. 1976. The history and general condition of Hattyo Miso Kakkyu Goshikaisha. Aza, Okan-dori 69, Hatcho-cho, Okazaki-shi, Aichi-ken, Japan. 4 p. Also published in Japanese as Hatcho Miso no O-hanashi. [Eng]

• **Summary:** This company is said to have been established in 1362 A.D. Reorganized as Hayakawa Kyuemon Shoten Co. in 1932. Name changed to Hatcho Miso Kakkyu Goshikaisha in 1963. Mr. Kyuemon Hayakawa is the 18th proprietor. Many tankas (Japanese odes of 31 syllables) on Hatcho miso were composed by famous poets. The plant is located beside the Yahagi River. They began to sell miso to the Imperial Household in December 1892. In March 1953 Prince Akihito took Hatcho miso on his European tour. Since 1959 six Antarctic expeditions have taken Hatcho with them. Address: Okazaki, Aichi, Japan.

1895. Hayashi, Minao. 1976. Kandai no bunbutsu [Han dynasty civilization and objects]. Tokyo: Tokyo Daigaku, Jimbun Kagaku Kenkyujo. 576 p. [Jap]*

• **Summary:** Bo (1982): This book contains a simple drawing of soy sauce making equipment. It shows a hole in the bottom of an earthenware chuang crock, from which liquid soy sauce can be drawn off. The Chinese also put a basket into the crock to draw off the liquid. This is the strongest known evidence that soy sauce existed at the time of the Han dynasty. But it is better to think that its production stems as far back as the Ch’in (221-206 B.C.) or Warring States (403-221) periods.

Note: Hayashi, born in 1925, is a famous Japanese archaeologist, and art- and cultural historian.

1896. Hesseltine, C.W.; Swain, E.W.; Wang, H.L. 1976. Production of fungal spores as inocula for Oriental fermented foods. *Developments in Industrial Microbiology* 17:101-15. [25 ref]

• **Summary:** Contents: Introduction. Discussion: Inocula for fungi may be prepared in a number of forms or states. Sufu or Chinese cheese. Mold cheese made from milk. Tempeh. Chinese yeast and similar products (incl. raji and murcha). Koji. Industrial production of *Aspergillus oryzae* spores (*tane koji*).

Six desirable inoculum characteristics are discussed. Address: NRRL, Peoria, Illinois.

1897. Hitomi, Hitsudai; Shimada, Isao. 1976. Honchō shokkan [A mirror of food in this dynasty. 5 vols.]. Tokyo: Heibonsha. 18 cm. Translation from the 1697 Chinese-language edition by Isao Shimada of the *Pen chao shih chien*. [Jap]*

• **Summary:** See Hitomi 1695. He died in 1701.

1898. Iwadare, Shoji. 1976. Miso, nattō, tōfu kenkō-hō [Miso, natto, tofu: The way to health]. Tokyo: Yomiuri Shinbun-sha. 238 p. Illust. 18 cm. [Jap]

• **Summary:** Soyfoods Center has done a 10-page typed translation of the natto section of this book. Contents: Legends of natto’s origin: Pinch hitter in times of food shortage, natto’s stringiness surprised people of the Yayoi

period (200 B.C.–A.D. 250), Hachimantaro Yoshiie–Natto’s first public relations agent (1051-1085), calling out “natto, natto” starting in the Edo period (1603), areas where natto is popular today.

The technical revolution in natto production: Pioneers of commercial natto production (Drs. Yabe, Sawamura, Hanzawa), University Natto sold by Hokkaido University, what kind of natto is most delicious?

The effectiveness of natto: The procreative power of natto bacteria promotes long life in people who eat natto, natto can cure diarrhea, natto suppresses typhus and cholera bacteria (in 1936 Dr. Matsumura, a Kyoto University bacteriologist, found on with rabbits that natto bacteria actually killed typhus bacteria), natto does the following—helps people with weak stomach and intestines, prevents intestinal gas, fights cancer (Kameda 1967), prevents radiation harm (via dipicolinic acid, which was first discovered in natto and later found in all bacterial cells; it binds heavy metals like radioactive strontium and expels them from the body), prevents infant milk allergy, contains vitamin B-2 which increases stamina, rejuvenates the cells.

Natto throughout the provinces: Hikiwari natto from Tsugaru, Hikiwari natto from Akita (the birthplace of natto is said to be Oyashin-machi in Yokote city, Akita prefecture; charred soybeans mixed with Yayoi period earthenware pottery from 2,000 years ago have been excavated from ruins at nearby Mt. Komori), Hetttsui natto from Saitama prefecture, Naisho mame from Gunma prefecture, small-bean natto from Mito, Tataki natto from Kyoto, Koru mame from Higo.

Seasonal natto recipes: Spring, summer, fall, winter, all four seasons.

Natto’s springiness surprised people of the Yayoi period (200 BC–250 AD): There are various legends regarding the origin of natto but all begin with the meeting of cooked soybeans and rice straw. No documents record this origin. Yet soybeans and rice straw are known to have existed in Japan since the Yayoi period. Perhaps a piece of rice straw fell into a portion of leftover soybeans. In pit dwellings with rice straw roofs, rice straw littered the floor and the rooms were warm. At the proper temperature (how?) the beans would develop stickiness/strings and a good flavor result. The subtle sweetness of rice straw added to the unique aroma. Some may have eaten the natto sprinkled with salt. Once you’ve tasted natto you can never forget the flavor. Some women may then have incubated natto next to their bodies overnight in bed. The Yayoi era is concealed in the transmission of Hikiwari natto since ancient times in the northeast provinces.

There is also the legend that cooked soybeans were offered at household Shinto shrines on which there was often a rope of braided rice straw (*shimenawa*). (The first character of the word natto means “to offer.”) The bacteria

from the straw may have inoculated the beans; it is generally thought that they were developed in Japan.

Hachimantaro Yoshiie was a general of the Genji clan during the wars of 1051 and 1085. One night during the war the soldiers were cooking soybeans for horse fodder when they were suddenly attacked. They quickly packed the beans into a rice-straw sack (*tawara*), tied the bag to a horse’s back and battled for several days. Finally, the battle over, they took the bundle off the warm horse’s back and opened it to find that the cooked soybeans had fermented to become natto. In the second war, Yoshiie had captured a fortress in Sankanbu Akita in northern Japan. He wanted to give cooked soybeans to the local farmers as a gift but since he was in a hurry and had no other container, he put them in a rice-straw sack and gave it to them. All were surprised when, after several days, the beans gave off a unique odor and were stringy. The farmers liked the flavor and soon adopted natto as a food. Yoshiie, having enjoyed natto, recommended it to his fellow men. The farmers soon learned of this and began producing natto. The tradition has been passed down from generation to generation.

After his conquests in Northern Japan, Yoshiie’s army returned to Kyoto and he taught people along the way how to make natto. The people of Sankanbu in Akita, far from the sea, had little fish or other animal protein in their diet and must have delighted in natto. The route taken by Yoshiie back to Kyoto has been called the ‘natto road.’

Page 141: The word “natto” first appeared in 1286 in the *Shinsaru Gakki*, by Fujiwara Myoe.... Address: Tokyo, Japan. President of Manyu Eiyō KK. Teaching at Nihon Daigaku Daigaku-in and Meiji Daigaku Nōgaku-bu. Prof. at Shobirin Joshi Tanki Daigaku.

1899. Japanese National Miso Assoc. 1976. Miso digest [Miso digest]. Tokyo: Zenkoku Miso Kogyo Kyodo Kumiai Rengokai. 48 p. 13 x 18 cm. [Jap]

• **Summary:** Full of useful and up-to-date information about miso in Japan. On the cover, printed with light purple ink on white, is a fisherman, seated on stylized waves, holding a sea bream under his left arm. Address: Japan.

1900. King, Marilyn; Scott, William. 1976. Food for thought: A fresh food cook book. New York, NY: Universe Books. 153 p. Illust. Index. 23 cm.

• **Summary:** A vegetarian cookbook. In a section titled “Some treasures from the Orient” (p. 132), the author praises and briefly describes tamari and miso.

1901. Lie, Goan-Hong; Oey, Kam-Nio; Prawiranegara, D.D.; Herlinda, J.; Sihombing, G.; Jus’at, I. 1976. Nutritive value of various legumes used in the Indonesian diet. In: M.A. Rifai, ed. 1976. ASEAN Grain Legumes. Bogor, Indonesia: Central Research Institute of Agriculture. 225 p. See p. 183-93.

• **Summary:** This general overview discusses soybeans (*Kacang kedelai*), tempeh, soy milk, “tahu or soycurd” [tofu], kecap, taoco [Indonesian-style miso], soy milk, residue of soy milk or tahu [okara] which may be fermented and sold as oncom. The average nutritional composition of the first 6 products is given. Address: Nutrition Research Inst., Jakarta, Indonesia.

1902. Lin, Florence. 1976. Florence Lin’s Chinese vegetarian cookbook. New York, NY: Hawthorn Books. xix + 236 p. Illust. by Nai Gi. 24 cm.

• **Summary:** Contains a great deal of information on and recipes using soyfoods. Chinese food expert Barbara Tropp says this book has the best glossary available, and has very creative and interesting but drab recipes.

Hoisin sauce is a ground bean sauce to which sugar, garlic, and other flavorings have been added. It is the most popular commercially prepared flavored bean sauce.

Civilized Chinese patterns of eating were established by Confucius. The second great influence was Taoism, which advocated a simple diet, natural foods, and the basic belief that proper eating leads to good health. The third great influence was Buddhism, which was opposed to killing, so advocated a vegetarian diet. The art of vegetarian cookery was initially developed mainly in Buddhist monasteries; later it spread to private homes and restaurants.

To make good meatless broths use soybeans, soy sprouts, tough or wilted vegetables, mushrooms, and / or bamboo shoots. To make soy sprouts, it is best to use new-crop soybeans, which have the highest germination rate. This book contains many recipes that call for sea vegetables. Soy sauce is widely used in Chinese vegetarian recipes.

Chapter 3, titled “Soybeans, soybean products, and other legumes” contains much useful information and recipes. A diagram titled “Chart of soybean products” (p. 53) shows the complex relationships, includes Chinese characters for each product, and shows a few soy products that are not in the Glossary: Fermented bean curd (*Fu ju*), comes in white (*pai*), red (*hung*) and spiced (*la*). The many interesting recipes, each with a Chinese name (with Chinese characters) and an English name include: *Su huo t’ui* and *su chi* (Mock ham), *Su ya* (mock pressed duck), and *Wu hsiang tou fu kan* (Seasoned pressed bean curd).

Glossary (soybeans, soybean products, and legumes, p. 208-13; Chinese characters are given): “Fresh young soybeans—*Mao tou*.” Delicious. They are in season in the early fall. “They come in dark fuzzy pods and are sold by weight. Young soybeans are like corn and should be eaten as soon as they are picked from the plant. They may be cooked with or without the pods.”

“Dried soybeans—*Huang tou*.” Yellow soybeans.

“Soybean sprouts—*Huang tou ya*.” Sold by weight. Best when made in cooler weather. “When bought fresh, they

will keep in the refrigerator for 2-3 days, or longer if kept in a brown paper bag inside a plastic bag.”

“Soybean milk—*Tou chiang*:... usually served hot as a beverage with breakfast.”

“Soybean milk skin—Called by many names [*Fu yi, fu p’i*; see p. 53]. Each region has a different name for it, as does each food processor, and the thickness shape and wrapping may be different.” Four kinds are readily available in Chinese food stores” (1) *Erh chu* is “cut into rectangles 1½ x 4 inches and 1/8 inch thick. The pieces some stacked and wrapped in paper, in half- or one-pound packages.” (2) *Yüan chu* comes in sticks. When reconstituted, its thickness is about the same as *erh chu*. (3) *San pien fu chu* is half-moon shaped. When still soft, it is folded into 6 x 10-inch rectangles then dried. It is thinner than *erh chu*. (4) *Fu yi* “is the thinnest of the bean milk skins. It is paper thin and almost transparent. When dried it is very brittle, and must be handled very gently. It is used mainly to wrap fillings. It comes in stacks of 8-10 sheets...”

“Soybean milk residue—*Tou fu cha*,” [okara]. Can be a delicious ingredient in cooking. “What is not used for food is made into a feed for animals or put into the ground as fertilizer.”

“Curdled soybean milk—*Tou fu hua*.” *Hua* means “flowers.” These very tender curds are “eaten hot with soy sauce or cold with syrup as a snack.” It is “sold only in bean curd factories by the pint.”

“Bean curd coagulant—*Shou shih kao*” [calcium sulfate]: A “white substance which comes in powdered form. It is used to coagulate soybean milk to make *tou fu* (bean curd).”

“Tender soybean curd—*Nen tou fu*: When some water is removed from the curdled bean milk, it is known as fresh tender bean curd. It is cut into squares 4 x 4 by 1½ inches.

“Firm soybean curd—*Lao tou fu*: When a coagulant is added to the boiled bean milk of a different concentration and some of the water is removed, the milk becomes firm bean curd. It is firmer than the tender bean curd and is cut into 3 x 3 x ¾-inch squares.

“Pressed bean curd sheet—*Pai yeh*: Fresh bean curd sheet looks almost like a sheet of unbleached muslin. When it is frozen, the color turns darker, to a light brown. It is made into square sheets of various sizes. It is used to wrap fillings and it is also sometimes cut into short strips and cooked in dishes along with seasoning vegetables. Pressed bean curd sheet is best eaten fresh...”

“Pressed soybean curd—*Tou fu kan*—plain: When even more water is pressed out of firm bean curd, it becomes pressed bean curd... it is almost like a firm cheese.” It may be bought either plain (*Pai tou fu kan*) or seasoned (*Wu hsiang tou fu kan*). “The seasoned curd is cooked in soy sauce and star anise [*pa chiao*], giving it a brown color.” “The white pressed bean curd should be soaked in salt water (made of 1 tablespoon salt to 4 cups water) in a covered container. The seasoned pressed bean curd should be soaked

in salt water and soy sauce. If stored in the coldest part of the refrigerator, they will keep for several weeks.”

“Fried soybean curd—*Yu tou fu*:... The bean curd is cut into 1½ inch cubes and deep fried in oil until a golden crust forms outside, which the inside... remains soft.” It “is sold by weight, usually in half- or one-pound bags.”

“Wheat gluten—*Mien ching*:” (p. 217). “Deep-fried gluten—*Yu mien ching*:” “Fresh or dried wheat gluten—*K’ao fu*:”

Glossary (condiments and seasonings, p. 219-23): “Soy sauce—*Chiang yu*:” The “most important seasoning liquid in Chinese cooking. Comes in light or dark, thick or thin. Dark or thick is *Lao ch’ou*. Light or thin is *Sheng ch’ou*. Soy sauce also comes in different “flavors, such as mushroom soy sauce and, for nonvegetarians, shrimp roe soy sauce. Flavored soy sauces are used mainly for dips and for special flavors in salads, noodles, and as a final touch to a dish.”

“Salted black beans—*Tou shih*:” These beans [fermented soybeans] are “used to flavor bland foods, such as eggplant or bean curd.” They are never eaten alone.

“Brown bean sauce—*Yüan shai shih*:” Made from “fermented soybeans and wheat flour mixed with salt and water. The beans in the sauce may be either ground (to make ground brown bean sauce—*Mo yüen shih*), or left whole. To this basic beans sauce, spice and other seasonings are added [in different proportions], creating many varieties” in “different regions of China. In Szechuan, large amounts of hot peppers and crush Szechuan peppercorns are added; in the northern provinces, garlic and scallions are used;...”

“Hoisin sauce—*Hai hsien chiang*:” A “ground bean sauce to which sugar, garlic, and other flavorings have been added. It is the most popular commercially prepared flavored bean sauce. It is used for cooking, or very often as a dip for deep-fried batter-dipped vegetables.”

“Sesame paste—*Chih ma chiang*:” “Sesame oil—*Ma yu*:”

1903. Nippon Torui Kikin Kyokai. 1976. *Daizu ni kansuru bunken mokuroku* [List of documents on soybeans and soyfoods]. Tokyo: NTKK. Vol. 2, post 1961. 93 p. [Jap] Address: Tokyo, Japan.

1904. Oiso, Toshio. 1976. History of food and diet in Japan. *Progress in Food and Nutrition Science* 2(1):35-48. Address: National Inst. of Nutrition, 1-Toyamacho, Shinjuku, Tokyo, Japan.

1905. Ortiz, Elisabeth Lambert; Endo, Mitsuko. 1976. The complete book of Japanese cooking. Philadelphia, Pennsylvania: M. Evans and Co., Inc.; Dist. by Lippincott. viii + 250 p. Illust. by Marion Krupp. Index. 24 cm.

• **Summary:** A very interesting, well researched, and accurate Japanese cookbook. Each recipe has its Japanese name in large bold letters and a translation directly below in

smaller letters. Soy-related recipes include: Asparagus with malted bean paste (moromi miso & usukuchi shoyu, p. 27). Dengaku (Bean curd with bean paste, p. 28). Stuffed lotus root (with white miso and mustard, p. 30). Noppei-jiru (with namaage or aburaage {fried bean curd}, p. 35). Kenchin-jiru (with tofu and miso, p. 36). Clear soup with okra and bean curd (p. 38). Clear soup with bean curd and wakame (p. 38). Satsuma-jiru (Miso soup with mixed vegetables, p. 45). Miso soup with tofu and shungiku (p. 46). Miso soup with wakame (incl. red and white miso, p. 46). Miso soup with oysters and bean curd (p. 47). Sekihan (pink rice with azuki beans, p. 57). Miso udon (p. 63). Kitsune udon (noodles with aburaage, p. 67). Inari-zushi (fried bean curd stuffed with vinegared rice, p. 79). Sole with bean curd and mushrooms (p. 88). Salmon steamed with bean curd (p. 90-91). Mackerel with red miso (p. 95). Fish marinated in miso (p. 102). Clams in miso, mustard, and vinegar sauce (p. 105). Oysters in vinegared miso sauce (p. 106). Satsuma-age (with mackerel and bean curd cakes, p. 116-17). Oden (with yakidofu {broiled bean curd}, p. 120-21). Kaki no dotenabe (oysters with bean paste, p. 124-25). Yudofu (simmered bean curd, p. 130). Grilled beef with bean paste (p. 146). Nikumiso (chicken and vegetables pickled in bean paste, p. 159). Eggplant with bean paste (p. 163). Green beans with bean paste (p. 168). Daikon with fried tofu (p. 171). Turnips with bean paste (p. 173). Cucumber and soy bean sprouts with sesame seeds (p. 183). Spinach salad with tofu (p. 186).

Bean curd dishes: Fried bean curd (aburaage) with hijiki (p. 187). Sole with bean curd (188-89). Deep-fried bean curd with bonito flakes (p. 190). Kôyadôfu (dried bean curd) with shiitake and vegetables (p. 191). Kûya-mushi (bean curd, chicken, and vegetable custard, p. 192-93). Simmered bean curd and chicken (p. 193). Takara bukuro (treasure bags with aburaage, p. 194). Tofu no shirô-ae (p. 195). Hiya-yakko (garnished cold bean curd, p. 196; Kinugoshi tôfu {silky bean curd} may be used). Chrysanthemum flower bean curd (p. 197). Nabeyaki Denraku [Dengaku?] (bean curd with white and red bean paste, p. 198). Pork with bean curd (p. 198-99). Ni-yakko (bean curd with dried bonito flakes, p. 199). Sokuseki misozuke (instant miso pickles, p. 210). Koshi-an (azuki bean paste, p. 213-15). New year dishes: Kuromame (black soy beans simmered in soy sauce and sugar, p. 220).

Glossary (excellent, p. 228-36)—Soy-related terms: Aburaage, azuki bean, fu (wheat gluten cake), ganmodoki, kinako, kinugoshi tôfu, kôji, koshi-an (powdered azuki paste), kôyadôfu, kôridôfu, kuzuko, miso, misozuke, momen tôfu, moromi miso, namaage, nattô, shôyu, teriyaki, tôfu, umeboshi, usukuchi shôyu, yakidôfu, yuba.

Note 1. This is the earliest English-language document seen (March 2004) that uses the term “silky bean curd” to refer to silken tofu. Address: Both: New York.

1906. Ota, Teruo. 1976. *Shokutaku no hakko shokuhin: subarashii koyo to katei de no tsukurikata* [Fermented foods on your dining table: Their wonderful effect and how to make them at home] Tokyo: Chisan Shuppan. 290 p. Illust. 18 cm. [30+ ref. Jap]*

1907. Quebral, Florendo C.; Cagampang, I.C.; Herrera, W.A.T.; Mendoza, E.R.; Mondragon, R.L.; Payumo, E.M.; Ragus, L.N. 1976. *The Philippines recommends for soybean* 1976. Los Banos, Laguna, Philippines: PCARR. vi + 68 p. Illust. 24 cm. Reissued in 1978. [50 ref]

• **Summary:** Contents. Foreword. Acknowledgment. Introduction. 1. Nutritive value. 2. Utilization. 3. Cost and return analysis of soybean production. 4. Marketing. 5. Cultural management: Selection of varieties, adaptation (soil and climate requirements), land preparation, inoculation, planting, water management, fertilization, crop protection. 6. Post-harvest handling: Threshing, drying, storage. 7. Soybeans in multiple cropping. 8. Seed production. 9. References. Appendices: A. Standardization of soybean. B. Multifarious uses and preparation of soybean and by-products. C. Climate in the Philippines. D. Available inoculants and their distributors. E. Symptoms and first aids for pesticide poisoning. F. Addresses of manufacturers and distributors of pesticides. G. Glossary. Appendix tables. Tables. Figures.

A summary of soybean area, production, and yield in the Philippines, 1959-1975 follows: The number of hectares used for planting soybeans went from 1,690 ha. in 1959 up to 2,200 ha. in 1962, and then decreased annually until it was only 1,240 ha. in 1973. However, a record high of 2,780 ha. was reached in 1974, followed by 2,018 ha. in 1975. Production of soybeans was low in 1959-60, only 571.8 and 981.3 tons, respectively. By 1962, however, production had increased to 2,066.9 tons, but decreased steadily over the years until 1974. In 1974, a maximum of 2,214.0 tons was produced. The corresponding annual yields (tons/ha.) reflect the sharp rise of soybean production in 1961-62 and the ensuing decline of the industry throughout the rest of the 1960s and early 1970s, until 1974, when production soared to new heights. Address: PCARR (Philippine Council for Agriculture and Resources Research), Los Baños, Laguna, Philippines.

1908. Shepard, Sigrid M. 1976. *The Thursday night feast and good plain meals cookbook: Natural foods of the Eastern Hemisphere: China, Japan, Indonesia, India, the Middle East.* Spokane, Washington: New Age Printing. vii + 442 p. Illust. by Margaret V. Putman. Index. 28 cm.

• **Summary:** This is a natural foods cookbook (not vegetarian), with strong influence from East Asia. The author's great aunt was a missionary in China. Pages 5-7 describe how to make a "bean curd box" for making tofu, and then how to make tofu at home. Among the many soy-

related recipes are about 55 for tofu, 7 for miso, 2 for whole soybeans, and many for soy sauce. Pages 431-34 contain a directory of natural foods provisioners and Oriental foods provisioners.

1909. Smartt, J. 1976. *Tropical pulses.* London: Longman. 348 p. Index. [275* ref]

• **Summary:** In the chapter on "Pulses in human nutrition," soya beans are mentioned (p. 92-95) under: Germinated seed. Fermented products: Soy sauce, soya bean paste, tempé, natto and Hamanatto. Extracted pulse proteins: Soya bean curd ('tofu'), soya bean 'milk.' Address: PhD, Senior lecturer in Biology, Univ. of Southampton.

1910. Solomon, Charmaine. 1976. *The complete Asian cookbook.* New York, NY: Summit Books. 511 p. Illust. Color plates. Index. 29 cm.

• **Summary:** This artistic cookbook is loaded with full-page color plates plus a good glossary. Soy-related recipes include: Bean curd omelettes (Tahu telur, from Indonesia, p. 188). Fried bean curd with peanuts (Tahu goreng kacang, from Indonesia, p. 204). Fried bean curd with soy sauce (Tahu goreng kecap, from Indonesia, p. 204). Fried fish with salted soya beans [miso] (Ikan goreng tauceo, from Malaysia, p. 224). Bean curd in salted soya bean paste [tofu in miso] (Taukwa tauceo, from Malaysia, p. 233). Bean curd and bean sprouts [probably mung bean sprouts] (Taukwa dan taueh, from Malaysia, p. 233). Stuffed soy bean cake [with fried tofu] (Tauhu sod sai, from Thailand, p. 316). Glutinous rice and soybean sauce (Nuoc leo, from Vietnam, p. 341). Soup with bean curd (Canh dau hu, from Vietnam, p. 342). Miso tomato sauce (with red misu = red miso, from the Philippines, p. 351). Bean curd in barbecue sauce (Chu hau jeung mun dau fu, from China, p. 414). Bean curd with crab sauce (Hai yook par dau fu, from China, p. 414). Ginger soy sauce (See yau ghung jeung), Chilli soy sauce (See yau laht jiu jeung), Black bean sherry sauce (Dau see sheung jing jeung, with canned salted black beans = soy nuggets), Black bean garlic sauce (Suen tau dau see, with soy nuggets) (from China, p. 431). Sesame seed sauce (Cho kanjang, from Korea, p. 451, with "4 tablespoons light soy sauce"). Dumpling soup (Mandoo, from Korea, p. 453, with "1 square fresh bean curd" and "2 tablespoons light soy sauce"). Soup of soybean sprouts (Kong namul kuk, from Korea, p. 453, with 500 gm soy bean sprouts and 1 tablespoon soy sauce). Rice with fried bean curd (Kitsune domburi, from Japan, p. 460). Steamed egg custard with tofu (Kuya mushi, from Japan, p. 471). Bean paste soup (Miso shiru, from Japan, p. 477). Sushi in fried bean curd (Inari-Zushi, from Japan, p. 480).

Soy-related glossary entries (p. 485-502) include: Aburage. Akamiso. Black beans, salted (Chinese: dow see = salted black beans). Bean curd (Chinese: dow foo; incl. yellow bean curd, dried bean curd, red bean curd). Chinese

bean sauce (ground = *mor sze jeung* or chunky = *min sze jeung* similar to Malaysian *taucheo* or *tauceo*). Dow foo pok (Chinese-style fried bean curd). Miso. Mushroom soy (Soy sauce flavored with mushrooms during the last stage of processing). Soy sauce (light or dark, shoyu, kecap manis). Yellow beans, salted (=salted yellow beans). Yellow bean paste.

Interesting glossary entries (p. 485-502): Aburage, bean curd (fresh, yellow, dried, red), black beans, salted (Chinese: *dow see*; made from soy beans, heavily salted and sold in cans and jars), Chinese bean sauce (ground or chunky, like Malaysian *taucheo* or *tauceo*), fish sauce (Vietnamese: *nuoc mam*. Burmese: *ngan-pya-ye*. Thai: *nam pla*. Tagalog: *patis*). Miso. Mushroom soy (Soy sauce flavored with mushrooms during the last stage of processing). Red misu (See miso). sesame seed (Hindi: *till*. Sinhalese: *thala*. Malay: *bijan*. Chinese: *chih mah*. Japanese: *goma*. Indonesian: *wijen*). Sesame oil (“The sesame oil used in Chinese cooking is extracted from toasted sesame seeds...”). Sesame paste (“Sesame seeds, when ground, yield a thick paste similar to peanut butter. Stores specialising in Middle Eastern foods sell a sesame paste known as *tahini*, but this is made from raw sesame seeds, is white and slightly bitter, and cannot be substituted for the Chinese version—which is made from toasted sesame seeds, and is brown and nutty”). Wakame. Wasabi or wasabe. Yellow beans, salted (Very similar to canned salted black beans, but lighter in color). Yellow bean paste (It is not really yellow, but brown. Sold in cans).

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the word “dau fu” (or “dau-fu”) to refer to Chinese-style tofu.

Note 2. This is the earliest English-language document seen (March 2009) that uses the word “tauceo” to refer to Indonesian-style miso.

1911. Tannenbaum, Steven R. 1976. Production and use of protein concentrates. In: N.S. Scrimshaw and M. Behar, eds. 1976. *Nutrition and Agricultural Development: Significance and Potential for the Tropics*. New York and London: Plenum Press. xxiv + 500 p. See p. 473-86. Chap. 40. With comments by A.D. Odell. Proceedings of the 14th International Biological Symposium, held 2-6 Dec. 1974 at Guatemala City, Guatemala. Proceedings of the 14th International Biological Symposium, held 2-6 Dec. 1974 at Guatemala City, Guatemala. [12 ref]

• **Summary:** Contents: Introduction. Oilseeds: Soybeans, other oilseeds. Marine protein concentrates. Single-cell protein. Use of protein concentrates in food products. Conclusions. References. Comment by Arthur D. Odell of Industrial Grain Products, Montreal, Canada: Vegetable proteins. Marine protein concentrates. Single-cell proteins. Address: Dep. of Nutrition & Food Science, MIT, Cambridge, Massachusetts.

1912. Wang, H.L.; Mustakas, G.C.; Wolf, W.J.; Wang, L.C.; Hesselstine, C.W.; Bagley, E.B. 1976. An inventory of information on the utilization of unprocessed and simply processed soybeans as human food. Peoria, Illinois: USDA Northern Regional Research Center, Interdepartmental Report. AID AG/TAB-225-12-76. 197 p. AID contract report. Undated. No index. 27 cm. Spiral bound. [65 ref]

• **Summary:** Contents: Introduction. Home and village traditional soybean foods by country. 1. Soybean food uses and production in Asia. Soaking dry soybeans. In China: Tou chiang (soybean milk; preparation, ways of serving), tou fu (soybean curd; yen-lu is the Chinese name for nigari), tou fu nao (soft curd), tou fu kan (dry / firm bean curd), chien chang (pressed tofu sheets), yu tou fu (fried tou fu), tung tou fu (frozen tou fu), tou fu pi (protein-lipid film; yuba), huang tou ya (yellow bean sprout or soybean sprout), mao tou (hairy bean, green soybean, or immature soybean), dry soybeans (roasting and frying, stewing and boiling), roasted soybean flour. Fermented soybean foods. Production and consumption of soybeans (China and Taiwan).

Japan: Tofu (soybean curd), kinugoshi tofu, processed tofu products (aburage or age, nama-age and ganmo), kori tofu (dried-frozen tofu), yaki tofu (grill tofu), yuba (protein-lipid film), soybean milk, gô (ground soybean mash), daizu no moyashi (soybean sprouts), edamame (green vegetable soybeans), whole soybeans, kinako. Fermented soybean foods: Production and consumption.

Korea: Tubu (soybean curd), soybean sprouts, whole soybeans (green soybeans, parched or roasted soybeans, boiled soybeans), soybean flour, soysauce, bean paste [Korean soybean miso], natto, production and consumption of soybeans.

Indonesia: Tahu or tahoo (soybean curd), bubuk kedele (soybean powder), tempe kedele, tempe gembus [the name in Central and East Java for okara tempeh], oncom tahu [the name in West Java for okara onchom], other soybean products (soybean sprouts, green soybeans, roasted and boiled soybeans, kecap or soysauce, tauco or bean paste [miso]), food mixtures (Saridele, Tempe-fish-rice or TFR, Soy-rice baby food, soybean residue [okara]-fish-rice), production and consumption of soybeans.

Thailand. Philippines: Soybean sprouts, soybean coffee, soybean cake (made from equal amounts of soybean flour and wheat flour), soybean milk, tou fu and processed tou fu products, production and consumption. Burma. India. Malaysia. Nepal. Singapore. Sri Lanka (Ceylon). Vietnam. West Asia [Middle East; Iran and Turkey]. References—Soybean food uses in Asia.

2. Soybean food uses and production in Africa. Ethiopia: Injera, wots and allichas, kitta, dabbo, dabokolo, porridge. Kenya. Morocco. Nigeria: Whole soybeans, soybean paste,

corn-soy mixtures (soy-ogi). Tanzania. Uganda. Production. References—Soybean food uses in Africa.

3. Soybean food uses and production in Europe [both Eastern and Western]. 4. Soybean food uses and production in Latin America. Argentina. Bolivia. Brazil. Chile. Colombia. Ecuador. Guyana. Paraguay. Peru. Uruguay. Venezuela (fried arepas with textured soy). Mexico: New village process, commercial developments of soy-based food products, Gilford Harrison, Ruth Orellana, Seguras Social. Honduras. Costa Rica. Panama. Dominican Republic. Jamaica. Haiti. Trinidad. References—Soybean food uses in Latin America.

5. Soybean food uses and production in North America. United States: Oriental populations, vegetarian communes, The Farm in Tennessee. Canada. References—Soybean food uses in North America. 6. Soybean food uses in Oceania. Australia. New Zealand. 7. Summary of soybean food uses. Traditional soybean foods: Soybean milk, soybean curd and processed soybean curd products, protein-lipid film, soybean sprout, tempe (tempeh), green soybeans, boiled soybeans, roasted soybeans, soybean flour, soysauce, fermented soybean paste, fermented whole soybeans [Toushih, hamanatto], natto, fermented soybean curd. Experimental soybean foods: Whole soybean foods, soybean paste, soy flour, soy beverage. Production and consumption.

8. Recent simple soybean processes, other than traditional. Simple village process for processing whole soybeans: Equipment, process, sanitation requirements, quality of product, evaluation of product in formulas and procedures for family and institutional use in developing countries. NRRC village process. Foods from whole soybeans developed at the University of Illinois (drum dried flakes, canned and homecooked soybeans, soy beverages and beverage products, spreads, snacks).

Ways of cooking and serving soybeans in the American diet. 9. Industrial processes. Industrial production and selling prices of edible soybean protein products. 10. Barriers to acceptability and utilization of soybeans in food and research recommendations: Availability. Cultural and social factors. Texture. Flavor. Nutrition and food safety. Technology development. Technology transfer. Research recommendations [concerning each of the above barriers].

Concerning Morocco: Cereal-soy blends have been used extensively in Morocco; in fiscal year 1974 some 14.7 million lb were shipped to Morocco. Mmbaga (1975) reported that soy flour is being used in making porridge, with 1 part soy flour to 3 parts maize / corn flour.

Tables show: (1) Soybean production and imports in Taiwan, 1962-1975 (tonnes = metric tons, p. 33). Production rose from a 53,000 tonnes in 1962 to a peak of 75,200 tonnes in 1967, then fell to 61,900 tonnes in 1975. Imports skyrocketed from 62,400 tonnes in 1962 to a record 827,300 tonnes in 1975. (2) Consumption of soybean foods

in Taiwan, 1964-1974 (kg/capita/year, p. 34). Total soybean foods not including tofu rose from 1.08 kg in 1964 to a peak of 2.61 kg in 1972 then fell to 1.99 kg in 1974.

Consumption of tofu (80% water) rose from 18.75 kg in 1964 to a peak of 33.89 kg in 1972, then fell to 32.04 kg in 1974. (3) Supply and disposition of soybeans in Japan, 1971-1974 (p. 49). Total supply is beginning stocks, plus domestic production, and imports. Total disposition is crushing, plus traditional foods and feed. In 1974 imports accounted for 87.5% of the supply, and crushing accounted for 71.0% of the disposition. (4) Whole soybeans used in the production of traditional foods in Japan, 1970-74 (tonnes / metric tons, p. 50). Tofu and others rose from 508,000 in 1970 to 539,000 in 1974. Miso rose from 177,000 in 1970 to 192,000 in 1974. Shoyu rose from 13,000 in 1970 to 14,000 in 1974. (5) Defatted soybean meal used in the production of traditional foods in Japan, 1970-74 (tonnes / metric tons, p. 51). Shoyu rose from 163,000 in 1970 to 176,000 in 1974. Tofu and others was constant at 130,000 from 1971 to 1973. Miso decreased from 4,000 in 1970 to 2,000 in 1974. (6) Production of traditional soybean foods in Japan, 1970-74 (tonnes / metric tons, p. 52). Tofu and others rose from 1,867,800 in 1970 to 2,264,900 in 1973. Shoyu rose from 1,334,1000 in 1970 to 1,455,800 in 1974. Miso rose from 552,200 in 1970 to 587,200 in 1974. (7) Production and food use of beans [various types] and consumption of some soybean products in Korea, 1964-1967 (p. 56-57). In 1967 consumption (in tonnes / metric tons) was: Bean curd 290,000. Bean sprouts 270,000. Bean sauce 69,700. Bean paste 27,700. Total: 11.6 kg per capita per year. (8) Soybean production in Indonesia, 1960-1974 (p. 65). It rose from 442,862 tons in 1960 to 550,000 tons in 1974. (9) Consumption of soybeans in various parts of Indonesia in 1970 (p. 66). (10) Production of soybean foods in the province of Central Java, 1968-1972 (tons, p. 67). Kecap rose from 914,695 in 1968 to 1,524,000 in 1972. Tahu decreased from 18,570 in 1978 to 17,000 in 1972. Tempe rose from 506 in 1968 to 39,000 in 1972. (11) Area planted to soybeans and total soybean production in Thailand, 1964-1974 (p. 70). Area rose from 213,000 rais (6.25 rais = 1 ha) in 1964 to 1,016,000 rais in 1974. Production (in metric tons) rose from 31,300 in 1964 to 252,400 in 1974. (12) Utilization of soybeans by soybean-consuming countries, 1964-66 (based on FAO 1971 Food Balance Sheets, 1964-66 average, p. 150). The countries leading in per capita consumption (kg/person/year) are: China (PRC) 6.7. Japan 5.1. Korea(s) 5.0. Singapore 4.3. Indonesia 2.8. Malaysia 2.6. Taiwan (ROC) 1.1. (13) Amounts of cereal-soy blends distributed under Title II, Public Law 480 in fiscal year 1974 (p. 152-155). (14) U.S. exports of full-fat soy flour, 1974-75 (p. 156).

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word “tubu” to refer to Korean-style tofu. Address: Northern Regional Research

Center, Agricultural Research Service, Department of Agriculture, Peoria, Illinois 61604.

1913. Winarno, F.G.; Hardjo, S.; Rumawas, F. 1976. The present status of soybean in Indonesia. Bogor, Indonesia: FATEMETA, Bogor Agriculture University. xxiii + 128 p. 29 cm. [7 ref]

• **Summary:** The best and most comprehensive survey up to this time on the subject, it was done as part of the 1974 Industrial Census of the Central Bureau of Statistics. Full of valuable statistics and tables. Contents. Preface. Summary. List of tables. List of figures. I. Introduction. II. Objectives and survey methods: A. Objectives. B. Survey methods. III. Cultivation, product handling and protection: A. Botany of the soybean. B. Varieties. C. Growth requirements. D. Agronomy of soybean. E. Crop Management. F. Harvesting and product handling. IV. Production: A. Harvested acreage, production and average soybean yield in Indonesia. B. Center production areas. C. Harvested acreage of soybean versus other food crops. D. Factors affecting soybean production. V. Farm management and soybean marketing in Indonesia: A. Farm management. B. Marketing of soybean. VI. Soybean utilization (p. 52): A. Soybean products: Introduction, yuba, sere (from Bali: cooked whole soybeans, mixed with onions, hot pepper, turmeric, salt, and coconut presscake; molded into patties, sun dried, then deep fried), soybean milk, tofu (coagulated with *biang* or *sioko* {calcium sulphate}), soybean sprouts (*tauge*), soybean powder (soybeans that have been cooked, dried, dehulled, and pounded), soybean mixtures, kecap (Indonesian soy sauce), oncom (fermented soybean product, red or black), tauco (Indonesian-style miso), tempe. B. Soybean utilization: Utilization by farmer (in each of 6 provinces and total), utilization by processor (tempe, tofu, kecap, miscellaneous), census conducted by Central Bureau of Statistics, conversion factor for soybean products. C. Consumption of soybean and its processed products (by province). D. Other components. Appendixes.

Tables in body of text: (1) Brief description of recommended soybean varieties. (2-3). Insecticides used against *Agromyza* and *Phaedonia inclusa*. (4) Soybean harvest seasons in Indonesia (major harvest months, by province). (5-8) Harvested acreage, production, and average soybean yield during 1950-73, 1960-74, and in Java-Madura (1967-71, 1972, 1973, and 1974). (9) Soybean acreage in Java-Madura. (10) Major production areas in Java-Madura, and average 5-year yield, 1965-69. (11) Harvested acreage of soybeans vs. other crops in Java-Madura, 1971-72. (12) Production cost and value per hectare of soybeans. (13) Major trading and harvest months. (14-15) Percentage of farmer's share and marketing cost of the trade price in various provinces. (16) Percentage of farmer's share of the trade price. (17) Soybean utilization by

farmers, 1975-76. (18-21) Production/consumption of tempeh, tofu, kecap, tauco, taugé, yuba, and sere.

(22-29) Raw material utilized by small-scale processors and by soybean home industries in Java and Jakarta. (30-31) Value of raw material and end products of small-scale industries over 3- and 12-month periods. (32) Conversion factor of soybean products to raw material. (33-36) Average daily consumption per capita of soybean and its process products at villages in Lampung, Yogyakarta, East and West Java, and in 4 other provinces. Address: FATEMETA, Bogor Agricultural Univ., Indonesia.

1914. Winarno, F.G.; Hardjo, S.; Rumawas, F. 1976. Kecap (Indonesian-style soy sauce) (Document part). Bogor, Indonesia: In: Winarno, F.G.; et al. 1976. The present status of soybean in Indonesia. FATEMETA, Bogor Agriculture University. xxiii + 128 p. 29 cm. [7 ref]

• **Summary:** The description of kecap (p. 58-59) states: Boil soybeans until tender. Drain and spread over round, shallow woven bamboo trays. Place these in a kecap fermentation room. Leave for 5-7 days until the soybeans are well covered with and bound together by a mycelium of *Aspergillus* and/or *Rhizopus* molds. Then dry the trays and soybean koji in the sun. Break up the soybean koji, place it in salt brine in deep earthenware jars, and place the jars in the sun to ferment for one week or up to one year.

When the mash is ready, boil it, adding clean water if necessary. Remove the liquid using a sieve; this is the first extraction, which is the best quality. Repeat this process 3 to 5 times, adding a brine solution the same salt concentration as the original mash. Each extraction, which will be lower in quality than the one before it, is kept separate to provide different qualities of end product.

As the final step for each different extraction, bring it to a boil and add some ingredients such as palm sugar [jaggery], caramel, or coconut sugar. Other ingredients such as fish extract or bouillon are also occasionally added. Filter the liquid through a piece of cheese cloth, bottle and store.

Page 67: Most kecap is made in small scale enterprises, employing on average 10-11 laborers and working 23.7 days/month. The average kecap maker uses 13,390 kg of soybeans annually to produce kecap with a value of 6.3 million rupiahs. A table (p. 68) gives details by province.

Page 80: Kecap is a very minor soy product in Indonesia. Only 0.2% of all soybeans used to make foods in Indonesia are used to make kecap. The largest percentage of soybeans are used to make tempeh (66%), tofu (33%), and tauco (0.3%).

Pages 93-94: Ingredients required to make kecap include palm sugar, cane sugar, molasses, salt, wheat flour, cassava flour and spices. Palm sugar is the most important sweetener. "Depending on the concentrations of sugar and salt, there are two types of kecap available in the market, sweet and salty kecap." Wheat flour and cassava flour serve

as thickening agents, but they are not used by all kecap makers. No information is given on the types or amounts or of spices and herbs used in making kecap. Address: FATEMETA, Bogor Agricultural Univ., Indonesia.

1915. Hawaiian Miso & Soy Co. 1976? Hawaiian miso (Leaflet). 1714 Mary St., Honolulu, Oahu, HI 96819. 4 panels each side. Undated. Front and back. Each panel: 24 x 10 cm.

• **Summary:** The front panel, in full color, states: "Miso, butterfish misozuke, butterfish kasuzuke [in sake lees], guava jelly & jam, omusubi kororin (with freeze dried pickled plum with kelp, or pickled vegetable). To the left a color photo shows each of these products in its package. Two more panels, in red, blue, and black on white, contain a flowchart showing the natural process (no preservatives added) used to make miso. This Maru-Hi brand miso has been made in Hawaii since 1936. The 4th panel on this side shows distributors of these products.

Contents of the back 4 panels (in black and white): What is miso? (by Shurtleff and Aoyagi). Brief history of Hawaiian Miso & Soy Co. Three basic uses for miso (recipes): Miso soup, Fish misozuke, Miso sauce for sea foods, vegetable dressing, and cooked tako (squid). Recipe for butterfish (black cod) misozuke. Address: Honolulu, Oahu, Hawaii. Phone: 841-7354.

1916. Muso Shokuhin. 1976? Distributors of Muso foods in Canada, South America, Europe, and Australia (Leaflet). Osaka, Japan. 1 p. Undated.

• **Summary:** The name, address, and phone number of each company is given. Canada: Lifestream Natural Food, Inc. (British Columbia). Manna Foods, Inc. (Ontario).

South America: Zentro Macrobiotico de Venezuela.

Europe: Societe Traplun (France). Unimave S.C.A.R.L. (Portugal). Urtekram (Denmark). V.Z.W. Voedselcollectief (Belgium). Manna (Holland). Centro Dietetico Macrobiotico Italiano (Italy). Centro Macrobiotico Italiano (Italy). Harmony Foods (England). Kameo (France). P.V.B.A. Lima (Belgium). Moder Jord & Söner (Sweden). Reformhaus Rahlstedt (West Germany). Schwarzbrot (West Germany). Dr. Naturopata SER (Spain). Eduardo Galamba De Sa Pires (Portugal).

Australia: True Health Aides Pty. Ltd. (Sydney). Address: 1-43 Otedori, Higashi-ku, Osaka, Japan. Phone: (06) 945-0511.

1917. *Sunday News (Lancaster, Pennsylvania)*. 1977. Miso. It's not only different... It's delicious. Jan. 2. p. A-12. Based on the pamphlet What is Miso? by Shurtleff & Aoyagi. [2 ref]

• **Summary:** Describes the various types of miso and contains 7 miso recipes. Photos show: (1) Akiko Aoyagi mixing a batch of peanut miso. (2) Apple slices on a plate,

each topped with a dollop of miso mixed with peanuts and honey.

1918. Ethical Society. 1977. Soybeans and the world food crisis: A lecture demonstration by Bill Shurtleff and Akiko Aoyagi (possibly the foremost authorities on the use of soybeans for food in the West) (Poster). 9001 Clayton Road, St. Louis, Missouri. 1 p. Jan. 13. 30 x 26 cm. Black on brown.

• **Summary:** The lecture will be held at 7:00 p.m. at the Sunshine Inn Restaurant, 8½ Euclid. Tickets are \$1.00 in advance, \$1.50 at the door. Learn about tofu, miso, and "why tofu is a viable alternative to help solve the world food crisis." Address: St. Louis, Missouri.

1919. *Albuquerque Tribune (New Mexico)*. 1977. Program set on preparing soybean foods. Jan. 18. p. B-2.

• **Summary:** "The secrets of preparing foods with protein-rich miso and tofu will be demonstrated from 7 to 9 p.m. Jan. 27 at First Unitarian Church, 3701 Carlisle NE," Albuquerque, [New Mexico] by Bill Shurtleff and Akiko Aoyagi. The lecture is sponsored by Jemez Bodhi Mandala Zen Center at Jemez Springs. A photo, which was sent out with a news release, shows Shurtleff and Aoyagi.

1920. DeMasters, Carol. 1977. Research to feed the world. *Milwaukee Sentinel (Wisconsin)*. Jan. 20. p. 1, 7.

• **Summary:** About the work of William Shurtleff and Akiko Aoyagi, directors of the New-Age Foods Study Center, with tofu and miso. "The world food crisis is their raison d'être." They are "ardently devoted to finding alternative protein sources to those commonly used in the world—chiefly meat, poultry, and fish." Contains 4 recipes plus a photo of the two with their Book of Tofu.

Note: This is the earliest English-language document seen (Nov. 2003) that contains the term "alternative protein" or "alternative protein sources." Address: Sentinel Food Editor.

1921. Goldman, Sherman. 1977. Charles Atlas versus the Bodhisattva: An interview with Bill Shurtleff and Akiko Aoyagi. *East West Journal*. Jan. p. 32-35.

• **Summary:** An in-depth discussion of the work of Shurtleff and Aoyagi with tofu, miso, and tempeh in the USA, Japan, and Indonesia. Photos show: Shurtleff speaking into a microphone. Akiko Aoyagi smiling. Shurtleff and Aoyagi standing next to their white 1975 Dodge Van on the side of which is written: "New-Age Foods Study Center—Tofu & Miso America Tour, 1976-77."

1922. Kagawa, Ryo. 1977. Shokuhin seibunhyō [Food composition tables for Japan]. Tokyo: Joshi Eiyo Daigaku Shuppan-bu. 145 p. Jan. 15 x 22 cm. [Jap]

• **Summary:** For tables of information on soybeans and soyfoods, see p. 21-22. Includes Kinako, soymilk, regular tofu, kinugoshi tofu, fukuro-iri tofu, yaki-dofu, abura-age, namaage, ganmodoki, kori-dofu, yuba, okara, natto, hamanatto, miso, red miso, light yellow salty miso, red salty miso, soybean miso, powdered miso. Address: Japan.

1923. Shurtleff, William. 1977. Soy foods: Protein source of the future—now. Paper presented on 1976-77 Tofu & Miso America Tour. 16 p. transcript. Unpublished manuscript. [5 ref]

• **Summary:** This is the transcript of a speech given on 15 Jan. 1977 in Kansas, but a similar speech was given by Shurtleff at 70 public programs throughout the USA. Contents: World hunger and its causes: Population growth, affluence and the feedlot system, land misuses and international food exploitation. Vegetarian diets and a solution to degenerative diseases and food problems. Soybeans in America. Soybeans and soyfoods in East Asia: Tofu, miso, tempeh, shoyu. The future of soybeans on the planet. Address: New-age Foods Study Center, 790 Los Palos Dr., Lafayette, California 94549. Phone: 415-283-3161.

1924. Sunwheel Foods Ltd. 1977. Importers and distributors (Ad). *Spiral (London, England)*. Winter. p. 24-25. Jan.

• **Summary:** Sunwheel Foods Ltd. are importers and distributors of six varieties of Sea Vegetables, Tamari Soya Sauce, and three varieties of Naturally Fermented Miso Soya Bean Paste. This is ad is part of an article titled “Vitamin B-12 and the vegetarian,” by John Jenks. Address: 12 Orpheus St., London SE5 8RR, England.

1925. *Well Being (San Diego, California)*. 1977. Don’t miss it! Tofu & Miso Tour comes to San Diego Jan. 30. No. 16. Local Pages, p. 1. Jan.

• **Summary:** William Shurtleff and Akiko Aoyagi will present a program on tofu and miso on Sunday, January 30, at 7 p.m. at the Ocean Beach Community School, 4741 Santa Monica, San Diego. Admission will be \$1.00. A list shows the places where tickets may be purchased in advance. For further details, call *Well Being Magazine* at 234-2211.

1926. Rice, William. 1977. Building a philosophy around the whole grain. *Washington Post*. Feb. 10. p. E1, E6.

1927. Oblinger, Jan. 1977. Tofu, nutty burgers served on ‘veggie line’ at UMO. *Bangor Daily News (Maine)*. Feb. 16. p. 6.

• **Summary:** “Students at the University of Maine at Orono are eating strange things these days. And they’ve never been healthier. The Office of Dining Services is making available to students a vegetarian menu in addition to the regular meat

and potatoes fare served in the campus’ dining halls.” Included on the unique menu are tofu burgers—“a small part of the college’s campaign to get more vegetables and less meat to those students who want it.” Many students who eat at the veggie line do not consider themselves vegetarians; they just like the food. The Bear’s Den, a student restaurant at the Memorial Union, now offers a tofu salad sandwich, as well as a meatless “nutty burger” based on cottage cheese.

“According to UMO’s assistant manager of dining services, Anne Johnson, tofu is purchased from Peter and Judy Beane of the No-moo Dairy in South Portland [Maine], the only source north of Boston [Massachusetts]... Some of the other hard-to-find items are bought through a Boston company named Erewhon.”

“The university learned about tofu in a book by Bill Shurtleff and Akiko Aoyagi, who demonstrated cooking with tofu and miso at the college in November. They showed how to prepare tofu or miso for less than eight-and-a-half cents a pound.”

Contains “veggie” recipes for Nuttyburger, and Maveric Chili (with 1 cup whole soybeans). Five photos show students “dining on the tofuburger,” which contains soybean curd, carrots, onions, and sunflowers. Most said the flavor “was hard to describe. Several said it tasted a lot like a fish sandwich.”

Note: This is the English-language document seen (Jan. 2007) that contains the term “tofuburger” (or “tofuburgers”). Address: Daily News Staff.

1928. Nakadai, Tadanobu; Nasuno, Seiichi. 1977. The action of acid proteinase from *Aspergillus oryzae* on soybean proteins. *Agricultural and Biological Chemistry* 41(2):409-10. Feb. [14 ref]

• **Summary:** Until recently it has long been considered that large amounts of free amino acids are liberated from proteins by the hydrolytic action of acid protease from *Aspergillus oryzae*. However recent reports indicate that the liberation of free amino acids in miso brewing is due to the action of carboxypeptidase of the mold. This investigation clearly indicates that “free amino acids are liberated from soybean protein by the hydrolytic action of both acid proteinase and acid carboxypeptidase of *A. oryzae* in the miso brewing, but not liberated by the hydrolytic action of only acid proteinase.” Address: Noda Inst. for Scientific Research, Noda, Chiba, Japan.

1929. Shurtleff, William; Aoyagi, Akiko. 1977. Excerpts from: *The Book of Miso*, and *The Book of Tofu. Macrobiotic (The) (Chico, California)* No. 117. p. 18-21. Feb. [2 ref]

Address: 790 Los Palos Dr., Lafayette, California 94549.

1930. *Kenko na Katei (Healthy Household, Tokyo)*. 1977. Daizu tanpaku ga sekai o sukuu. Zenbei nanajū kasho de

miso to tōfu kōenkai [Soy protein can save the world: Miso and tofu lectures at 70 places throughout America]. March 1. p. 6. [Jap]

• **Summary:** Photos show: Shurtleff and Aoyagi standing by their white Dodge van on their Tofu & Miso America Tour. Holding a plate containing a cake of freshly made tofu. A map shows the route taken by their tour. Address: Japan.

1931. Eden Foods. 1977. Spring and summer catalog 1977. 4601 Platt Rd., Ann Arbor, MI 48104. 53 p.

• **Summary:** On the cover are bags, trays, and scoops filled with natural foods. Page 25 states that Eden now sells Tamari Soy Sauce (Eden, or Marushima), plus Hacho, Mugi, and Kome Miso. This is the first catalog in which Erewhon's name is not listed after any tamari or miso products.

On page 25 is the first record of "Eden Tamari: Natural Shoyu" which is sold in 8 oz, pints, quarts, or 1 gallons cans. A photo shows the quart bottle with label, and the dispenser. It is "made from whole soybeans and naturally fermented in wooden kegs for 30 months... The Muso Shokuhin Company has been supplying the macrobiotic community of the United States with tamari, miso and sea vegetables for the last ten years. All of Eden's Japanese imports are supplied by Muso." Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

1932. Kiuchi, Kan; Ohta, Teruo; Ebine, Hideo. 1977. Accumulation of diglycerides and monoglycerides and decrease of unsaturated fatty acids in miso. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 32. p. 262-67. March. [8 ref. Eng; jap]

• **Summary:** Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 23:455-60 (1976)—as "Studies on lipids of soybean foods. II." Address: National Food Research Inst., MAFF, Koto-ku, Tokyo, Japan.

1933. Kiuchi, Kan; Ohta, Teruo; Ebine, Hideo. 1977. [Changes in lipid components of miso-dama koji]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 32. p. 268-73. March. [6 ref. Jap; eng]

• **Summary:** Reprinted from *Hakko Kogaku Zasshi (J. of Fermentation Technology)* 53(12):869-74 (1975). Address: National Food Research Inst., MAFF, Shiohama, Koto-ku, Tokyo, Japan.

1934. *Hartford Courant (Connecticut)*, 1977. Feminine topics, by Jacqueline (Ad). April 24. p. 12E.

• **Summary:** "Oriental cooking fans—your ingredients are waiting at the Epicure Grocery in the heart of Farmington! Szechuan peppercorns, Star anise, chili paste with garlic,

Tempura batter mix, cellophane and Chinese noodles, yellow bean paste, fish sauce, fresh ginger in rice wine and rice sticks. Also on hand—Blessings Sweet & Sour Sauce." Ask for free recipe booklet.

1935. Shurtleff, William; Aoyagi, Akiko. 1977. Koji & koji starter for miso and shoyu. Lafayette, California: New-age Foods Study Center. 6 panels. April 26. Catalog.

• **Summary:** This is a revised, expanded, typeset (by Jan Herhold), and illustrated (by Akiko Aoyagi) version of a similar leaflet first printed in June 1976. Printed with black ink on saffron colored (yellowish orange) paper, it begins by noting: "Now you can easily make your own miso or natural shoyu (soy sauce) at home using either high-quality, reasonably-priced koji or koji starters available in the United States; illustrated instructions are given in *The Book of Miso*.

Part I describes two types of koji: Firm granular koji, and soft mat koji. Part II describes nine different types of koji starter for which are sold in three textures: Spore-powder texture, whole-grain texture, and meal texture. The nine different types of koji starter are for: Red miso, barley miso, soybean miso, mellow barley miso, sweet white miso, light-colored miso, fast white miso, amazake or pickling, or shoyu. All the above are made by the prestigious Japan Brewing Company (*Nihon Jozo Kogyo*), which employs only the very finest traditional, natural methods.

Sources of ready-made koji: Miyako Oriental Foods (Los Angeles, California), Westbrae Natural Foods (Emeryville, California), Chico-San Food Co. (Chico, California), and Janus Natural Foods (Seattle, Washington). Sources of koji starter: Westbrae Natural Foods sells the 5 most widely used koji starters; all are imported from Mitoku Trading Co., Tokyo, Japan. Address: Lafayette, California.

1936. *Mother Earth News*, 1977. Plowboy interview: Bill Shurtleff and Akiko Aoyagi. No. 44. March/April. p. 8-18.

• **Summary:** A wide-ranging discussion of Shurtleff and Aoyagi's work with soyfoods in America and Japan. Contains a color photo of the two standing next to the white Dodge van in which they are doing a Tofu & Miso America Tour.

1937. Iso, James Y. 1977. Japan looks to the U.S. for more food-quality soybeans. *Foreign Agriculture*. May 16. p. 6, 16.

• **Summary:** When the People's Republic of China (PRC) cut back on its soybean exports last year because of a poor domestic harvest and disruption of marketing channels by the devastating earthquake, Japanese manufacturers of miso, tofu, and other native soy foods were among the first to feel the pinch, having traditionally bought large quantities of PRC soybeans. Their shift could lead to perhaps a 100,000-ton gain in U.S. exports of food-quality soybeans to Japan.

"In 1976, the U.S. shipped about 520,000 tons of these food-use soybeans to Japan out of total U.S. soybean sales there of 3.2 million tons and Japan's total soybean imports of 3.5 million. Japan received another 132,000 tons of food beans from the PRC and a few thousand tons from other supplying countries.

"Adding to this a domestic production of 60,000 tons puts Japan's total soybean use in traditional foods last year at about 750,000 tons.

"Each year, Japan uses about 720,000 tons of soybeans in traditional foods, including roughly 350,000 tons of tofu (bean curd), 180,000 of miso (bean paste), and 70,000 of natto (fermented beans). The remaining tonnage goes into other native products, such as kinako (processed [dry roasted] beans) and frozen tofu, and into fresh soybean consumption.

"Manchurian beans, produced in the colder regions of North China (usually north of 43° latitude), have long been considered the best tasting for fermented foods like miso and natto."

"Outside of the PRC, the varieties of beans preferred by the food manufacturers are found in colder climates, such as Canada and the northern regions of the United States."

Several "Japanese trading firms involved in importing food-type beans have come to prefer soybeans produced in Indiana, Illinois, Ohio, and Michigan. These beans, known among the trade as IOM (Indiana, Ohio, Michigan) beans, made up close to 500,000 tons of the food beans imported by Japan last year and go largely into tofu and related foods." Note: This is the earliest English-language document seen (Jan. 2008) that uses the abbreviation "IOM" in connection with soybeans.

"Around 55,000 tons of 'identity-preserved' varieties also were imported last year." Producers are looking for a large bean with a white hilum and high protein and carbohydrate content. All food beans must be #1 grade quality. Talks with miso/natto manufacturers have revealed that U.S. varieties Amsoy, Corsoy, Kanrich, and Beeson meet this general description. However, a bean with all the desired features comparable to the PRC's, particularly as related to taste, is not as yet commercially available in the U.S. Address: Foreign Market Development, Oilseeds and Products, Foreign Agricultural Service.

1938. Hayashi, Kazuya; Mizunuma, Takeji; Yokotsuka, Tamotsu. Assignor to Kikkoman Shoyu Company, Ltd. (Japan). 1977. Process for producing koji for fermented food products. *U.S. Patent* 4,028,470. June 7. 7 p. Application filed 8 June 1976. [2 ref]

• **Summary:** "Producing koji for fermented food products by modifying an unmodified koji-substrate composed of a vegetable protein material and a vegetable carbohydrate material, inoculating a koji mold in the resulting modified koji-substrate, and cultivating it, wherein said cultivation is

carried out in the presence of 0.1 to 1.2% by weight, based on the water content of the modified koji-substrate, of acetic acid added. This process is suitable for use in the manufacture of fermented foods such as soy sauce, miso, or sake." Address: 1. Kashiwa, Japan; 2. Noda, Japan; 3. Nagareyama, Japan.

1939. Erewhon, Inc. 1977. Erewhon. Summer 1977. Boston, Massachusetts. 23 p. Catalog and price list.

• **Summary:** On the front cover is a photo of a rose flower and leaves. On the first page, Jeffrey Flasher (apparently the new president) writing about this catalog, notes: "Erewhon's summer catalog of 1973 listed approximately 450 products, of which 30% were either grown, manufactured, or repackaged in the Northeast. Although last summer's catalog offered nearly 1,000 products, fully 25% were either grown, manufactured, or repackaged in the Northeast... Between July and December Erewhon will be introducing 50 to 75 new items produced in the Northeast." "No sugar or preservatives added to any food in this catalog." Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: 617-542-1358.

1940. Erewhon Trading Co., Inc. 1977. Erewhon: Our traditional foods are the foods of the future. *East West Journal*. June. p. 67. [3 ref]

• **Summary:** This informative advertisement is largely about miso. Erewhon imports Hacho [Hatcho] miso from Japan; the source company first made Hacho miso in 1337. "We are grateful to Muso Shokuhin Company of Japan, a macrobiotic natural foods company, for originally distributing hacho miso to the United States through Erewhon and for the work they continue to do in developing sources of high-quality organic foods for Japan and the rest of the world. Erewhon is also grateful to Mr. A. Kazama of Mitoku Company, Ltd., of Tokyo, for encouraging the development of large-scale miso production without the use of chemical additives to speed the aging process. When Mr. Michio Kushi, the founder of Erewhon first convinced Mr. Kazama of the sizable market for naturally produced miso, he initiated a search which resulted in the president of Sendai Miso Company agreeing to produce enough to keep up with the demand.

"Recently a brown rice (genmai) miso has been added to the Erewhon line of imported foods. Based on the traditional techniques and standards, this new variety was two and a half years in development before Mr. Ko Haga, brewmaster of Sendai, produced what he considered a successful brown rice koji, or starter."

"Sendai uses a regionally grown rice, called Sasanishiki, which is highly regarded in Japan, and the soybeans used are the 'Prize' variety grown organically in Minnesota by farmer Ed Ricke."

Last year 85 tons of traditionally produced miso were imported into the United States from Japan. Erewhon now has 3 locations in the USA, in addition to the headquarters and main warehouse at 33 Farnsworth St.: 342 Newbury St., Boston, Massachusetts 02115; 1731 Massachusetts Ave., Cambridge, MA 02138; 1 Civic Center Plaza, Hartford, Connecticut 06103. Address: 33 Farnsworth St., Boston, Massachusetts 02210.

1941. Kushi, Michio. 1977. *The book of macrobiotics: The universal way of health and happiness*. San Francisco, California: Japan Publications, Inc. x + 182 p. June. Illust. Index. 26 cm.

• **Summary:** Many followers of macrobiotics consider this to be the author's classic work on the subject. The preface tells briefly how Mr. Kushi got involved with macrobiotics and came to America. He began to lecture in New York in 1955. His teachings began to spread, especially after 1963. By Feb. 1977 he has conducted 5,000 lectures and seminars in America and Europe. One Appendix is titled "A Historical Review of the Macrobiotic Movement in North America" (p. 168-71).

Concerning soyfoods, the book discusses miso (p. 51-52), protein (p. 69), tamari (p. 51-52, 131-33), tekka (52, 133), and tofu plaster (130; "more effective than an ice pack to draw out fever"). Concerning smoking, the author believes that it "does not contribute to produce lung cancer" if the smoker eats a proper traditional (macrobiotic) diet (p. 115).

"In 1949, Michio Kushi, during his postgraduate studies at Tokyo University, was inspired by the teaching of George Ohsawa. He came to the United States in connection with the World Federalist movement. Besides him, Aveline Tomoko Yokoyama in 1951, Herman Aihara in 1953, Cornelia Chiko Yokota, Romain Noboru Sato and his brothers Junsei Yamazaki, Shizuko Yamamoto, Noboru Muramoto and others came to the United States during the following years. After experience with various enterprises they respectively began to teach macrobiotics, mainly in New York. George and Lima Ohsawa also visited America from Europe to conduct seminars. Macrobiotic summer camps, restaurants, and food stores began to operate on a small scale with many American people. Educational activity was organized as the Ohsawa Foundation at that time. However, on the occasion of the Berlin Crisis in 1961, the major active people related to the macrobiotic movement made an 'exodus' to Chico, California. Robert Kennedy, Lou Oles, Herman Aihara and others began Chico San, Inc., as a food manufacturing and distributing company, and established the Ohsawa Foundation in California. Later, the Foundation moved to Los Angeles, its main activity being publishing George Ohsawa's works. The San Francisco center was established. At a later date, Jacques and Yvette de Langre, Joe and Mimi Arseguel and

many others shared educational activities in California and other areas of the West Coast.

"In the meantime, after educational activity in New York, besides several seminars on Martha's Vineyard and various local colleges, Michio and Aveline Kushi moved to Boston in order to concentrate on education for the younger generations. They organized the East West Institute in Cambridge which later moved to Wellesley and then transferred to Boston. To meet the increasing demand for good food, a small basement food store, Erewhon, was opened. Erewhon was managed and developed over the years by the Kushis, Evan Root, William Tara, Roger Hillyard and Paul Hawken. Erewhon was followed by a small restaurant, Sanae, managed at different times by Evan Root, Tyler Smith, and Richard Sandler. Lectures by Michio Kushi continued for five years in Arlington Street Church, Boston, with repeated visits to many major U.S. cities. Erewhon developed into a larger store, on Newbury Street in Boston, and added its wholesale operation from a warehouse on the South Shore, Boston Wharf, distributing constantly to an increasing number of natural food stores. The warehouse facility has been managed by Paul Hawken, William Garrison, Tyler Smith, and currently Jeff Flasher and other associates as well as the Kushis. Erewhon further established a Los Angeles store which also developed into a wholesale operation—managed over the years by the Kushis, William Tara, Bruce Macdonald, and currently by John Fountain and Thomas DeSilva...

"The *East West Journal*, a monthly newspaper, established in 1970—managed over the years by Ronald Dobrin, Jack Garvey, Robert Hargrove, and currently Sherman Goldman, Lenny Jacobs and other associates—is continuing to introduce to the wider society, the new vision for the present and future world. Educational activities directly concerned with teaching and other educational projects have been administered since 1973 by the East West Foundation, a nonprofit educational organization managed by the Kushis, Edward Esko, Stephen Uprichard, and other associates." Address: Boston, Massachusetts.

1942. Shurtleff, William; Aoyagi, Akiko. 1977. *Cooking: From The Book of Miso*. *East West Journal*. June. p. 76-77. [1 ref]

Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

1943. Harwood, Maureen. ed. 1977. *The Lifestream cookbook*. Richmond, BC: Lifestream Natural Foods Ltd. 52 p. Illust. by Elizabeth Scott. Index. 22 cm.

• **Summary:** Contents: Nutritional information: Protein and the vegetarian diet. Grains. Whole grain pasta. Beans. Tofu. Corn tortillas. Flakes and cereal. Whole grain flour. Seeds and sprouts (Alfalfa seeds, mung beans, lentils, sunflower seeds—hulled, chick peas, fava beans, soybeans, wheat

kernels, alfalfa seeds in Vita salad, sesame seeds in gomasio, pumpkin seeds), Nut butters and miso (incl. Miso honey dressing, Miso soup). Cashew butter & Engevita yeast. Dried fruit. Carob. Address: [Richmond, BC, Canada].

1944. Williams, Karen. 1977. Tofu, miso: Japanese keys to high protein. *Chronicle (Willimantic, Connecticut)*. Aug. 11. p. 10. [2 ref]

• **Summary:** A full-page review of *The Book of Tofu* and *The Book of Miso* by Shurtleff and Aoyagi. Contains 10 recipes. Address: Lifestyle Editor.

1945. Neurath, G.B.; Duenger, M.; Pein, F.G.; Ambrosius, D.; Schreiber, O. 1977. Primary and secondary amines in the human environment. *Food and Cosmetics Toxicology* 15(4):275-82. Aug. [17 ref]

• **Summary:** Nitrosamines are reaction products from nitrite and amines. Some salt-pickled foods contain considerable amounts of amines, and thus some nitrosamines may form during processing. But very small amounts of amines were found in rice, wheat, and soybeans used as raw materials for making shoyu and miso.

There are primary and secondary amines. The main secondary amines are dimethyl- and diethyl-amine. 80% of all N-nitroso compounds tested in animal species have been found to induce tumors. Nitrosamines can be found only in the presence of secondary and tertiary amines on the one hand, and nitrite or nitrate ions or nitrogen oxides on the other. High levels of both are found in red radishes, spinach, and green salad. Address: Microanalytical Lab., 2000 Hamburg 56, Hexentwiete 32, Federal Republic of Germany.

1946. Shurtleff, William; Aoyagi, Akiko. 1977. Miso production: The book of miso volume II. Lafayette, California: New-Age Foods Study Center. 62 leaves. Aug. 16. Illust. by Akiko Aoyagi Shurtleff. No index. 28 cm.

• **Summary:** Contents: Introduction. 1. Setting up a traditional shop—Tools and ingredients: The miso shop building, larger equipment (most vats and other wooden equipment are made of Japanese cedar, *sugi* = *Cryptomeria japonica*, which is durable in the presence of water, heat, and salt, and has a pleasant fragrance), smaller tools, ingredients. 2. Making red miso in a traditional shop. 3. Making red miso in a semi-traditional shop. 4. Making Hatcho and Mellow white miso in semi-traditional shops. 5. Making koji starter in a semi-traditional or modern shop. 6. Making light yellow miso in a modern factory. Appendixes. A. People interested in starting commercial miso shops in North America. B. Sources of miso making equipment and ingredients. C. About the New-Age Foods Study Center.

Note 1. This is the first book published by New-Age Study Center (renamed Soyfoods Center in 1980).

Note 2. This is the earliest English-language book seen (March 2009) devoted entirely to commercial miso production. Address: P.O. Box 234, 1336 Bickerstaff St./Rd., Lafayette, California 94549.

1947. Leonard, Thom. 1977. Re: My work with making miso. Letter to William Shurtleff at New-Age Foods Study Center, Sept. 20. 2 p.

• **Summary:** “I completely agree about Westbrae being the most interested in and knowledgeable in miso of any company in America. Their encouragement and interest has been of great help to me. Where am I with miso making now? Jim Hemminger sold his house and tofu shop and moved to his father’s farm in Ohio. So that’s over. The miso made this year [in Fayetteville, Arkansas] is stored in a shed until next year.

“I’m out of money and am now working on an organic vegetable farm in the Yakima Valley, Washington. Late fall or winter I will begin working at Baldwin Hill Bakery in western Massachusetts. This will be a full-time job that pays real money.”

Tom is experimenting with corn and wheat miso. In Aug. 1977 he received a complimentary copy of *Miso Production* from William Shurtleff, together with a letter.

Note: This is the 2nd earliest document seen (April 2009) concerning Thom Leonard and miso. He and Richard Kluding founded the Ohio Miso Company, which began selling their miso in March 1979. This company was later acquired by South River Miso Co. in Conway, Massachusetts. Address: 219.5 S. Beech, Toppenish, Washington 98948.

1948. East West Foundation. 1977. Food policy recommendations for the United States: Statement of Michio Kushi, September 21, 1977. 359 Boylston St., Boston, MA 02116. 32 p. 28 cm.

• **Summary:** On September 21, 1977, Michio Kushi and several associates, including Dr. Robert Mendelsohn, M.D., met in Washington with members of the White House staff. The meeting, which lasted approximately two hours, began with a 45 minute presentation of a series of recommendations by Michio Kushi, a description of the activities and goals of the East West Foundation (founded 1972), and a history of Erewhon (fiscal 1978 sales estimated at \$10 million). An outline of the East West Journal’s position on various political, social, and economic applications of the national food policy was also included in the meeting’s agenda.

Recommendations for seasoning foods and to aid digestion of grains, was traditional foods such as pickled vegetables and naturally fermented soy bean products (such as soy sauce, miso, tempeh, etc.). Note: Dr. Mendelsohn died in about May 1988. Address: Boston, Massachusetts. Phone: 617-536-3360.

1949. Erewhon, Inc. 1977. Erewhon. Harvest 1977. Boston, Massachusetts. 23 p. Catalog and price list.

• **Summary:** On the front cover is a photo of a table dispenser of Erewhon Natural Shoyu (but the neck band reads "Erewhon Tamari Soy Sauce"). On the first page, Jack Garvey (apparently the new president) writes about the meaning of the word "Erewhon," which derives from a book of that title written by Samuel Butler. Address: 33 Farnsworth Street, Boston, Massachusetts 02210. Phone: 617-542-1358.

1950. Vogt, Pat. 1977. Cook with soybeans? Why not? *Michigan Farmer (Duluth, Minnesota)*. Oct. 1. p. 32.

• **Summary:** Len and Irene Stuttman of Lansing, Michigan, run a company named INARI, Ltd., which offers two products: roasted soy nuts and raw edible soybeans for home cooking. Soy nuts are available plain, salted, or flavored (jalapeno). The Stuttmans feel that "soybeans are a healthy food, not a health food." Len Stuttman, a native of Chicago (Illinois), is a former lecturer, film maker, film producer, and agricultural advisor. He says that after testing 77 soybean varieties, he has found only a few that really tastes good.

The Stuttmans' interest in soybeans extends back to their college days at Michigan State University. After their marriage, Len became an agricultural information advisor to the Indian Council of Agricultural Research. They also traveled to other countries, studying nutritional feeding programs. While living in India and traveling abroad, they discovered that relief foods sent by the USA and United Nations were often incompatible with the local culture and eating habits. Since nuts are prized by most cultures, the Stuttmans decided to try using soy nuts, which are very nutritious and rather inexpensive.

Len Stuttman, who has been involved in several businesses, including a TV show in Chicago, has kept his interest in community development and nutrition. In 1975 he accepted a job at American Soybean Association headquarters in Hudson, Iowa, but resigned in early 1976 and returned to Lansing where he began work on starting INARI Ltd., a family operation to make soy nuts. That company is now in business.

"Tofu, a bean curd, and Miso, a bean paste, are available in some Lansing area stores." Recipes are given for: Soybean meatloaf (with a lb lean beef + 1.3 cups cooked soybeans). New fashioned soybean pie. Soybean sandwiches.

1951. Dee, Joel. 1977. Re: Interest in importing instant miso soup mix from Japan. Letter to William Shurtleff at New-age Foods Study Center, Oct. 24. 3 p.

• **Summary:** This letter follows our telephone conversation of Oct. 20. Asks Shurtleff in Japan to help set up the project.

Address: CeDe Candy, Inc., P.O. Box 271, Union, New Jersey 07083. Phone: (201) 964-0660.

1952. *Los Angeles Times*. 1977. Japan: Top market for U.S. soybeans. Oct. 27. p. H25.

• **Summary:** Japan now imports 55,000 tons of soybeans a year from the United States, which makes Japan the leading customer for U.S. soybeans in the world, according to USDA figures.

The Japanese use soybeans in a variety of traditional foods including "tofu (soybean curd of which 10 million bricks are sold daily in Japan), miso (fermented soybean paste, the basis for the soup served in most Japanese restaurants [and homes]), aburage (deep-fried tofu) or natto (fermented cooked soybeans), kinako (roasted soybean powder) and shoyu (soy sauce). The use of soy in bread, biscuits and noodles consumes 15,220 tons of soybeans each year."

Exports of soybeans and soy products (such as soybean oil and meal) have played an important positive role in the U.S. balance of trade and the U.S. farm economy.

1953. Katzen, Mollie. 1977. The Moosewood cookbook: Recipes from Moosewood Restaurant, Ithaca, New York. Berkeley, California: Ten Speed Press. 222 p. Illust. Index. 28 cm.

• **Summary:** One of the best and most popular American vegetarian cookbooks of the 1970s and 1980s, this hand-lettered work contains 7 tofu recipes, and 1 each using miso and whole dry soybeans, as follows: Shopping list (p. xiii) describes tamari and tofu ("Tofu is soybean curd. It resembles very soft cheese and has a mild flavor. It is an excellent protein food and very charming. Buy it by the pound or individual cake at oriental food shops. Also, some supermarkets are beginning to carry tofu now. It's usually in pound packages in the produce department."). Miso soup (p. 9; with chunks of tofu). Perfect protein salad (p. 49; uses whole dry soybeans and wheat). Tofu salad (p. 52). Gado-gado (p. 104; an Indonesian dish with a spicy peanut sauce and tofu chunks, either raw or sauteed in oil with sesame seeds). Ode to Chang Kung (p. 126; with tofu). Szechwan eggplant & tofu (p. 135; an entree). Sauté, Chinese style (p. 149; with tamari-ginger sauce and tofu [though tofu was accidentally omitted from the list of ingredients]).

Note: Molly writes in 1990: "I first learned about tofu in 1970 from a Chinese restaurant in San Francisco. They called it 'bean cake' soup. I was intrigued—and not disappointed. The current edition of this book has a revised index, correcting the error relating to page 221." Address: Moosewood Restaurant, Dewitt Building, Ithaca, New York.

1954. Tofu Shop (The). (Renamed Far Pavilions in late 1979). 1977. October. New soyfoods restaurant or deli. 116 N. Oak Street (Box 69), Telluride, CO 81435.

• **Summary:** Menu and promotional brochure for The Tofu Shop. 1978, Sept. 6 panels. On the front panel is a stunning circular photo of Rocky Mountains rising out of a misty valley. Around it is written: “The Tofu Shop” (above). “Juice bar–Dining–Catering–Wholesale kitchens” (below). Below that on the front panel: “116 North Oak Street. Next to the opera house. Telluride, Colorado. Call ahead for take-out: 728-9940.”

Entrees (Served with soup or salad–\$0.65 extra): Stir-fried tofu, rice & vegetables. Burgers: Soy burger, Tofu burger, Okara burger. Stuffed pitas: Grilled tofu & vegetables, Guacamole and tofu. Burritos: Spicy tofu and rice filling with guacamole. Smoothies: Carob, honey, soymilk with banana. Carrot sunny shake. Other refreshments: Miso broth, soymilk, whey from making tofu. Salads: Full plate tofu & guacamole salad, Tofu and vegetable salad, Okara salad. Fresh tofu. Grilled tofu. On the back panel is a lively, writhing dragon plus: “Uncompahgre Natural Foods. Producers and suppliers of specialty foods for Colorado’s western slope.” Talk with Matthew Schmit, founder and owner of The Tofu Shop. 2002. Sept. 19. Matthew estimates that this undated menu was first printed in about Sept. 1978.

Menu for Far Pavilions. 1979, undated. 8 panels. Green on tan paper. “International vegetarian cuisine. Welcome hospitality. Located below the opera house. For details, see separate Menu entry for Far Pavilions.

Shurtleff & Aoyagi. 1982. Report on Soyfoods Delis, Cafes & Restaurants. p. 3. Started in Oct. 1977 by Matthew Schmit. Later run by Catherine Peterson.

Note: This is America’s second “soy deli,” offering a host of highly creative and delicious recipes. Address: Telluride, Colorado. Phone: 728-4441.

1955. Chang, C.H.; Lee, S.R.; Lee, K.H.; Mheen, T.I.; Kwon, T.W.; Park, K.I. 1977. Fermented soybean foods. Paper presented at Symposium on Indigenous Fermented Foods, Bangkok, Thailand. Summarized in K.H. Steinkraus, ed. 1983. Handbook of Indigenous Fermented Foods. New York: Marcel Dekker, Inc. ix + 671 p. See p. 465-66, 482-87.

• **Summary:** Contents: Korean soy sauce: Kanjang (is made by primitive methods in the home), steps in preparation, microbiology, biochemical changes (p. 465-66). Korean doenjang and kochujang: Description (Soy sauce and miso were introduced to Japan, from Korea, during the Nara period {645-793 AD}), patterns of consumption (Daily per capita consumption of doenjang and kochujang are estimated to be about 15 gm and 10 gm, respectively), steps in preparation (utensils, substrates, essential microorganisms), control of process, biochemical changes, economics of production and distribution.

Note: This is the earliest English-language document seen (March 2009) that uses the word “kochujang” to refer

to Korean-style red pepper and soybean paste (miso).

Illustrations show: (17) Flow sheet: Production of Korean doenjang (soybean paste). Soak soybeans, boil, mash, form into balls, wrap in rice straw, and incubate under rafters until covered with mold (*meju*). Crush, mix with salt brine, and ferment for 6 months to obtain doenjang. (18) Flow sheet: Production of Korean kochujang (soybean paste). Soak soybeans, boil, mash, suspend in rice straw sacks until overgrown with mold (*meju*). Crush, sun-dry, and pulverize to obtain 10 liters of crushed *meju*. Add cooked gelatinous rice flour (2 liters), hot pepper flour (0.5 to 0.7 liters), kanjang (Korean soy sauce), dried beef, jujube flour, honey, and salt brine. Mix. Ferment for 2 months to obtain kochujang.

A table (p. 487) shows the amino acid composition of doenjang. Address: 1. Food & Nutrition Dep., Sacred Heart Women’s Univ., Bucheon, Kyungki-do, South Korea.

1956. Chu, F.S. 1977. Mycotoxin problems in indigenous fermented foods and new methods for mycotoxin analysis. Paper presented at Symposium on Indigenous Fermented Foods, Bangkok, Thailand. Reprinted in K.H. Steinkraus, ed. 1983. Handbook of Indigenous Fermented Foods. New York: Marcel Dekker, Inc. ix + 671 p. See p. 637-52. [35+ ref]

Address: Dep. of Food Microbiology and Toxicology, Univ. of Wisconsin, Madison, WI 53076.

1957. Ebine, Hideo. 1977. Japanese miso. Paper presented at Symposium on Indigenous Fermented Foods, Bangkok, Thailand. Summarized in K.H. Steinkraus, ed. 1983. Handbook of Indigenous Fermented Foods. New York: Marcel Dekker, Inc. ix + 671 p. See p. 468-79. Address: Applied Microbiology Div., National Food Research Inst., Ministry of Agriculture, Forestry, and Fisheries, 2-1-2 Kannondai, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 300-21 Japan.

1958. Eden Foods. 1977. Fall and winter catalog 1977–1978. 4601 Platt Rd., Ann Arbor, MI 48104. 81 p.

• **Summary:** On the cover are bags, trays, and scoops filled with natural foods. Page 23 shows that Eden now sells nigari, a solidifier for making tofu, in 6 oz or 5 lb sizes. Hacho, Mugi, and Kome miso are now sold under the Eden brand. Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

1959. Hesseltine, C.W.; Wang, H.L. 1977. Contributions of the Western World to knowledge of indigenous fermented foods of the Orient. Paper presented at Fifth International Conference on Global Impacts of Applied Microbiology, Nov. 1977, Bangkok, Thailand. 32 p. In: Steinkraus 1983, p. 607-22. [28 ref]

• **Summary:** Contents: Introduction. 1. Training of teachers and technicians. 2. Scientific aspects of the fermentation process. 3. Breeding of microorganisms for strain improvement. 4. Introduction of pure culture strains. 5. Substrate changes caused by enzymes. 6. Studies on the nutritional value of fermented foods. 7. New uses for traditional fermentations. 8. Developing an awareness of the importance of studying indigenous foods. References cited.

Photos show: (1) The interior of a Japanese sake brewery (wood block print, from Atkinson 1881). (2) Dr. Ryoji Nakazawa (1878-1974). (3) Dr. K. Saito, who discovered the tempeh fungus, *Rhizopus oligosporus*. (4) *Rhizopus oligosporus* (Saito 1905). (5) Ragi (Eijkman 1894). (6) Chinese yeast cakes (Eijkman 1894). (7) The complete kit for making tempeh, from Farm Foods, Summertown, Tennessee (shows brown paper ag, with large front and back labels). Address: NRRC, Peoria, Illinois 62604.

1960. Ismail, M.S. 1977. Accelerated fermentation of fish-soy paste and fish-soy sauce by using *Aspergillus oryzae* NRRL 1989. Paper presented at Symposium on Indigenous Fermented Foods, Bangkok, Thailand. Summarized in K.H. Steinkraus, ed. 1983. Handbook of Indigenous Fermented Foods. New York: Marcel Dekker, Inc. ix + 671 p. See p. 526-30.

Address: Dep. of Food Science, Univ. of Agriculture, P.O. Box 203, Sungai Besi, Selangor, Malaysia.

1961. Leonard, Thom. 1977. Making brown rice miso in Arkansas. *Soycraft (Lawrence, Kansas)* 1(1):1. Autumn.

• **Summary:** Contents: Introduction. Equipment. Ingredients. Marketing.

“On April 5, 1977, we packed our first 35 gallon cedar vat with brown rice miso. A month and a half later, we now have over a half ton of one-year miso aging in the vats, have sold 150 pounds of ‘mellow’ brown rice miso, and have another 300 pounds of mellow miso in the vat. Though miniscule [minuscule] as compared to the production of even a small Japanese shop, we have been able to learn much about the basic process of making miso.”

1962. Saono, S.; Brotonegoro, S.; Basuki, T.; Sastraatmadja, D.D.; Jutono, -; Gandjar, I. 1977. Indonesian tauco. Paper presented at Symposium on Indigenous Fermented Foods, Bangkok, Thailand. Summarized in K.H. Steinkraus, ed. 1983. Handbook of Indigenous Fermented Foods. New York: Marcel Dekker, Inc. ix + 671 p. See p. 479-82. Address: Treub Lab., National Biological Inst., Bogor, Indonesia.

1963. Steinkraus, Keith H. 1977. Enhancement of food quality by fermentation. *New York State Agric. Exp. Station, Nutrition Council Report* No. 26. p. 21-25. Nov. [13 ref]

• **Summary:** Contents: Introduction. Meat-like flavor from vegetable proteins. Meat-like textures on vegetable substrates. Quick-cooking foods. A method for increasing the protein content of high starch substrates. Utilization of food and agricultural wastes to produce human food. References. Address: Cornell Univ.

1964. **Product Name:** Fried Rice & Tofu Sandwich (In a Chapati). Renamed Brown Rice & Tofu Sandwich in late 1978 by Chris Smith.

Manufacturer's Name: Wildwood Natural Foods.

Manufacturer's Address: Sleeping Lady Cafe, 58 Bolinas Rd., Fairfax, CA 94030.

Date of Introduction: 1977. November.

Ingredients: Brown rice, tofu, tamari, alfalfa sprouts, spread (sesame butter, barley miso, scallions), seasonal vegetables (carrot or cucumber), lettuce, whole grain chapati.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Unrefrigerated and perishable.

New Product–Documentation: Talks with Paul Duchesne between 8 Oct. 1988 and 18 Aug. 1989. His Brown Rice & Tofu Sandwich (BRTS) was developed in Fairfax in late October or early November 1977. He made 200 of them at home and sold them to participants at a macrobiotic seminar led by Michio Kushi in Marin County. Donna Gayle helped him make them.

In Jan. 1978 he started making these sandwiches at the Sleeping Lady Cafe in Fairfax (Marin County) and selling them at the Good Earth Natural Food Store in Fairfax. He bought his tofu (made by Quong Hop & Co. in South San Francisco) at Good Earth. In Feb. 1978 he began to distribute them to many natural food stores throughout Marin County. One of America's early second generation tofu products, the sandwich was made as follows: Saute brown rice with onions, sesame oil, and tamari. Boil a cake of tofu in water with a little salt, then slice it into 4 pieces each about 3 inches square and 1/8 inch thick. Onto a whole wheat chapati (not bread) spread a mixture of sesame butter, barley miso, and scallions. Over that spoon on the fried rice, then place on top one slice of tofu, a long strip of parboiled carrot, some alfalfa sprouts, and romaine lettuce leaf. Fold over two edges of the chapati, wrap it in shrink wrap, and sell it fresh (unrefrigerated) in a wicker box with a calligraphy sign (that showed how to eat it like a banana) on the front counter of natural- and health food stores. One key to the flavor was sesame-miso spread, learned from George Ohsawa's 1966 book *Zen Cookery* #203 “Miso Spread.”

While in California in 1978 Duchesne and Chris Smith gave their recipe and production techniques to Joe Nixdorff, who made the Samurai Hero in Berkeley, to Roy Steevensz, who made the BRTS in Los Angeles.

In September 1978 Paul went to Boston to study macrobiotics, so he gave his Fairfax sandwich business

(which still had no name) to Chris Smith, a local friend interested in macrobiotics. Paul had first offered his business to Ron Harris, but Ron declined since he was getting involved in seitan. The California Department of Health came in helped Smith's unlicensed food operation to get licensed. A month later, in October 1978, Chris stopped frying the brown rice and renamed the product, coining the now-famous name "Brown Rice & Tofu Sandwich." At the same time he named his business Wildwood Natural Foods.

The product's original Label (sent by Paul Duchesne. 1989. Aug. 11 and printed before Wildwood was incorporated) is 4.5 by 2 inches. The maker is Wildwood Natural Foods at 58 Bolinas Rd. The ingredients, listed above, are the same as those in the original 1977 edition, but cucumber was never used. The color is black on goldenrod yellow (THE counter-culture color of the late 1970s). Paper. The text reads: "Fresh daily. All organically grown ingredients (whenever possible). Seasonally cooked, spring water. Enjoy your meal... Unwrap one end and peel down as you eat." In Boston, Duchesne started Rice House, where he continued to make the sandwich.

In May 1979 Duchesne and Chris Smith traded places and companies. Paul took over the company he had started originally (now named Wildwood) in Fairfax. For more details see Development of the Brown Rice and Tofu Sandwich, and early history of Wildwood Natural Foods (Duchesne 1988).

Leviton. 1981. Soyfoods. Winter. p. 61. "Putting tofu in the lunch boxes of America." "Wildwood produces a line of eight packaged vegetarian sandwiches including *Brown Rice and Tofu Sandwich* (with vegetables in a whole wheat bun)..."

Note 1. This is the earliest record seen (April 2001) concerning Wildwood Natural Foods.

Note 2. This is the earliest commercial soy product seen (April 2001) with the word "Sandwich" in the product name. by Wildwood Natural Foods.

1965. Winarno, F.G.; Muchtadi, D.; Laksani, B.S.; Rahman, A.; Swastomo, W.; Zainuddin, D.; Santaso, S.N. 1977. Indonesian taoco. Paper presented at Symposium on Indigenous Fermented Foods, Bangkok, Thailand. Summarized in K.H. Steinkraus, ed. 1983. Handbook of Indigenous Fermented Foods. New York: Marcel Dekker, Inc. ix + 671 p. See p. 479-82. Address: Faculty of Agricultural Engineering and Product Development, Bogor Agricultural Univ., Jalan Gunung Gede, Bogor, West Java, Indonesia.

1966. Yamada, Koichi. 1977. Recent advances in industrial fermentation in Japan: Bioengineering report. *Biotechnology and Bioengineering* 19(11):1563-1621. Nov. [28 ref]

• **Summary:** Table 1 shows the production of miso, shoyu, and vinegar in Japan from 1968 to 1974. Production of both miso and shoyu have increased only slowly. Miso production increased from 538,156 tonnes (metric tons) in 1968 to a peak of 590,137 tonnes in 1973, then fell slightly to 587,228 tonnes in 1974.

Shoyu production increased from 1,026,643 kl (kiloliters) in 1968 to a peak of 1,274,987 kl in 1973, then fell slightly to 1,199,155 kl in 1974.

Advances in miso production: Halophilic (salt tolerant) bacteria such as *Pediococcus halophilus* and *Streptococcus faecalis*, and halophylic yeasts such as *Saccharomyces rouxii*, *Torulopsis versatilis*, and *Torulopsis etchellsii* were shown to be the more important strains. Pure cultures of these strains were used as starters for miso fermentation. Since much time, work, and skill are required to make traditional koji, commercial enzyme preparations with high polypeptidase activity and high proteinase activity are used for evoking the full flavors of miso.

Advances in shoyu production: A new type of cooker which can cook soybean meal at high temperatures for short times is now being used, and advances in koji technology have raised the enzymatic activity and lowered the level of contaminating microorganisms. As a result, nitrogen utilization has been raised to 90% from 60% in 1945 and the time required for ripening the moromi mash has decreased to 4-6 months from one year or more in the past.

Table XIX titled "Production of microbial enzymes in Japan" shows 7 major and 8 minor commercial enzyme preparations, the number of makers of each, the output per year (in tonnes and yen), and the main microorganisms used to make each. By far the most important enzyme in terms of tonnage is α -amylase (11,000 tonnes, 10 makers, *Aspergillus oryzae*), followed by protease (1,050 tonnes, 18 makers, *Aspergillus oryzae*), then glucoamylase (400 tonnes, 8 makers, *Aspergillus niger*). Address: Univ. of Tokyo and Sapporo Beverages Ltd., Tokyo 153, Japan.

1967. Robinson, R.J.; Kao, C. 1977. Tempeh and miso from chickpea, horse bean, and soybean. *Cereal Chemistry* 54(6):1192-97. Nov/Dec. [6 ref]

• **Summary:** The authors made soybean tempeh, chickpea tempeh, and horse bean tempeh from 0.2 to 0.4 cm diameter grits. The soybean tempeh had the best flavor, texture, and color.

They also made soybean miso, chickpea miso, and horse bean miso. Compared with soybean miso, chickpea miso's color was darker, while horse bean miso's is lighter. Address: Dep. of Grain Science & Industry, Kansas State Univ., Manhattan, KS 66506.

1968. Saono, S.; Brotonegoro, S.; Abdulkadir, S.; Basuki, T.; Jutono, -; Badjra, I.G.P. 1977. Microbiological studies of tempe, kecap, and taoco. II. Qualitative amyolytic and

proteolytic activities of the isolates from various products from west Java. Progress Report Subproject III.b. ASEAN Project for Soybean and Low-Cost High Protein Foods. Jan-Dec. 1977. 8 p. [5 ref]

• **Summary:** An analysis is given of the types of bacteria, yeasts, and molds found in tempeh, kecap, and taoco. Scientific names of these microorganisms are not given. For example, in tempeh, molds consistently gave the highest number of viable cultures on any of the test media employed, followed by yeasts and bacteria in that order. Address: 1-4. Treub Lab., the National Biological Inst., Bogor; 5-6. Faculty of Agriculture, Gadjah Mada Univ., Yogyakarta.

1969. Kolb, H. 1977. Herkoemmlische Verfahren zur Nutzung von Soja im asiatischen Raum [Traditional processes for using soya in Asia]. *Alimenta* 17:41-45. [35 ref. Ger]

• **Summary:** Discusses each of the following foods briefly and gives sources of further information: Kinako (roasted soy flour), soymilk, yuba, tofu, kori tofu (dried-frozen tofu), aburaage, namaage, kinugoshi tofu, sufu, soy cheese (Western style), soy yogurt, ganmodoki, natto, Hamanatto, koji, tempeh, miso, tao-tjo [Indonesian-style miso], kochujang, shoyu, and ketjap. Address: Institut fuer Lebensmitteltechnologie, Frucht- und Gemuesetechnologie, Technische Universitaet Berlin, Koenigin-Luise-Strasse 27, D-1000 Berlin 33, West Germany.

1970. Kushi, Aveline. 1977. Macrobiotic cooking with miso. *Order of the Universe (Boston, Massachusetts)* 5(11):26-31.

• **Summary:** Excerpts from Aveline's new book, including 7 recipes and her illustration of a miso keg.

"When we first came to this country about 25 years ago, there were almost no good-quality whole foods available... We lived in New York near Columbia University. We could order one keg of Hacho [Hatcho] Miso once or twice a year from Japan in order to obtain the essential nutrients necessary for those who don't eat very much animal food. I am very grateful for Kiyuemon Hayakawa's several-hundred-year tradition of strong miso in Japan.

"Today, the importation of miso from Japan to the United States must be at least 10,000 times what it was 25 years ago. We are able to enjoy high quality miso like Barley Miso, Rice Miso, Brown Rice Miso, and others...

"I began writing this book about miso seven years ago; I now think it has fermented enough. During those seven years I gained a little more confidence through experience in teaching cooking, and also miso has become more familiar to the Western public."

1971. Matsumoto, I.; Imai, S. 1977. [Utilization of halophilic *Torulopsis* in red miso making]. *Nippon Jozo*

Kyokai Zasshi (J. of the Society of Brewing, Japan) 72(1):74-77. [18 ref. Jap]*

• **Summary:** A mixed culture of *Saccharomyces rouxii* and *Torulopsis versatilis* (10:1) produced a red miso superior in quality to the ordinary red miso incubated with only *S. rouxii*. Address: Niigata-ken Shokuhin Kenkyusho, Niigata, Japan.

1972. **Product Name:** [Salt-Free Rice Miso (Jepron Light Yellow Plain, or Regular Flavored; Dark Brown Rich Flavored)].

Foreign Name: Mu-En Miso, Jepuron.

Manufacturer's Name: Nagano Miso Co.

Manufacturer's Address: Tenjin 3-9-29, Ueda-shi, Nagano-ken 386, Japan.

Date of Introduction: 1977.

New Product-Documentation: Japanese Patent. 1981. No. 1,048,853; U.S. Patent. 1983. No. 4,311,715. Letters from Hideki Oka of Nagano Miso Co. to William Shurtleff of Soyfoods Center. 1981. Feb. 9 and March 16. He encloses samples of three types of miso and asks for comments, which are: "We liked III Hi-Jepron 5% NaCl best, II Jepron Salt-free second best, and I Hi-Jepron salt free third best."

Nagano Miso Co. 1982. "Jepron, a protein rich food material." Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 230, 258. "In 1977 Nagano Miso Co. introduced the world's first salt-free miso; in 1978 it started to be marketed as Jepron."

1973. Nagano Miso Co. 1977. Composition of salt-free miso, red and yellow, including free and total amino acids. Tenjin 3-9-29, Ueda-shi, Nagano-ken 386, Japan. 4 p.

• **Summary:** The light yellow variety contains 53.4% moisture, 14% protein, 7.2% oil, 1.5% fiber, 1.2% ash, 19.3% sugars, 3.4% ethanol, and 85.9 mg/100 gm salt. Ph is 5.7. 193.5 calories per 100 gm. Address: Nagano-ken, Japan.

1974. Okada, Y.; Takeuchi, T. 1977. [Salt-restricted miso: A review of the literature]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 72(3):181-84. [54 ref. Jap]*

• **Summary:** The high salt content of miso limits its use. Production of a low-salt miso using ethanol as a preservative is proposed. Address: Aichi State Food Research Inst., Nagoya, Japan.

1975. Staron, T. 1977. Obtention des protéines à partir des graines oléagineuses par des méthodes microbiologiques [Obtaining protein from oilseeds using microbiological methods]. In: T. Staron, ed. 1977. *Les Nouvelles Sources de Proteines Alimentaires. Recueil de Travaux et de Conférences*. Luce: INRA. See p. 137-63. [42 ref. Fre]*

• **Summary:** A review of some important East Asian fermented foods, including miso, shoyu, and tempeh.

Address: INRA, Stat. Antibiotiques, Bioconversions, Luce.

1976. Talking Food Company. 1977. Miso & tamari (shoyu): Foods steeped in culture (Leaflet). Charlestown, Massachusetts. 4 panels.

Address: Charlestown, Massachusetts 02129.

1977. Chang, K.C. ed. 1977. Food in Chinese culture: Anthropological and historical perspectives. New Haven, Connecticut, and London: Yale University Press. 429 p. Illust. Index. 24 cm. [200+ ref]

• **Summary:** One of the finest scholarly overviews of food in Chinese culture ever written, with each chapter, arranged chronologically by dynasty, written by an expert in the field. Contents: Introduction, by K.C. Chang. 1. Ancient China, by K.C. Chang. 2. Han, by Ying-shih Yü. 3. T'ang, by Edward H. Schafer. 4. Sung, by Michael Friedman. 5. Yüan and Ming, by Frederick W. Mote. 6. Ch'ing, by Jonathan Spence. 7. Modern China: North, by Vera Y.N. Hsu and Francis L.K. Hsu. 8. Modern China: South, by E.N. Anderson, Jr. and Marja L. Anderson. Glossary of Chinese characters. Bibliography. Address: Prof. of Anthropology, Harvard Univ., Cambridge, Massachusetts.

1978. Farthing, Bill. 1977. Odiyan country cookbook. Emeryville, California: Dharma. xii + 211 p. Illust. by Denise Anderson. Photos by Peter Ogilvie. Index. 20 cm.

• **Summary:** This lacto-ovo vegetarian cookbook is dedicated to Tarthang Tulku, Rimpoche, a Tibetan Buddhist teacher who is head of the Nyingma Institute, founded in 1969 in Berkeley, California, and of Odiyan, the Institute's country retreat center being built on a redwood forested mountain above the Pacific Ocean in northwestern Sonoma County, California. Odiyan is a transliteration of the Sanskrit name for the birthplace of Padmasambhava the great teacher who brought Buddhism to Tibet.

The Foreword notes: "Although our chickens produce many eggs, we are essentially on a correct balance of grains and beans or soy-dairy products to provide protein." A chapter titled "Home-Made Proteins" (p. 112-19) includes various soy-related recipes: Homemade soymilk. Homemade tofu. Kinugoshi. Tofu-nut butter (with ground walnuts, peanuts, almonds, or sesame seeds). Tofu and stir-fried vegetables. Sprouted soybean puree. A large photo shows community scale tofu-making equipment plus the observation: "If you enjoyed making your own bread, then you may find the soy-dairy a very rewarding aspect of cooking to explore."

Other soy-related recipes include: Soy-bean patties (p. 95). Miso and tahini spread (p. 130). Soymilk dressing (p. 131). Soy carob milk (p. 196). Soymilk lassi (p. 197). Nutmilk (made with 2 cups soymilk plus ½ cup almonds, walnuts, or cashews). Address: California.

1979. Fuji Seiyu K.K. (Fuji Oil Co.). 1977. Daizu tanpaku kogyo-ka e no michi [Road to industrialization of soy protein. Part I (Document part)]. In: Fuji Seiyu K.K. 1977. Fuji Seiyu 25 Nen-shi: Showa 21 nen 11-gatsu–Showa 51 nen 3-gatsu [Fuji Oil Company Ltd.: 25-year history, Nov. 1946 to March 1976]. Tokyo: Fuji Oil Co. 622 p. See p. 417-30. [Jap]

• **Summary:** Outline: As a major Japanese soybean crusher, processing whole soybeans into soybean oil and defatted soybean meal, Fuji Seiyu produced large amounts defatted soybean meal. In 1962-62 Fuji Seiyu began to make *Fuji Takaramame* (a by-product of tofu powder) and *Proplus* using soy protein from defatted soybean meal, even though these were not considered to be good soy protein products.

In 1967 Fuji developed isolated soy protein (containing more than 92% protein) from defatted soybean meal, and started to sell this FujiPro isolated soy protein. Since it was a completely new product and little was known about it, sales were slow in the beginning. But later it started to be sold to makers of second generation meat products (such as sausages or ham).

In 1969 Fuji started to sell Fuji Nikku ("Fuji Meat"), which is a textured protein product (*soshiki tanpaku seihin*) and this expanded their market among hamburger and hamburger ball (meatball) makers. Based on the above experience, Ralston Purina (America's leading soy protein manufacturer) got to know Fuji and invited the company to do a joint venture. Three years later, in Dec. 1973, the two companies contributed 200 million yen and founded a joint company named Fuji Purina Protein K.K. In 1974 they started to make and sell *FujiPur / FujiPua* (for "Fuji Purina"), a spun soy protein fiber. Presently, Fuji Seiyu is trying to expand into new, undeveloped markets for soy protein foods (p. 418).

For 1964 the Food Bureau (*Shokuryo-chô*) of Japan's Ministry of Agriculture, planned the following usage of soybean meal: Food 347,000 metric tons (tonnes). Feed 691,000 tonnes. All but 69,000 tonnes of the food use went for miso, shoyu, and tofu. Of this 69,000 tonnes, 40,000 tonnes went for soy protein foods (such as breads, biscuits, doughnuts, shortcake, ice cream, fish paste products, cheese, soup, etc.) and 30,000 tonnes for glutamic acid / MSG (p. 419).

Fuji decided to industrialize soy protein very early and also to make isolated soy protein their main soy protein product. Other Japanese companies that tried to enter the soy protein market failed because they produced only soy protein concentrate (p. 420).

Fuji Seiyu finished their research on isolated soy protein at the end of 1966, then started test production in their 1-tonne pilot plant. In June 1967, they started to build their full-scale plant, and finished by the end of the year; it had a capacity of 100 tonnes/month. The company named its first

product Fuji Pro; this isolated soy protein contained more than 90% protein and about 6% moisture (p. 421).

Then the company found that they could use Fuji Pro in fish paste products, so they tried to sell it to companies making such products. But these manufacturers were very conservative, so after 6 months Fuji gave up and began selling it to secondary meat producers (p. 423).

The meat industry was also very conservative, but after many visits to these companies, Fuji got to understand them better. Some of these companies were already importing soy protein from the USA and using it in their meat products. Fuji's research & development department developed a sausage containing Fuji Pro and presented samples to the meat processors; they made many repeat visits. In 1968 Fuji received an order from a large meat processor; after that they received orders from medium and small processors one after another. In Nov. 1968 Fuji's sales finally reached 100 tonnes/month. Later, after many careful investigations, the Japan Agricultural Standards (JAS) decided to make isolated soy protein a JAS product with a standard of identity for use in ham, sausages, etc. In this way, sales of Fuji Pro expanded. But there was also another reason for expansion: Exports! Actually exports started earlier and were easier than sales to the domestic Japanese market. And it was because of the demand from abroad that Fuji decided to build their first full-scale plant in 1967, even though they didn't have any clear idea about their domestic sales. Fuji's exports went Shoemaker, a Dutch food company; this relationship started in about 1964 (p. 424).

At that time the Dutch company was selling soy protein made by Central Soya in the USA. Being dissatisfied with the product's quality and prices, they looked to Japanese oil makers to produce these products. They contacted several companies, including Fuji Seiyu, which answered their inquiry and told them: "We are still study isolates, but we have a product that contains 50% protein." They sent Shoemaker a sample of Fuji Takaramame. However Shoemaker wanted a soy protein isolate, so no business was transacted. But from that time on, the two companies stayed in close communication and began to exchange information. Shoemaker asked Fuji to develop a soy protein isolate, provided important suggestions concerning the research, and sent Fuji a report of the European market for such a product. Shoemaker's cooperation played an important role in the development of Fuji's isolated soy protein.

Initially, Fuji had placed heavy emphasis on developing soy protein products for second generation fish paste products, but after considering the potential demand in Europe, Fuji started to research soy proteins for meat products such as ham and sausage. Fuji Pro was developed to be highly elastic, emulsifiable, and water soluble—characteristics desired by the European market. Fuji sent some samples. Before they started commercial production, they signed a contract with Shoemaker as a sales agent; it

named Fuji as a IPSO (International Protein Sales Organization) and exporter. Thus, it was because of the European market that Fuji could start commercial production without a domestic market, and it was this European market that enabled Fuji to sell isolates in Japan. Everything seemed backwards. For example, some Japanese from the meat industry went to Europe to study that industry. There they learned that soy protein (named IPSO) was being used in ham and sausages. Returning to Japan, they discovered to their surprise that the soy protein was made in Japan by Fuji. In 1969 Fuji's contribution to Japanese exports (oil and protein) was honored with an award (p. 425-26).

A knowledge of the overseas market for soy protein was a great help to Fuji as its soy protein products began to serve an international market. This also gave ideas for development of new products—starting with meatlike soy protein products. They received news from Bernard Hawley in England that textured soy protein products had been developed in the USA. Hawley was a nutritionist and a consultant (Hawley & Associates) and Fuji began to use his consulting services in April 1966 (p. 428). Hawley made many trips to Japan and he and Mr. Nishimura (the president of Fuji Seiyu) became great friends. In 1967 Fuji sent Hawley to the USA and asked him to study the market for textured soy proteins and the send Fuji a market report (p. 429). Meanwhile, the company president and a man from the planning department also went to the USA to study the market; they soon decided to start making textured soy protein immediately. They visited Wenger Manufacturing Co. in the USA, signed a contract in April 1968, and received a machine [extrusion cooker] that year. Actually they bought only the main body of the machine from Wenger; the other parts (including the power mill) were invented and designed by Fuji technicians (p. 430). Continued. Address: Tokyo, Japan.

1980. Ismail, Mohamad Salleh. 1977. Accelerated fermentation of fish sauce, fish-soy paste and fish-soy sauce. PhD thesis, Cornell University. 242 p. Page 3618 in volume 38/08-B of Dissertation Abstracts International. * Address: Cornell Univ.

1981. Johns, Yohanni. 1977. Dishes from Indonesia. New metricated edition. Melbourne, Australia: Thomas Nelson (Australia) Ltd. xiv + 151 p. Illust. Index. 26 cm. 1st ed. 1971.

• **Summary:** The author comes from a town in Indonesia named Padang Pajang, located in the mountains of West Sumatra in an area known as Minangkabu. The society is matrilineal, so ancestral property is passed down the female line and a new husband comes to live in his wife's family's home. She married an Englishman in about 1955 and they

lived in Jogjakarta (in Central Java) from 1956-1958, then in Australia since 1958.

This handsome book, packed with color photos, gives a good introduction to Indonesian cookery—though it contains a disproportionate number of recipes using meat. The excellent glossary of ingredients (p. 10-16) includes: Bean curd (incl. fried bean curd), black bean sauce or salted black beans (*tauco*, sic, *tauco* is Indonesian-style miso, whereas *taosi* is salted black beans), and soya sauce. Note that tempeh is not mentioned. Soy-related recipes include: Eggs in soya sauce (p. 53-54). Fried fish in black bean sauce (Taucu ikan, p. 60). Stir-fried prawns with long beans and black bean sauce (p. 71). Bean curd balls with prawns (p. 72). Braised liver in soya sauce (p. 86). Braised ox tongue in soya sauce (p. 87). Braised chicken in soya sauce (p. 90). Sambal of brown bean sauce (p. 101). Soya sauce sambal (Sambal kecap, p. 102). Fried soya bean curd with sauce (p. 125). Address: Australia.

1982. Korean Society of Food Science and Technology. 1977. Comprehensive review of the literature on Korean foods. II. (1969-76). Seoul, South Korea: 235 p. * Address: Korea.

1983. Krich, Ken. 1977. Re: New pamphlets on tofu and miso available from Westbrae Natural Foods. Letter to food distributors and manufacturers. 1 p. Undated. [2 ref]
 • **Summary:** “For several years Westbrae has felt a major commitment to popularizing Japanese foods in this country. During a time when shortages of protein have become such a problem, the knowledge of soy-based foods is greatly needed by more people. Both miso and tofu are extremely healthy and inexpensive sources of protein and other nutritional benefits... yet many consumers are still not familiar with these products.

“To fill this information gap we asked Bill Shurtleff and Akiko Aoyagi, authors of *The Book of Tofu* and *The Book of Miso*, to write readable pamphlets on these topics. The authors have lived in Japan for the past five years studying and writing about traditional Japanese foods. You are probably familiar with their book(s)... I have taken the liberty of enclosing two copies of each pamphlet...”

“You may order either or both of these pamphlets with either the Westbrae logo, your logo, or no logo.” This letter is printed on recycled paper. Address: Distributor Sales, Westbrae Natural Foods, Inc., 1224 10th St., Berkeley, California 94710. Phone: 415-524-0506.

1984. Miyako Oriental Foods Inc. 1977. Miso (Leaflet). Los Angeles, California. 6 panels. Undated.

• **Summary:** Contains 9 recipes and illustrations of Yamajirushi, Yamaizumi, and Kanemasa miso packages and brands. Printed with brown ink on beige paper. Address:

404 Towne Ave., Los Angeles, California 90013. Phone: Office: (213) 626-9458. Factory: (213) 488-1678.

1985. Nakase, Kenji. 1977. Miso shôyu shiso Hotto Enmyô Kokushi [The Zen priest who introduced miso and shoyu to Japan: Hotto Emmyo Kokushi, or Kakushin (1207-1298)]. Kyoto: Zenkoku Jokai Shinbunsha. 292 p. Appendix: Miso and shoyu supply adjustment regulations. [Jap]

• **Summary:** A scholarly, carefully researched book on the early history of miso and shoyu in Japan.

1986. Nature’s big, beautiful, bountiful, feel-good book. 1977. New Canaan, Connecticut: Keats Publishing, Inc. 322 p.

• **Summary:** The section titled “Remarkable miso and how to use it,” by William Shurtleff and Akiko Aoyagi (p. 54-55) contains an introduction and six recipes.

1987. Nosan Gyoson Bunka Kyokai. 1977. Nôgyô gijutsu taikai. Sakumotsu-hen. Vol. 6 [Outline of agricultural arts and techniques. Crops. Vol. 6]. Tokyo: Nôsan Gyôson Bunka Kyokai. See p. 3-7. [Jap]

• **Summary:** Page 4 shows 2 pie charts with statistics from the year 1974. The 3,500,000 tonnes of whole soybeans consumed in Japan are used as follows: Soy oil 78% of the total, tofu and products 10.5% (except frozen tofu), miso 5.5%, natto 1.5%, frozen tofu 1.3%, kinako (roasted soy flour) 0.4%, shoyu 0.2%, and other 2.6%. The 2,20,000 tonnes of defatted soybean meal are used as follows: Livestock feed 84.6%, shoyu 7.5%, tofu 4.1%, miso 0.3%, other food uses 2.0%, other nonfood uses 1.5%.

A graph on page 7 shows soybean production in Japan and soybean imports. Imports were static from about 1895 to 1918 at about 100,000 tonnes, then they rose rapidly to about 1,000,000 in 1944. They dropped to almost zero following Japan’s defeat in World War II, then starting in about 1954, skyrocketed, reaching 1 million tonnes in about 1960, 2 million tonnes in about 1968, and 3 million tonnes in about 1970. After about 1954, soybean production in Japan dropped steadily. Address: Japan.

1988. Purchio, Adhemar. 1977. Search for aflatoxin B-1 and similar fluorescent compounds in ‘misso’ [miso]. *Mycopathologia* 58(1):13-17. [5 ref]

Address: Faculdade de Medicina da Univ., de Sao Paulo Depto. de Microbiologia, C.P. 2921, Sao Paulo, Brasil.

1989. Schafer, Edward H. 1977. T’ang. In: K.C. Chang, ed. 1977. Food in Chinese Culture. New Haven, CT, and London: Yale Univ. Press. 429 p. See p. 85-140. [34 endnotes]

• **Summary:** The T’ang dynasty lasted from +618 to 907. Contents: Introduction. Foodstuffs. Sweeteners. Condiments and spices (incl. salt). Pickles and preservatives. Cooking.

Beverages. Utensils. Visual aspects. Geographical differences. Taboos and prejudices. Food in ceremonies and special occasions (incl. feasts and festivals). Inns and taverns. Footnotes (34).

Legumes (*tou*) were an important part of the Chinese diet in T'ang times. Soybeans (*ta tou* = large beans) had a variety of uses and received considerable attention from the T'ang pharmacologists, who claimed to have discovered that the beans had different effects on the body depending on the way they were prepared. For example, when stir-roasted they were excessively heating, boiled they were too chilling [cooling], made into a relish (*shih* = soy nuggets) they were very cool, but pickled to make *chiang* (Chinese-style miso) they were balanced. However when stir-roasted and taken in wine, they were said to be curative of certain kinds of paralysis. The young shoots of a variety of soybean called "white legume" (*po tou*) were much admired for their flavor, either cooked or raw, and were said to be good for the kidneys (p. 90).

Also important in the diet were "true" millet (*chi*; *Panicum miliaceum*), foxtail millet—also called spiked or Italian millet (*su*; *Setaria italica*), *shu* was the common word for glutinous millet and *no* was that for glutinous rice, various sea vegetables such as purple-leaved laver, green laver or "sea lettuce," and the sugary sweet tangle (p. 91), Far Eastern eggplant or brinjal (p. 93), and the jujube—which resembled the Western date (p. 95). Sesame seeds were chiefly of interest as a source of oil, but they were also fried and eaten (p. 98).

Concerning animal milk, there is the widespread idea that a line divides East Asia into two cultural groups: One depends on milk products (Indians, Tibetans, and many Central Asian nomads), and the other (which includes the Chinese) rejects them with loathing. "Indeed some evidence for this classification can be found at every period of Chinese history, even though warm milk was regarded as a highly nutritious food from very ancient times (Cooper and Sivin 1973, p. 227). It seems, however, that after Han times, when the intermingling of Chinese and Altaic customs became pronounced to a new degree, the barrier of prejudice broke down, and by T'ang times milk products formed a significant part of the diet of the upper classes." Probable reasons for this change are given. "Milk was modified in many ways. It was curdled to make, for instance, (*ju fu*), analogous to bean curd [tofu]. Indeed, much more popular than unaltered milk were a number of fermented or soured derivatives." Three of these, which formed a hierarchy, were given special attention and spiritual significance corresponding to the development of the Buddha spirit: kumiss (*lo*, the lowest), kaymak or Devonshire cream (*su*), and clarified butter (*t'i-hu*, the highest) (p. 105-06).

Fresh ginger had a cooling property if used with the skin intact, but was warming if the root was peeled (p. 111).

The section titled "Pickles and preservatives" notes that the most characteristic and traditional Chinese methods of preserving involved fermentation processes which reduced "proteins into their component amino acids and amides by the action of enzymes, ferments, and molds. A very special species of pickle was called *chiang*, which has been aptly translated 'bean-pickle.' The word *chiang* appears in altered form as the first syllable of the Americanized Japanese expression for shoyu-soya. However in pre-modern times, *chiang* was not necessarily a soybean product. Indeed the word was sometimes applied to pickles based on meats and seafoods (Shih 1959, p. 84-85; *Fan Sheng-chih Shu*)... I shall use the term *bean-relish* to represent the Chinese word *shih*, the name of a popular relish of decomposed soybeans that assumes a dark color by interruption of the hydrolytic process or by drying at a high temperature (Shih 1959, p. 87). The name was given to a number of similar concoctions, some prepared with wine, some with vinegar, some with brine, and so on. The differences were frequently local. One authority mentions a variety peculiar to a region in Honan that was made from steamed soybeans, with salt and fagara added. It matured in two or three days of warm weather. It was said that this salty pickle could be kept for ten years without spoiling."

"The milky bean curd—also known to Westerners by its Japanese name, tofu (Chinese *tou-fu*)—was a ferment made from many kinds of beans and peas. It was an ancient and familiar product (S.C. Li 1965 ed. of *Pen-ts'ao kang-mu*, 25:5)." Note: The author must be referring to fermented tofu, which was usually made from soybeans.

In the discussion of fish farming (p. 102) no mention is made of soybeans being fed to the fish. Address: Prof. of Oriental Languages, Univ. of California at Berkeley.

1990. Spence, Jonathan D. 1977. Ch'ing. In: K.C. Chang, ed. 1977. *Food in Chinese Culture*. New Haven, CT, and London: Yale Univ. Press. 429 p. See p. 259-94. [38 ref]

• **Summary:** The Ch'ing dynasty (China's last dynasty) lasted from 1644 to 1911.

Concerning peanuts: Ho Ping-ti (1959, p. 183-95) has shown how maize, sweet potatoes, Irish potatoes, and peanuts all became basic crops in China during the Ch'ing, and how their story is enmeshed with the drama of China's internal colonization (p. 263). During the 1750s, Magistrate Li Hua-nan in Chekiang reported the popularity of peanuts. Table 4 (p. 269) shows the relative prices of sweet oil, peanut oil, salt, and salt turnip from 1902 to 1912. In 1928 L.K. Tao reported that peanuts were bought by 89.6% of the families in Peking (p. 270). Note: Reischauer and Fairbank in *East Asia: The Great Tradition* (1960, p. 393) agree. There was considerable growth in China's population during the 18th century, before the impact of industrialization. The leading explanation for such growth lies in the increase of the food supply made possible by (1)

the opening up of new land to cultivation, often under imperial encouragement, and (2) the consumption of new food crops. Maize (corn), sweet potatoes, peanuts, and tobacco were all introduced into China from the Americas in the 16th or 17th centuries. The sweet potato became the poor-man's food of south China.

Also discusses: Vegetarianism (p. 290). Address: Prof. of History, Yale Univ., New Haven, Connecticut. Phone: 609-452-4284.

1991. White, Beverly. 1977. Bean cuisine. A culinary guide for the ecogourmet. Boston, Massachusetts: Beacon Press. xv + 142 p. Illust. by Julie Maas. Index. 21 cm.

• **Summary:** Contents: Introduction. 1. Becoming a bean cook. 2. Bean soups. 3. Bean salads. 4. Bean sandwiches, spreads, and such. 5. Stovetop beanpots. 6. Oven beanpots. 7. Feasts for special occasions. Dried legume glossary.

Contains good information about pressure cookers and pressure cooking beans (p. 6-10, including soybeans). Soy-related recipes include: Soy sprouts (p. 13). Basic tofu (p. 14). Bean on bean soup (p. 18). Tofu mayonnaise (p. 27). Apple bean sprout salad (with tofu dressing, p. 39). Carrot salad with tofu (p. 40). Soy joy salad (p. 48). Amarillo taco (with cooked soybeans, p. 50). Soy sandwiches (p. 57-58). Soyburgers supreme (p. 58-59). USA paté (p. 60). Soybeans creole (p. 85). Hearthside baked soybeans (p. 99). Vegetable medley (with soybeans, p. 110). Miso shiru soup (p. 126). Soy cucumber salad-sunomono (with soy sauce, p. 126). Vegetable sukiyaki (with tofu and soy sauce, p. 127). Basics (p. 136).

Soybean sprouts should be ½ to 1 inch long; they need to be parboiled for 10 minutes before use in salads. Freshen old tofu by parboiling for 2-3 minutes in a pot of boiling water.

1992. Winarno, F.G.; Ekasari, I.; Jenie, B.S.L.; Muchtadi, D.; Sulistioningsih, -; Irawati, Z.; Rahman, A. 1977. Research on tauco. Phase two. IFS research project. International Foundation for Science, Dept. of Agric. Product Technology. Bogor Agricultural University, Bogor, Indonesia. 33 p. [6 ref]

• **Summary:** Tauco is Indonesian-style miso. Contents: 1. The effect of starters, drying temperatures and storage time on the quality of rehydrated tauco. 2. The effects of soybean varieties and different mold species mixtures for fermentation on the quality of tauco during storage. 3. The effects of mold starters, fermentation containers and storage time on the quality of tauco. Address: Bogor, Indonesia.

1993. Wood, B.J.B. 1977. Oriental food uses of *Aspergillus*. In: J.E. Smith and J.E. Pateman, eds. 1977. Genetics and Physiology of *Aspergillus*. New York: Academic Press. x + 552 p. See p. 481-98. [33 ref]

• **Summary:** Contents: Introduction. Koji. Tamari. Miso. Tempeh. Sake. Some minor fermentations. Fermented foods and mycotoxins. Acknowledgments. References. Address: Dep. of Applied Microbiology, Univ. of Strathclyde, Glasgow [Scotland], U.K.

1994. Yokotsuka, T. 1977. Shokuhin Kagaku Daijiten: Shôyu [McGraw-Hill encyclopedia of food, agriculture & nutrition: Soy sauce]. Tokyo: McGraw-Hill Kodansha. See p. 309-310. [Jap]

• **Summary:** History: Hishio and Kuki production techniques came to Japan from China and Korea. According to the Taiho Ritsuryo (702 A.D.), various types of Hishio and Kuki and Miso (this is the Misho character—NOT the present Miso one) were made from soybeans in the Hishio Tsukasa of the Kunaisho. It is in later times that they started to use the liquid which was separated from the above three as seasonings. In the Kamakura (1185-1333 A.D.) period in the Wakayama prefecture they collected the liquid accumulated in the bottom of Miso Oke. In the Muromachi period (1338-1573 A.D.) they added water to miso and squeezed it to extract the liquid (called Usudare or Taremisu). Shoyu (which is different from miso) was first mentioned in Ekirinbon Setsuyoshu (1597 A.D.). Address: Kikkoman Corporation, Noda, Japan.

1995. Yü, Ying-shih. 1977. Han China. In: K.C. Chang, ed. 1977. Food in Chinese Culture. New Haven, CT, and London: Yale Univ. Press. 429 p. See p. 53-83.

• **Summary:** The Han dynasty lasted from 206 B.C. to A.D. 220. In 1972 China made a spectacular archaeological discovery on the eastern outskirts of Ch'ang-sha, Hunan, uncovering what is known as "Han Tomb No. 1 at Ma-wang-tui." The discovery achieved worldwide renown since the body of its owner was so remarkably preserved that her skin, muscles, and internal organs still had a certain elasticity when the coffin was opened after some 21 centuries. She was most likely the wife of Li-tsang, the first Marquis of Tai (reigned 193-186 B.C.) and died a few years after 168 B.C. at about the age of 50. Her husband was buried nearby in Tomb No. 2. Among the rich burial remains unearthed from Tomb No. 1 are 48 bamboo cases and 51 pottery vessels of various types. Most of them contained foodstuffs (figs. 17-18, p. 183). All of these food remains have been identified (Hunan Sheng 1973, 1:35-36). Grains and beans found in the tomb included soybeans, rice, wheat, barley, two kinds of millet (*Panicum* = glutinous millet, and *Setaria*), and red lentil (*Phaseolus angularis* Wight [azuki]). Apart from food remains, there were also 312 inscribed bamboo slips which gave additional information on both food and cooking. They tell us a lot about seasonings and methods used in Han-period cooking. "The seasonings included salt, sugar, honey, soy sauce

(*chiang*), *shih* (“salted darkened beans”), and leaven (*ch’ü* [*qu*].”

“What makes the Ma-wang-tui discovery doubly interesting is the amazing degree to which the food list from Tomb No. 1 agrees with the list given in the ‘Nei tse (‘Internal [Family] Regulations’) chapter of *Li chi*. Virtually all the foodstuffs and prepared dishes listed above can be found in that chapter (*Li chi*, 8:19a-21b; Legge 1967, 1:493-63).”

Ying Shao of the 2nd century A.D. reported that *shih* (“salted darkened beans”) [soy nuggets] were used to season dried meat and fish served after the main meal.

At Shao-ku (northwestern outskirts of Lo-yang), a total of 983 earthenware grain containers were unearthed in 1953 from 145 tombs datable from middle Earlier Han to late Later Han [about 100 B.C. to 200 A.D.]. Found in many of the containers are grain remains of the following: millets of various kinds, hemp, soybean, rice, and Job’s tears (*Coix lacryma-jobi*). Moreover, most of the containers bear inscribed labels indicating the food content of each. “Based on these archaeological finds, we can now say with confidence that the major categories of grains accessible to the Chinese in Han times included millets of various kinds, rice, wheat, barley, soybeans, lesser beans, and hemp. It is particularly noteworthy that this archaeological list matches very closely the “nine grains” recorded in the agriculturist book by Fan Sheng-chih of the first century B.C... Fan was a professional agriculturist and had actually taught people in the vicinity of Ch’ang-an the art of farming (S.H. Shih 1959, p. 8-11, 42-44).”

Millet was generally more common than rice as the main food in Han China, then came wheat, barley, soybeans, and hemp. Hemp fiber provided the basic material for manufacturing cloth in traditional China. The seed also proved edible and was classified by the ancients as a “grain.”

“To the existence of the very poor, soybeans and wheat could be even more vital than millet... There was always a pressing demand for soybeans and wheat as substitutes. As Pan Ku points out, the poor had only soybeans to chew and water to drink (Swann 1950, p. 419).”

The earliest bean curd is reported to have been made in the Han, but the textual evidence is too weak to support such a claim (C.P. Li 1955, p. 200). Address: Prof. of History, Yale Univ., New Haven, Connecticut.

1996. Huang, Carol Ann. 1977? Re: Work at the soy dairy on The Farm in Wisconsin. Letter to William Shurtleff. 1 p. Undated. Handwritten with signature on letterhead.

• **Summary:** Carol Ann thanks Bill for his bag [probably for making soymilk or tofu] and information on tempeh and miso. While Bonnie and John are in La Paz, Mexico, Carol is “doing the Soy Dairy.” She wrote to Mitoku in Japan for some koji or koji starter, but they suggested she write

Westbrae. “I’d love to get it together to make several big crocks of miso in the fall.” Address: Route 2, Ettrick, Wisconsin 54627.

1997. **Product Name:** Westbrae Brown Rice Miso.

Manufacturer’s Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer’s Address: 1224 10th St., Berkeley, CA 94710.

Date of Introduction: 1977?

New Product–Documentation: Interview with Gordon Bennett. 1987. Aug. 28.

1998. Gibbons, Barbara. 1978. San Francisco enjoys abundant Chinese foods: The slim gourmet. *Hartford Courant (Connecticut)*. Jan. 18. p. 14.

• **Summary:** San Francisco, with the largest Chinese population outside of China, has long been intrigued with things Oriental—an especially food. The impact of the Far East can even be seen in supermarkets, “where cake mixes and soda pop compete with black bean paste and dried tree ears for shelf space.”

1999. Asunaro Eastern Studies Institute. 1978. Now offering fall classes in traditional fermented foods: Miso, tamari, tofu, nato [sic, natto], sake, tekka, etc. (Ad). *East West Journal*. Jan. p. 82.

• **Summary:** Classes “taught by Naboru [sic, Noboru] Muramoto, author of *Healing Ourselves*. Also daily cooking classes. Located on 134 acres in Sonoma, California.” For further information, send for brochure. An illustration shows the Asunaro logo. Address: 4600 Cavedale Rd., Glen Ellen, California 95442. Phone: (707) 996-9659 or 938-9846.

2000. Eden Foods. 1978. Catalog 1978. 4601 Platt Rd., Ann Arbor, MI 48104. 57 p.

• **Summary:** On the cover is a workman loading sacks from one of many large hoppers. Another man, in front of a truck, moves a pallet. Pages 17 and 18 contain detailed information about and photos of the Eden-brand tamari (natural shoyu) and miso products. Eden now sells a brown rice miso, aged naturally for 1½ years. Hacho miso is now called “Soybean miso.” Nigari and Tekka are also listed. No prices are listed in this catalog; it contains descriptions of the products and many nice illustrations. The prices are listed on separate sheets. Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

2001. Fukushima, Danji. 1978. Fermented soybean protein foods in Japan. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 39-42.

• **Summary:** There are three major kinds of fermented soybean foods in Japan: Shoyu, miso, and natto. “In Japan, about 439,500 tons of soybeans and defatted soybeans are used as the materials of these fermented soybean foods. Among these, 175,000 tons are used for shoyu, 195,000 tons are used for miso, and 69,000 tons are used for natto.” Table 1 shows the consumption of soybeans and defatted soybeans in Japan in 1976 for foods (1,026,000 tonnes) and feeds (1,980,000), for a total of 3,006,000 tonnes. Foods are divided into fermented (shoyu, miso, natto; 439,500 tonnes) and non-fermented (tofu and aburage, kori-tofu, and others; 586,500 tonnes). For non-fermented soyfoods 466,500 tonnes of soybean are use for tofu and aburage, 29,000 tonnes for kori-tofu, and 91,000 tonnes for other products.

“Recently, a new fermented drink using soybeans appeared on the market. This product is a drink which is made by the fermentation of soy milk by lactic acid bacteria. There are many patents related to these kinds of products, including a yogurt type, in Japan. Therefore many new fermented soybean foods may appear on the market in the future.”

Table 2 shows the typical composition of different kinds of shoyu. Table 3 shows the annual production of purely fermented, semi-fermented, and chemical shoyu in 1976. Table 4 shows the annual production of Japanese Agricultural Standard mark shoyu in 1976. Table 5 shows the chemical composition of major types of miso. Address: Noda Inst. for Scientific Research, Kikkoman Shoyu Co., Tokyo, Japan.

2002. Shurtleff, William. 1978. Household preparation of winged bean tempeh, tofu, milk, and sprouts. In: *The Winged Bean*. Los Banos, Laguna, Philippines: Philippine Council for Agriculture and Resources Research (PCARR). xvii + 478 p. See p. 335-39. Jan.

• **Summary:** This book consists of papers presented at the 1st International Symposium on Developing the Potentials of the Winged Bean. Held Jan. 1978, at Manila, Philippines. Contents: Introduction. Homemade winged bean tempeh: Recipe, directions, polyethylene (plastic) bags, baking pans or pie tins, good tempeh, immature tempeh, inedible tempeh, troubleshooting (tempeh is too wet, mold is sparse and does not bind beans tightly, tempeh contains black spots or patches, tempeh smells strongly of ammonia, mold grew abundantly in some places but sparsely in others). Homemade winged bean tofu: Recipe, directions, troubleshooting (low yield, small curds or crumbly tofu texture, coagulant was insufficient). Homemade winged bean milk: Recipe, directions, honey-vanilla, rich and creamy, carob-honey, malt, mocha, or coffee. Homemade red winged bean miso. Homemade winged bean sprouts.

Note: This is the earliest document seen on making tofu from winged beans (Kantha 1983). Address: New-Age

Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2003. Shurtleff, William; Aoyagi, Akiko. 1978. Western-style recipes using salt-free miso. New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. 5 p. Jan. Unpublished manuscript. [Eng]

• **Summary:** Contains 8 meatless recipes developed for Nagano Miso Co. Address: Tokyo, Japan. Phone: 03-925-4974.

2004. Wang, Jun Ryun; Lee, Yang Hee. 1978. Traditional soybean foods in Korea. In: *American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings*. Hudson, Iowa: ASA. 136 p. See p. 43-47. [13 ref]

• **Summary:** “The origin of soy sauce and paste in Korean literature dates back to 683 A.D. (Shinmu King 3rd year of the United Silla period). Since an old Japanese literature [document], *Hwameyruitsuroku [Wamyō Ruijusho; Collections of Japanese Names, by Subject]*, of Heyan [Heian] records that ‘Maljang (Meju) is a Korean soy sauce and paste’ and a record on Maljang was also observed in the ruins of Nara, it is evident that soy sauce and paste were introduced from Korea to Japan during the Nara period (645-793 A.D.). Therefore, it is believed that the beginning of their consumption in Korea should be in the third century of Kokuryo period.”

“Soybean has been a major protein source in the Korean diet.” In 1976 some 442,803 tonnes (metric tons) of soybeans were used in Korea as follows: oil and defatted meal 28.5%, curd (*tubu*, or tofu) 24.5%, paste (*doenjang*) 18.3%, soy sauce (*kanjang*) 10.6%, soy sprouts (*kongnamul*) 9.0%, hot soy paste (*kochujang*, made from meju, hot pepper flour, and cooked glutinous rice) 6.6%, soymilk (*kongkuk*) 0.14%, and other 2.4%. Other includes roasted soy flour (*konggomul*, used for coating rice cakes [mochi]), fried tofu (*yubu*), salted natto paste (*jeonkukjang*). *Doebiji* is fresh soybean puree, made by grinding soaked soybeans. When used as a food, it is usually cooked with vegetables, kimchi, and meat. Meju is balls of soybean koji like Japan’s miso-dama. All fermented Korean soybean foods except Joenkukjang are prepared from meju. Its characteristic flavor results from *Aspergillus*, *Penicillium*, and *Mucor* species of molds on the surface of the balls and *Bacillus subtilis* on the inside. Damsuejang is a quick fermented soy paste made by crushing meju to a powder, adding a warm brine solution, then allowing it to ferment and ripen.

Note: This is the earliest English-language document seen (March 2009) that uses the word “Damsuejang” to refer to Korean-style soybean paste (miso).

The above usage is the equivalent of 12 kg/capita. The daily per capita consumption of soy sauce (*kanjang*) is 20

ml, of soybean paste (doenjang) is 15 gm, and of hot soybean paste is 10 gm. Most of the soy sauce (64%), doenjang (82%), and kochujang (76%) and all of the salted natto paste (joenkukjang) and quick fermented soy paste (damsuejang) are produced at a household level and consumed directly.

Both soybean production and imports have grown in recent years. In 1970 production was 231,994 tonnes, and imports were 36,291 tonnes for a total of 268,285 tonnes. In 1976 production was 294,949 tonnes (up 27% over 1970), and imports were 147,854 tonnes (4 times as much as in 1970) for a total of 442,803 tonnes (up 65% over 1970). Address: Korea Food Development Centre, Seoul, South Korea.

2005. Westbrae Natural Foods. 1978. Someday all of this will be as familiar as apple pie (Ad). *Whole Foods (Berkeley, California)*. Jan. Inside front cover.

• **Summary:** This full-page color ad shows Westbrae Red Miso, Barley Miso, Brown Rice Miso, Soybean Miso, Hatcho Miso, and Tamari, plus various sea vegetables (nori, hijiki, wakame, kombu, etc.). The ad also appeared in *East West Journal*, May 1978, inside front cover. Address: 4240 Hollis St., Emeryville, California 94608. Phone: 415/658-7520.

2006. Yu, Swee Yean; Ch'ng, Guan Choo. 1978. Soy bean foods in Malaysia. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 48-52. [16 ref]

• **Summary:** Contents: Introduction. Fermented soya bean products: Soya sauce (manufacture of 'thin' (dilute) soya sauce, manufacture of 'thick' (viscous) soya sauce, microbiology of Malaysian soya sauce, stability of the product), tempeh, tau cheo (thick paste-like sauce), tao si (soy nuggets). Non-fermented soya bean products: Soya bean sprouts, tofu (semi-firm curd), tofu fah (soft curd), tow kwa (firm curd), tin chok (dried, flat sheets [yuba]), fu chok (dried, rope-like [bamboo yuba]), tofu pok (deep-fried curd [tofu cubes]), chak tie (vegetarian [yuba] sausage), soya bean milk (tau cheong), meat analogues (soya flour is shaped into desired forms by hand). Nutritional data. Conclusion. Address: Universiti Pertanian Malaysia, Serdang.

2007. Ferretti, Fred. 1978. Scrutinizing Chinese food. *New York Times*. Feb. 1. p. C6.

• **Summary:** This is a review of the book *The Scrutable Feast*, by Dorothy Farris Lapidus, who speaks Chinese, and who has created this book "out of her determination not to be dominated by Chinese restaurant menus."

The book discusses "Ma Po style bean curd, a dish of ground pork and bean curd, so called because Ma Po literally means pockmarked old woman."

To illustrate: "chicken, page 38, no. 27, is stir fried with bitter melon and a touch of black bean paste;..."

2008. Clough, Jean. 1978. Kitchens that dish up naturally good food. *Chicago Tribune*. Feb. 3. p. A1.

• **Summary:** The Plowshare Cafe (6155 N. Broadway) serves macrobiotic food and is also a health foods store. They use foods grown locally, in season. In addition, all meat, dairy products, tropical fruits, most sweeteners, and many spices are not served. The Macro-plate (\$2.50) includes brown rice, miso soup and sea vegetables. Miso "is a black creamy paste made of fermented soy beans." The sea vegetables included hiziki seaweed in tamari sauce. Also offered was a sandwich with seitan (made of gluten), "tofu, soy mayonnaise, sesame seeds, carrots, and natto miso, a less-aged miso that includes barley and ginger. Its a granular to be sprinkled on rice or sandwiches."

New Earth Cafe and Mama Peaches are also vegetarian restaurants. Address: Dr.

2009. New England Soy Dairy Inc. 1978. Re: Announcing opening of New England Soy Dairy, Inc. Letter to customers and friends of the business, Feb. 17. 2 p. Typed, with signature on orange letterhead. [1 ref]

• **Summary:** "Dear friends. We are pleased to announce the opening of the New England Soy Dairy, Inc... As soon as we can hook up our deep fryer and practice making agé and agé pouches, we'll add them to our list of products... We have ordered a packaging machine that is scheduled to arrive in a few weeks." The company will then start making packaged tofu (now it is all sold in bulk), and may begin producing hard tofu (doufu), tofu pudding, and bottled soymilk. "The possibilities for freshly made soybean products seem almost endless. We are experimenting with a soy ice creme, and with miso. We'd really like to start producing tempeh this autumn... Our tofu price will remain at \$0.44/lb to retailers." The company plans to pick up its first two distributors: Homestead Trading Co. and nearby Llama.

Shurtleff and Aoyagi, and their *Book of Tofu* and *Book of Tempeh* are mentioned in the letter. At the end: "Soy to the world, (Thanks to Akiko Aoyagi for the drawings)." A handwritten note at the end reads: "Bill & Akiko, We sent this around to our customers. We're still reading the B.ofT. [Book of Tofu]. Tom Timmins. P.S. Come visit us next time you're East." Address: 305 Wells St., Greenfield, Massachusetts 01301. Phone: (413) 772-0746.

2010. *Sankei Shinbun (Japan)*. 1978. Kanada de miso o tsukuritai ["I want to make miso in Canada"]. Feb.

• **Summary:** About Lulu Yoshihara, who is learning to make miso in Japan. Two photos show her working in a miso shop.

2011. Westbrae Natural Foods. 1978. Price list [Catalog]: February 1978. Emeryville, California: Westbrae. 20 p. 26 cm.

• **Summary:** On the cover are a black plum blossom logo and a large, bold double “W” in calligraphy near the bottom against a gray background.

Interesting products: Natural fruit butters and unsweetened fruit spreads. Four types of granola and two trail mixes. Panda snacks: Tamari almonds, Tamari cashews, Tamari nut roaster’s mix, Tamari sunflower seeds, White water trail mix (tamari roasted). Westbrae roasted nuts (25 lb boxes): Tamari almond, Tamari cashew pieces, Tamari valencia peanuts, Tamari nut roaster’s mix, Tamari sunflower seeds, Tamari pepitas (pumpkin seeds), Tamari filberts. Tamari nut butters (12, incl. almond, 6 peanut, and sesame tahini). Whole wheat soy pasta.

Asian foods & sea vegetables: Miso (red miso, brown rice miso, barley miso, Hatcho miso, soybean miso, light yellow miso, natto miso). Miso made in the United States: Light yellow, mellow white, red, mixed case. Sea vegetables: Agar, dulce (whole or flakes / powder), sea palm, nori, arame, hijiki, kombu, wakame. Shoyu and shoyu products: Josen shoyu, Sendai shoyu, White Tiger Tofu Sauce. Nigari. Kudzu. Umeboshi. Toasted sesame oil. Helpful tools: Wok (11 inch), vegetable brush, glass shoyu dispenser, Tofu kit, Tempeh kit, rice koji (Cold Mountain). Beans: Azuki (10 lb or 25 lb bag), soybeans (60 lb or 25 lb), soy grits raw. Publications: Includes four books and 3 pamphlets by Shurtleff and Aoyagi.

Note: The products in this catalog do not require refrigeration; they contain no refined sugar / white sugar, no meat, and no dairy products—just like the catalogs of almost all other natural food distributors during the 1970s and 1980s. Address: 4240 Hollis St., Emeryville, California 94608. Phone: (415) 658-7518 (order) or 7521 (office).

2012. *Town Crier (Greenfield, Massachusetts)*. 1978. Tofu manufacturing plant opens. 12(3):1-2. March 22.

• **Summary:** “The New England Soy Dairy, 305 Wells Street, in Greenfield, has opened the doors on its new manufacturing plant... The firm has recently completed a long-projected expansion into more spacious and efficient facilities where it utilizes special tofu-making equipment imported from Japan enabling the company to produce nearly 10,000 pounds of tofu every week. The Soy Dairy ships this out all across New England, New York City, and Pennsylvania.” The tofu, which retails for about \$0.75/lb is “made from organically grown soybeans, water, and nigari, a coagulant extracted from seawater...”

“The company uses the term ‘dairy’ to indicate its intention to provide a full range of alternative dairy-like products all derived from soybeans, including ice cream, yogurt, cream cheese, mayonnaise, whipped cream, tartar sauce, plain and flavored soymilk. In addition, other less

familiar items will be introduced, such as miso soy bean paste, deep-fried tofu, and a fermented product, called tempeh. The Dairy operates at a medium level of technology, fusing traditional hand craftsmanship with modern labor saving equipment.”

“The company is open Monday through Saturday, 8 a.m. to 6 p.m. and visitors are welcome.” A photo shows Kathy Whelan Leviton cutting a large sheet of tofu into cakes.

2013. Kiuchi, Kan; Ohta, Teruo; Ishima, Toshio; Takabayashi, Tokuji; Ebine, Hideo. 1978. [Miso lipids and the relations between free fatty acids and quality of miso]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 33. p. 209-13. March. [9 ref. Eng; jap]

• **Summary:** Reprinted from *Nippon Shokuhin Kogyo Gakkaishi (J. of Food Science and Technology)* 24:295-99 (1977). Address: National Food Research Inst., MAFF, Tokyo, Japan.

2014. Shurtleff, William; Aoyagi, Akiko. 1978. Beikoku ni okeru miso [Miso in America]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 289. p. 11-15. March. [1 ref. Jap]

Address: New-Age Foods Study Center, c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2015. **Product Name:** Eden Genmai (Brown Rice) Miso. **Manufacturer’s Name:** Eden Foods, Inc. (Importer). Made in Japan. **Manufacturer’s Address:** 4601 Platt Rd., Ann Arbor, MI 48104. Phone: (313) 973-9400. **Date of Introduction:** 1978. April. **Ingredients:** Soybeans, brown rice, salt.

Wt/Vol., Packaging, Price: 14 oz, 8.8 lb, 22 lb, and 44 lb. **How Stored:** Shelf stable, 6-12 month shelf life. **New Product–Documentation:** Eden Foods spring-summer pricelist 1978. Page 11 lists “Eden Brown Rice Miso (Genmai)” as a new product. It is sold in 4 sizes: 14 oz, 8.8 lb, 22 lb, and 44 lb.

Eden Foods Catalog. 1978. Page 18. “Eden Brown Rice Miso (Genmai)—the latest addition to our line is made from soybeans, brown rice and salt. Aged naturally for 1½ years. For more information about miso, we suggest you see *The Book of Miso* and the pamphlets ‘What is Miso?’ and ‘Miso and Tamari, Foods Steeped in Culture,’ all available in our literature sections.”

Ad in Soy Craft. 1979. Summer. p. 38. “Traditional Soy Products from Eden Foods.” “Eden miso is made from whole soybeans, grains, and sea salt, fermented at natural temperatures in cedar kegs. Barley miso (mugi), Soybean miso (hacho), Rice miso (kome), and Brown rice miso

(genmai) are all available in 14 oz, 8.8 lb, 22 lb, and 44 lb sizes.”

Talk with Michael Potter, Chairman of Eden Foods. 1993. Oct. 31. Genmai Miso was started to be imported from the Muso Co. about 3 or 4 years after the first shipments arrived from Japan.

2016. Eden Foods. 1978. Spring-summer pricelist 1978. 4601 Platt Rd., Ann Arbor, MI 48104. 37 p.

• **Summary:** Products are similar to the catalog published earlier in 1978. Eden now carries many East Asian (mostly Japanese) herbal products from Herb T. Company in San Francisco, incl. Kuzu Root Tea. Salt products include: Mineral Salt (Indianola Oquirrh), and Herba Mare (France). Pure & Simple now makes 3 salad dressings: Romano, Sesame Herbal, and Mayonnaise.

Page 11 lists “Eden Brown Rice Miso (Genmai)” as a new product. It is sold in 4 sizes: 14 oz, 8.8 lb, 22 lb, and 44 lb. Address: Ann Arbor, Michigan. Phone: (313) 973-9400.

2017. Goldman, Sherman; Smith, Tyler. 1978. The two worlds of a small publisher: An interview with Nahum and Beverly Stiskin. *East West Journal*. April. p. 67-69.

• **Summary:** Nahum and Beverly Stiskin traveled to Japan and founded *Autumn Press*. “Over the last two years, EWJ has excerpted several of their remarkable books, including *The Book of Tofu*, *The Book of Miso*, and *The Book of Kudzu* [by Shurtleff & Aoyagi] which bring the world of the Orient to a new generation of modern Western readers, cooks, and healers.”

The Stiskins established Autumn Press by publishing *Looking Glass God* which Nahum wrote after arriving in Japan in 1969. They borrowed money from their family and had the first edition printed by a local Japanese printer. Then they worked with Lima Ohsawa on her *Art of Just Cooking*.

For the first four years the company grew slowly, blunder by blunder. They both had to take other jobs in order to support themselves. Both their families felt they were making a great mistake by publishing books on subjects of little interest. But they were trying to contribute to a renaissance they saw happening. Their books deal with both theory and practice, from a wholistic perspective, and they try to address major issues confronting humans and society. They published feminist poetry by Ellen Bass and poems by the Korean dissident Kim Chi Ha.

The Book of Tofu has been Autumn Press’ biggest success, with 90,000 copies in print after two years. Nahum believes that introducing tofu to the United States “is going to prove truly revolutionary. I think we see that revolution going on around us.” Both are working to change the world. Four photos show Nahum Stiskin; one shows Beverly. Address: 1. Editor; 2. Contributing editor.

2018. **Product Name:** Nasoya Organic Tofu (Water Pack).

Manufacturer’s Name: Nasoya Foods.

Manufacturer’s Address: Mechanic St. Ext. (P.O. Box 841), Leominster, MA 01453. Phone: 617-537-0713.

Date of Introduction: 1978. April.

Wt/Vol., Packaging, Price: First bulk packed in water, then water packed in molded plastic trays, then vacuum packed, finally water packed in trays again.

How Stored: Refrigerated.

New Product–Documentation: Shurtleff & Aoyagi. 1978, Dec. *The Book of Tofu* (Ballantine pocketbook edition).

“Appendix B: Tofu Shops and Soy Dairies in the West.” p. 396. Owner: John Paino and Bob Bergwall.

Ad in *Order of the Universe*. 1979. No. 52. Autumn/winter. p. 21. “Tofu. Get the pick of the crop. Nasoya–Traditional firm tofu. Made with untreated, deep well water and using organically grown soy beans, stone ground just prior to cooking in large open cauldrons—a traditional firm tofu. Great for: Miso soups, salad dressings, stir-fried vegetables, baked dishes & vegetable stews.”

Letter from John Paino. 1981. Jan. Gives starting date as April 1978. The company’s main founders were John Paino and Robert Bergwall. It cost them about \$40,000 to get into business. The first tofu plant was about 1,500 square feet in size. During the first year, they made tofu and soymilk. After 1 year, they were making 18,000 lb/month of tofu, after 2 years 33,000 lb/month, and now they are making 50,000 lb/month.

Poster. 1982, undated. 9 by 12 inches. Color. Reprinted in *Soyfoods*. Soyfoods Center Computerized Mailing List. 1981. Jan. 22. Owner: John Paino & Bob Bergwall. 1983. Winter. p. 64. “Experience the variety of tofu tastes: Rich in protein, cholesterol free, low in calories.” As of Oct. 1988 Nasoya no longer vacuum packs tofu. They private label water packed tofu for Cornucopia and Stow Mills.

Talk with John Paino. 1989. Sept. 26. For the first month after Nasoya started making tofu, they packaged it in pails in bulk. Then they switched to water packing in tubs, starting with a small Monkey Packer with a foot pedal that packed once cake at a time. Under ideal conditions, this tofu had a 2-week shelf life. For the next 4 years they sold only water packed tofu. Then Tomsun, their main competitor, started pasteurizing their water packed tofu, which gave it a longer shelf life, and gave them a competitive advantage in supermarkets. Nasoya did not have enough space in their plant to install a pasteurization unit (the plant’s maximum output was 5,000 to 6,000 lb/day of tofu), nor the inclination to pasteurize. So they made a bold move, and in 1981 started vacuum packaging, using a \$55,000 Tiromat film machine. Their first tofu was vacuum packed in a clear film package, but within a month everyone told them to either change the film or take the product out of the produce case, because it looked terrible; it got beat up very badly. So they changed to a bottom film.

Nasoya Newsletter. 1990. Jan. p. 2. "Nasoya introduces new tofu labels." In January, Nasoya will introduce a colorful new tofu label to all supermarkets and natural food accounts. The new label, which matches the company's Nayonaize, Vegi-Dressing, and Vegi-Dip labels, will contain a brief description of the style of tofu, along with an easy recipe on the back. A large circle in the center of colorful vegetable drawings says "Organic. Made with well water."

This is the earliest record seen (April 2001) concerning Nasoya Foods.

2019. Shurtleff, William. 1978. Re: Proposal for establishing a Soyrafters Union or Cooperative in North America. Letter to all "Soycrafters in North America," April. 2 p. Typed, with signature on letterhead.

• **Summary:** This open letter, written on NAFSC letterhead and dated April 1978, was submitted to *Soycraft* newsletter, where it was published in June 1978 (which see). It led to the first national meeting of soyrafters in Ann Arbor, Michigan, on 28-30 July 1978 and the founding of the Soyrafters Association of North America at that meeting.

The letter begins: "Dear Soyrafters of North America: There has recently been growing interest in North America in starting a Soyrafters Union or Cooperative, perhaps along the lines of Japanese National Tofu, Miso, Shoyu, Natto, etc. Unions [Associations]. Such a development would seem to represent a great leap forward, of benefit to many in the expansion of consciousness and production of quality soyfoods in the Western world."

Note: This is the earliest document seen (Jan. 2003) in connection with the Soyrafters Association of North America (SANA). Address: Director, New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2020. Wells, Patricia. 1978. What is this thing called tofu? *New York Times*. May 3. p. 19-20. Reprinted in the Boston Herald-American. June 15.

• **Summary:** "In the early 1970s the Hashizume Bean Cake Corporation came to life as a minor cottage industry tucked away in the basement of a giant red brick factory in Long Island City. Each day it churned out a few hundred pressed soybean cakes, or tofu, and supplied the handful of Japanese restaurants and Oriental specialty stores in business at the time in the New York area.

"Today, thanks to what one company representative called 'the American-natural-organic-people'... seven trucks loaded with tofu leave the steamy Hashizume factory each day."

"A combination of events awakened the West to the wonders of tofu. One was the 1975 publication of *The Book of Tofu*, an Autumn Press cookbook and resource manual that caught on quickly with natural food followers. The other is tofu's nutritional attributes.

"While traditionally Oriental tofu companies as Hashizume and Tanaka & Company, which is on Manhattan's West Side (326 Amsterdam Ave. at 75th St.), have profited from the Westernization of tofu, young, counterculture entrepreneurs throughout the country have taken advantage of the growing demand." These include the "Laughing Grasshopper New England Soy Dairy" (which now makes 5 tons of tofu a week, that's 20,000 cakes). "Other successful American-run tofu factories have mushroomed in Bethlehem, Massachusetts [actually New Hampshire; Crystal Springs], Summertown, Tennessee, and Island Springs, Washington." A description of the process for making tofu at Hashizume is given.

Page 20 is titled "The West wakes up to the wonders of tofu." "Following are recipes using tofu in both Oriental and Westernized versions. The Oriental recipes are included in *The Book of Tofu*. The others were developed by the people at Laughing Grasshopper and the Crystal Hills Tofu Shop in Bethlehem, N.H.: Tofu clam dip, Maple walnut bars, Tofu manicotti, Chilled tofu, Shoyu dipping sauce, Raspberry pudding, and Miso soup with tofu and onions."

2021. *Hartford Courant (Connecticut)*. 1978. Feminine topics, by Jacqueline (Ad). May 7. p. 12E.

• **Summary:** "Oriental cooking is easy, fun healthy—and delicious! The Epicure Grocery in the heart of Farmington is always expanding their selection of ingredients! On hand—chili paste with garlic, yellow bean paste, fermented black beans, tree eggs, 5-spice powder, Szechuan peppercorns, oyster sauce, sesame oil, star anise, etc. etc."

2022. ASEAN Sub-Committee on Protein. ed. 1978. Report on the First ASEAN Workshop on Solid Substrate Fermentation. Bandung, Indonesia. Held 8-13 May 1978 at Bandung, Indonesia. [100+ ref]*

• **Summary:** This is the 5th ASEAN Protein Workshop. Address: Malaysia.

2023. Bellicchi, Kathy. 1978. Cook it with seaweed! *East West Journal*. May. p. 68-72.

• **Summary:** Contents: Introduction. Nori. Hiziki [Hijiki]. Arame. Wakame. Kombu. Dulse. Irish moss. Agar agar kanten. Variations on the basic hiziki recipe call for tofu, whole soybeans, and tamari. Wakame is used in miso soup, and in Ojea stew with miso and aduki [azuki] beans. Kombu is used in a broth with tamari, and in Oden with natto miso and tofu.

2024. *Eubiotica (Italy)*. 1978. Il miso [Miso]. No. 13. March/May. [Ita]*
Address: Italy.

2025. Mori, H. 1978. Shōwa 52 nendo ni okeru shōyu, miso no kenkyū gyōseki [Review of annual achievements in

shoyu and miso research]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 73(5):351-69. [532 ref. Jap]

• **Summary:** This important Japanese-language article, published each year in the May issue of this periodical, has two parts: (1) A review of the past year's major discoveries and developments in the fields of miso and soy sauce in Japan. (2) A bibliography related to those discoveries and developments. Address: Noda Sangyo Kagaku Kenkyusho.

2026. Whitaker, John R. 1978. Biochemical changes occurring during the fermentation of high-protein foods. *Food Technology* 32(5):175-80. May. [42 ref]

• **Summary:** Foods are fermented to improve the flavor, color, aroma, and texture, and to remove toxic constituents. Occidental fermentations generally use bacteria and non-filamentous fungi, whereas Oriental fermentation procedures generally use filamentous fungi. The following foods are discussed: Cheeses (particularly Roquefort and Cheddar), sufu, yoghurt, meat, fish, soy sauce, miso, tempeh, and ang-kak. Flow sheets show the production of sufu and soy sauce.

Contents: Reasons for fermenting foods. Occidental vs. oriental fermentations. Major fermented high-protein foods. References. Address: Dep. of Food Science and Technology, Univ. of California, Davis, California.

2027. Sheraton, Mimi. 1978. Restaurants: Stuffed cabbage and sushi on East Side. *New York Times*. June 9. p. C14.

• **Summary:** This is a review of Hatsuhana, a Japanese sushi restaurant at 17 East 48th St., New York City. "Advised by a Japanese friend, we ordered natto, a pungent mix of fermented [soy] beans, tuna fish and scallions; nuta, a sensual blend of raw fluke [flounder, a type of flatfish] and scallions in a satiny yellow sauce made of soy bean paste [miso], lemon and sake." Also salmon teriyaki, and "wrappings of spinach-green seaweed." All sushi and sashimi, nuta and natto are recommended.

2028. Jacobs, Leonard. 1978. Menage: Vitamin B-12 in macrobiotic or strictly vegetarian diets. *East West Journal*. June. p. 10-11. [2 ref]

• **Summary:** A reader asks: "Many critics of a macrobiotic or strictly vegetarian diet point out the lack of a source of vitamin B-12. Can this essential vitamin actually be synthesized (or transmuted) by the body if one's diet is composed entirely of whole grains?"

Jacobs discusses vegetarian sources of vitamin B-12 (sea vegetables, microalgae [*Spirulina maxima*], and fermented soy products including soy sauce and miso), and the results of a B-12 deficiency—pernicious anemia. Dr. Wolfgang Tilling, who administered a diet of only soymilk to undernourished children in Germany, is said to have "discovered the synthesis of vitamin B-12 in the intestines of these children." Address: Publisher, East West Journal.

2029. MacKinnon, Jerry; Fiering, Steve. 1978. An invitation. *Soycraft (Lawrence, Kansas)* 1(3):1. June.

• **Summary:** "The workers of the Soy Plant Soy Dairy would like to invite you to a national conference which is to be held in Ann Arbor, Michigan" on July 28-30, 1978. "We expect to have technical workshops on tofu, tempeh, soymilk and miso production as a base to begin from."

Note: The Soycrafters Association of North America (SANA) was founded at this meeting. Address: The Soy Plant, 211 East Ann St., Ann Arbor, Michigan 48104. Phone: (313) 663-0500.

2030. Shurtleff, Bill. 1978. News from New-Age Foods Study Center. *Soycraft (Lawrence, Kansas)* 1(3):3-5. June.

• **Summary:** This open letter begins: "Dear Soycrafters of North America: There has recently been growing interest in North America in starting a Soycrafters Union or Cooperative, perhaps along the lines of Japanese National Tofu, Miso, Shoyu, Natto, etc. Unions [Associations]. Such a development would seem to represent a great leap forward, of benefit to many in the expansion of consciousness and production of quality soyfoods in the Western world."

The author then summarizes five major functions of Japanese national trade associations related to soy products, and suggests how each of these be adapted to present American conditions and consciousness which are very different from those in Japan: Purchasing soybeans, maintaining a list of member shops, doing "soyfood publicity," publishing a newsletter, and establishing and running a nationwide center, information clearing house, and school for teaching production of low-technology "soyfoods" to people from both developed and developing countries.

"How might this basic model be adapted to the United States? First, since soyfoods are still quite new in the USA, we might want to form one united front cooperative or union for all soycrafters or producers of soyfoods, rather than trying to form individual unions for tofu & soymilk, miso, tempeh, shoyu, etc. Given such a joint union, it would seem that all of the functions performed by the Japanese unions would be of great potential value to producers in North America. The key point, however, is that for the Union to work it must be financially viable and sound. Thus it must be created and supported by individual members who understand clearly that its functions are in their best interest, both in the short and long run."

"Second, we must remember that the number of shops presently producing soyfoods here is still very small. We have the names of 95 tofu shops and/or soy dairies in the United States plus 6 more in Canada, 9 tempeh shops, 8 miso shops, and one shoyu factory (Kikkoman). Of these, about 41 of the tofu shops and soy dairies, 5 of the tempeh

shops, and 2 of the miso shops are 'new-age' types, newly started by Caucasian Americans. This latter group would probably form the initial nucleus of the Soycrafters Union, however after the benefits of membership could be clearly demonstrated, the more conservative Japanese producers might be eventually interested in joining."

"At the proposed First North American Soycrafters Convention to be held in Ann Arbor [Michigan] July 28-30 the above suggestions might be discussed one by one..."

At the end of the article is a form which new or existing tofu or soymilk manufacturers in the U.S. are invited to fill out and return to Shurtleff so that he can list them in the next edition of *The Book of Tofu*. It asks for the name, address, and phone number of the company, the person(s) in charge, the date tofu or soymilk production started, the approximate cost of getting started, the average quantity of soybeans used per week, the soyfoods produced (in order of importance), the main pieces of equipment purchased, and equipment the company plans to purchase in the near future.

Note the early use of the terms "soyfoods" and "soyfood" in this article. The term "soyfoods" was coined by Surata Soyfoods of Eugene, Oregon, in Dec. 1976.

Note 2. This is the earliest document seen (Oct. 2008) that contains the term "low technology" (or "low tech"). Shurtleff coined this term to refer to soyfoods that could be made, and had long been made, using simple, traditional technologies, appropriate to Third World countries or relatively poor areas. Address: Director, New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

2031. **Product Name:** Miso.

Manufacturer's Name: Soy Plant (The).

Manufacturer's Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.

Date of Introduction: 1978. June.

New Product-Documentation: Talk with Steve Fiering, 1988. June 10. This was the company's fifth commercial product. "We did sell the batches that were good but we didn't have any consistency. Some batches came out very good but some were sour. It never became much of a product, so we dropped it. We probably sold some short-term miso before the 1978 summer conference, out of the deli. We could sell anything we put out there if it was good. I think the changing temperature in the building, and particularly the heat in the summer was the problem."

2032. Westbrae Natural Foods. 1978. Price list [Catalog]: June 1978. Emeryville, California: Westbrae. 30 p. 22 by 28 cm.

• **Summary:** On the cover are pink, red and light blue Japanese plum blossom crests against a blue background. Address: P.O. Box 8711, Emeryville, California 94662. Phone: 415/658-7518.

2033. Fiering, Steve. 1978. Re: Update #2 on plans for Soycrafters Convention at The Soy Plant in Ann Arbor, Michigan. Letter to William Shurtleff and Larry Needleman in California, July 8. 5 p. Handwritten, with signature.

• **Summary:** "Bill and Larry—I thought it's time to fill you both in on the latest conference details. Things are looking very good. Forty people have said they are planning to attend representing 23 different shops or shops to be. This does not include Michigan folks. I expect about 20 Michigan people. The Media, *New Age Journal*, *East-West*, etc. have not responded... "The basic layout will revolve between The Soy Plant and the dorm where about 2/3 of the people will stay." The latest proposed schedule is enclosed; comments are invited. The schedule begins: [Friday] "4-6 p.m.—Check in at Soy Plant. Take people to the dorm or the houses they will be staying in. 6-7—Dinner. 7:30-9—Opening session. Soy Plant introductions and short rap from each delegate. Discussion of the proposed schedule and any special points people want to work on. We have a retail shop at the front of our building which will hold 60 people comfortably, so a lot of conferring can be done easily right here. 9:30-11:00—We feel that specific slide shows would be done best after dark. So we would walk up to the dorm, about 6 blocks, and see Bill's [Shurtleff] miso slides up there (we have access to conference rooms and lounges up there). We felt that miso would be of least interest to most of the delegates so we put it on Friday night so latecomers will miss less.

"Sat. One of the frequent comments on your schedule, Bill, was that it is too academic, especially for the folks who are just starting so... We plan on having two activities at once to try and allow people to get what they need."

The Saturday and Sunday schedules are both given. Each day begins with breakfast at 8:00-9:00 a.m., followed by non-stop workshops and discussions. On Saturday evening slide shows will be from 8-11:00 p.m. On Sunday morning: "9:30-12:00—Starting a North American Soycrafters Union or Co-op."

The letter ends: "I feel that the most important ingredient is the spirit of the participants, and if correspondence is a true indication, the spirit will indeed get us all high!

"Hope to hear from you soon. Steve." Address: The Soy Plant, 211 East Ann St., Ann Arbor, Michigan 48104. Phone: (313) 663-0500.

2034. Wells, P. 1978. Macrobiotics: A principle, not a diet. *New York Times*. July 19. p. C1, C8, C9.

• **Summary:** Some critics, including Harvard nutritionist Dr. Frederick Stare, have become believers. Bill Dufty tells his story. Address: Staff.

2035. Shurtleff, William. 1978. Re: Proposal to add new categories and information about soyfoods to *Soybean Digest Blue Book*. Letter to Mr. Lynn Munyer, editor, *Soybean Digest Blue Book*, P.O. Box 158, Hudson, Iowa 50643, Aug. 21. 2 p. Typed, with signature on letterhead.

• **Summary:** Contents: Introduction to publications and work of New-age Foods Study Center. Statistics on consumption of traditional soyfoods in East Asia. Tofu. Soymilk. Miso. Shoyu. Tempeh. Natto. Conclusion: "Therefore we feel it is in the interest of the ASA [American Soybean Association] and American Soybean farmers to do more to introduce these traditional soyfoods to people around the world via your publications." Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

2036. Kao, C.; Robinson, R.J. 1978. Nutritional aspects of fermented foods from chickpea, horsebean, and soybean. *Cereal Chemistry* 55(4):512-17. July/Aug. [9 ref]

• **Summary:** Tempeh and miso were made from chickpeas (*Cicer arietinum*), horsebeans (*Vicia faba*), and soybeans. Rats on freeze-dried tempeh diets ate more, gained more weight, and had higher PERs than did rats eating autoclaved (unfermented) grits. The PER of chickpea tempeh was slightly higher than that of soybean tempeh. The PER of horsebean tempeh was significantly lower than that of either of the other two tempehs. Misos contained about 25% salt on a dry weight basis—too much to be acceptable rat diets. Address: Dep. of Grain Science & Industry, Kansas State Univ., Manhattan, Kansas 66506.

2037. Westbrae Natural Foods. 1978. Results of miso survey, at Wholly Foods in Berkeley, California, Aug. 14-15. Berkeley, Calif. 1 p. Unpublished manuscript.

• **Summary:** 59 people were polled on their uses of and attitudes toward miso. 33 people used it in soups, 12 in sauces, 9 in spreads. 29 had a favorable attitude toward miso, 17 unfavorable, 13 neither. Of the unfavorables, 9 said miso is too salty, 5 don't know how to use it, 3 said its inconvenient to use. Of the favorable, 17 said it is a natural food, which meat is not. Address: Berkeley, California.

2038. Lachman, Gaella; Elwell, Christian. 1978. Making miso in America. *East West Journal*. Sept. p. 54-59.

• **Summary:** A colorful account of making 1,000 lb of miso in the spring of 1978 with Noboru Muramoto at Asunaro, on Mt. Veeder, at 4600 Cavedale Road, Glen Ellen, California 95442. Phone: (707) 996-5365. Christian writes in the introduction that several years ago, upon returning from India and recovering with a serious bout with jaundice, he came across Naboru [sic] Muramoto's book, *Healing Ourselves* (Avon Books, 1973), "one of the few reliable guides to preventive medicine now available." After this he began to use food as medicine for the first time. Within a

year he was attending seminars by Michio in Boston, Massachusetts, and learning about macrobiotics. He later learned that Mr. Kushi and Mr. Muramoto had both been students of George Ohsawa. While in Boston, Christian met Gaella, his wife to be. They left Boston to visit California, and from January to April 1978 they studied at Asunaro Eastern Studies Institute (established in the fall of 1976) in Glenn Ellen, California, with Mr. Muramoto. By mid-April, in addition to miso, they had also learned to make soy sauce, saké, tofu, seitan, mochi, bran pickles, sauerkraut, tekka [miso], and bread. Natto making is also taught. A large photo shows the two of them cooking soybeans for making miso.

Note: Talk with Christian Elwell. 1996. Sept. 7. While Christian and Gaella were at Asunaro, Thom Leonard visited for a few days. Thom and Christian met and talked, recognized that they had a lot in common, and stayed in touch afterward. Christian eventually purchased Thom's Ohio Miso Co. He was already making miso experimentally, and he had plans to go back to Ohio to make commercial miso.

2039. Mutual Trading Co., Inc. 1978. Price book: Miyako brand. Fancy Oriental Japanese foods—Importer & Distributor. Los Angeles, California. 60 p. Sept. Index. 22 cm. [Eng]

• **Summary:** Includes: Miso (p. 3-4). Soy sauce and other sauces (p. 4-5). Dried seaweed (p. 32-33). Vegetable (edamame, natto {Miyako brand}, inari age, konbu natto, p. 37). Salted black bean (Chinese, p. 60). Address: 431 Crocker St., Los Angeles, California 90013. Phone: 213-626-9458.

2040. Shurtleff, William. 1978. New food from old ways. *Agenda (US-AID, Washington, DC)* 1(8):18-20. Sept.

• **Summary:** This periodical is published by the U.S. Agency for International Development. Discusses: Soybeans and world hunger, the inefficient ways that soybeans are used in industrialized countries by feeding them to animals, and alternative ways of using them in foods such as tofu, soymilk, tempeh, and miso. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2041. **Product Name:** Miso Cheese (Tofu Fermented in White Miso).

Manufacturer's Name: Soy Plant (The).

Manufacturer's Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.

Date of Introduction: 1978. September.

Ingredients: Firm tofu, miso.

Wt/Vol., Packaging, Price: Sold fresh in slices in a deli.

How Stored: Refrigerated.

New Product–Documentation: Interview with Steve Fiering. 1988. June 10. He is at 30 Newell Rd., Palo Alto, California 94303. Phone 415-326-7123. “This product was developed in the fall of 1978 by a person name Jura (pronounced Ju-RAH) McDowell, who was a black American Rastafarian and a vegan from Alabama. He made very firm tofu, sliced it into ½-inch-thick slices, and embedded it in young, usually sweet white miso in a crock. Some of the miso they made in house, and some they bought from Westbrae, who bought it from Miyako/Cold Mountain in Los Angeles. The tofu was not wrapped in cheesecloth. After about 4-6 weeks they would remove the tofu, scrape off the miso for use later in cooking, then sell the tofu slices in the deli. The tofu was never pureed (like Simply Natural did) to give a cream-cheese consistency. By the time it had been through the fermentation it has lost the rubbery aspect of its texture. It was pretty soft, but we never processed it any further. It was sort of like the cream cheese you buy in a slab, wrapped in a piece of Saran. It was always quite tasty when we would make it. I always thought it was great, and a great original idea. It was very rich, kind of like Brie. We used to love it when we could get it. We just never sold it outside our Soy Deli and even in the Deli we usually had a very limited amount of it. People would use it as a spread. It was quite expensive for us to make, probably over \$6 a pound, mainly because of the cost of the miso. That was prohibitive, so it never really became anything. We could never make any money on it. Jura also made delicious stuffed tofu pouches (Agé) and yuba rolls that were sold in the Deli. He did a lot of experimenting.”

2042. **Product Name:** Tofu Tahini Spread.

Manufacturer’s Name: Soy Plant (The).

Manufacturer’s Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.

Date of Introduction: 1978. September.

Ingredients: 1980: Tofu, tahini, sunflower seeds, miso [sweet], shoyu, corn oil, vinegar & spices.

Wt/Vol., Packaging, Price: 12 oz plastic tub.

How Stored: Refrigerated.

New Product–Documentation: Steve Fiering. 1979. Whole Foods. Jan. p. 38, 40. “A Midwestern Interest in Tofu.” This is included in a list of products presently produced by the company. Talk with Steve Fiering. 1988. June 10.

Square Label for “Tofu tahini sandwich spread” in Soy Plant scrapbook from about 1980. 3 by 3 inches. Black on white. 12 oz. Zip: 48104.

2043. Mori, Shigeru. 1978. Re: Cold Mountain Dry Koji. Letter to Lorenz A. Schaller, Natural Order Co., P.O. Box 4, Angelus Oaks, CA 92305, Oct. 24—in reply to inquiry. 1 p. Typed, with signature on letterhead. [Eng]

• **Summary:** Suggests that Mr. Schaller order Cold Mountain Dry Koji from Erewhon Natural Foods. Note: This koji is made by Miyako Oriental Foods, a subsidiary of Mutual Trading Co. Address: Mutual Trading Co., Inc., 431 Crocker St., Los Angeles, California 90013. Phone: 213-626-9458.

2044. Daniels, Stevie. 1978. I was a sucker for protein. *East West Journal*. Oct. p. 60-62.

• **Summary:** Her introduction to soyfoods came the hard way—by trying a “can of textured soy protein”—the food that could end world hunger. She tried preparing it in many different ways. “Nothing worked. It was terrible. I threw it on the compost pile and watched squirrels, rats, and chipmunks detour around it for weeks... It was easy to see why even starving people gave thumbs down to this orangish, gloppy, spoiled-tasting canned concoction.” She learned that the oil companies extract the oil from soybeans with hexane solvent then use the defatted leftovers to feed livestock and make textured soy protein.

Later she became a vegetarian, tried cooking whole soybeans, and then “fresh soybeans” in the pods—which a local organic farmer brought to her co-op. Finally one day she found a brochure stating: “The four main foods made from soybeans are tofu (soybean curd), tempeh (fermented soyburger), shoyu (soy sauce), and miso (fermented bean paste).

“I was amazed. The Eastern people, one-fourth of the world’s population, had known how to use soybeans for centuries. I learned they also sprouted the beans...” She tried these foods and liked them. Bill Shurtleff stopped by the EWJ’s office after attending the first national soyfood conference in Ann Arbor, Michigan. She describes their discussion, including the founding of the Soycrafters Association of North America. At the end is a list of resources and a bibliography of EWJ articles on soyfoods: Larry Needleman (Soycrafters Assoc. of North America, P.O. Box 76, Bodega, CA 94922. Phone: (707) 876-3341). Bill Shurtleff, The Farm (Summertown, Tennessee), Asunaro Eastern Studies Institute (Attn: Dina Drago, 4600 Cavedale Rd., Glen Ellen, California 95442. Phone: (707) 996-5365. Miso and shoyu production taught by Naboru [sic, Noboru] Muramoto).

2045. *East West Journal*. 1978. East West mail order (Ad). Oct. p. 68-69.

2046. Jacobs, Leonard. 1978. Menage: Where can I get information about traditional Japanese foods—like miso, soy sauce, umeboshi, sea vegetables—that are sold at my natural food store? L. Paulsen, Chicago, Illinois. *East West Journal*. Oct. p. 12.

• **Summary:** Answer: One of the largest exporters of these foods, Muso Co., has recently printed a series of pamphlets

describing how these products are made and the nutritional value of each. The pamphlets are available from: Stephen Earle, Muso Co., Ltd., Nishishinmachi 1-2-18, Wakae, Higashi-Osaka 578, Japan. Address: Publisher, East West Journal.

2047. Shurtleff, William. 1978. Protein source for the future. *PHP (Japan)*. Oct. p. 8-18, 79-82. Illust. 18 cm.
• Summary: Contents: Introduction. Ten reasons why soybeans will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost source of protein in almost every country of the world. 3. High nutritional value. 4. Time tested for over 2,000 years. 5. Remarkably versatile. 6. Appropriate technology ("Traditional soyfoods can be produced in cottage industries"). 7. New dairylike products. 8. Soybeans are hardy and adaptive. 9. Free nitrogen fertilizer from nodules on soybean plants. 10. Great productivity potential.

Discusses new patterns of soy protein utilization, with specific reference and descriptions of tofu, soymilk, tempeh ("Indonesia's most popular soyfood"), miso, shoyu, whole dry soybeans, roasted soybeans, fresh green soybeans, soy flour, kinako, soy sprouts, and textured soy protein (TVP), yuba, and natto. Concludes with a discussion of new developments in the Western world. Address: New-Age Foods Study Center, P.O. Box 234 (951½ Mountain View Dr.), Lafayette, California 94549. Phone: 415-283-2991.

2048. *Sunset (Menlo Park, California)*. 1978. A western role for miso. 161:202. Oct.

• Summary: This 1/3 page article gives a brief description of miso, then recipes for Miso marinated grilled mushrooms, and Miso deviled eggs.

2049. Westbrae Natural Foods. 1978. Price list [Catalog]: October 1978. Emeryville, California: Westbrae. 34 p. 22 by 28 cm.

• Summary: On the cover are orange and yellow Japanese plum blossom crests against a brown background. New products (written in all capital letters): Wholewheat soy spirals (pasta). Address: P.O. Box 8711, Emeryville, California 94662. Phone: (415) 658-7518 (orders).

2050. Paino, John. 1978. Re: Current developments at Nasoya. Letter to William Shurtleff at New-Age Foods Study Center, Nov. 20. 3 p. Typed, on letterhead.

• Summary: Written after Shurtleff and Wataru Takai paid a surprise visit to Nasoya in the summer of 1978: "I'm sure you felt my surprise when in the middle of our daily tofu making routine, I turned around and spotted the man whose *Book of Tofu* became the impetus for our shop. We were all so pleased by your visit.

"Sarah, my wife, was making a delicious tofu cream cheese, and cottage cheese for sale in and around Boston.

She is a wonderful cook and with the aid of her friend, Winnie Bourgeois, developed some recipes which are on the following page. We are happy to pass these on to you. We also hope to be marketing these products again in 1979.

"I would like to wish you great success with your new Book of Tofu. It is also our dream at Nasoya, to help improve the health and happiness of all people by making available a more natural and healthful diet. We are grateful to you for your contribution in the preparation and use of Tofu, Miso, and other foods. These are already becoming important staple foods for many people throughout America, enabling them to choose and eat in a pure and balanced way."

Note: The bottom one-third of this letter has been cut off and is missing. Address: President, Nasoya Foods, P.O. Box 841, Leominster, Massachusetts 01453. Phone: 617-537-0713.

2051. **Product Name:** Samurai Hero (Brown Rice & Tofu Sandwich in a Chapati).

Manufacturer's Name: City Samurai.

Manufacturer's Address: San Francisco (actually Berkeley), California.

Date of Introduction: 1978. November.

Ingredients: Brown rice, tofu, carrot or seasonal vegetable, sea salt, lettuce, sprouts, green onion, safflower oil, whole grain chapati, barley miso, sesame butter, spring water, tamari.

Wt/Vol., Packaging, Price: 9 oz (at least).

How Stored: Unrefrigerated and perishable.

New Product-Documentation: Talk with Paul Duchesne. 1989. July 31. Chris Smith, after discussing the matter with Duchesne (who was in Boston), showed Joe Nixdorff (who had been coming to macrobiotic potluck dinners) how to make the BRTS in about Nov. 1978. He made it every other day and sold it at multiple outlets until about March 1982, when competition from Wildwood Natural Foods put him out of business. Though the label shows San Francisco as the business location, this was not true; the business was actually in Berkeley. At one time he was making the sandwiches at Pacific Tempeh run by Travis Burgeson.

Talk with Travis Burgeson. 1989. Aug. 7. Joe Nixdorff introduced this sandwich before 1980. He started making it at Tony Plotkin's mochi plant [Grainaissance], then expanded into Travis' tempeh plant. Travis estimates that Joe made about 750 sandwiches/week. He delivered them himself in a car to natural foods stores, mostly in Berkeley and the San Francisco Bay Area. Joe was squeezed out of business by Wildwood before Travis sold his business in 1983. This sandwich was in no related to the Samurai cart that sells sandwiches in Berkeley. Label sent by Paul Duchesne. 1989. Aug. 11. Black on gold. "A complete meal for today's warrior. Organically grown ingredients used when available."

2052. **Product Name:** Natural Instant Miso-Cup (Miso Soup).

Manufacturer's Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer's Address: Box 271, Union, NJ 07083.

Date of Introduction: 1978. November.

Ingredients: Soybeans, rice, sea salt, onions, parsley.

Wt/Vol., Packaging, Price: Twelve 8-oz. servings in six flavor-tight envelopes. Each envelope weighs 18 gm.

How Stored: Shelf stable.

New Product–Documentation: Label. 1979, undated. 3.5 by 4.75 inches by 1.75 wide. Paper box. Red, blue, green and black on gold. Drawing of Japanese woman by a hearth serving miso soup (adapted, with permission, from *The Book of Miso* by Shurtleff & Aoyagi), and pictures of soup and vegetables in the foreground. "Natural/instant. Pure vegetarian soup in seconds. Original golden light." Gives directions, serving ideas, and "A short history of Miso," quoting from *The Book of Miso*.

Ad in *Whole Foods*. 1979. Jan. p. 10. "Introducing ... Soup in Seconds. Natural/Instant Miso-Cup. The Long Awaited Combination of Purity and Convenience. Two 8 oz. servings per packet. Six packets per display box. Twelve boxes per case.

Ad in *Vegetarian Times*. 1979. Sept/Oct. p. 9. "Have you ever wished..."

Ad in Tom Riker and Richard Roberts. 1979. *The Directory of Natural & Health Foods*. p. 57. "Introducing ... Soup in Seconds."

Ad in *Vegetarian Times*. 1980. No. 40. Aug. p. 12. "The Best of Both Worlds. Miso Cup. Convenience Without Compromise."

Article by Richard Leviton in *Soyfoods*. 1982. Summer. p. 34-35. Joel and Diondra Dee of Edward & Sons live in Saluda, North Carolina. Their instant Miso Cup, made of freeze-dried miso and vegetables, was launched in 1978. "They hitched their mobile home to the back of a Chevy van and toured the Northeast, reportedly for two years, handing out samples of *Miso-Cup* and collecting business cards and orders. In 1980 they added a second flavor (with seaweed) while a third is planned for late 1982."

"*Miso-Cup* is a vegetarian, natural foods version of Lipton's *Cup-A-Soup*. A photo shows Joel Dee. Spot in *Soyfoods*. 1982. Summer. p. 55. "Miso Soup in Seconds." Sold in golden light and rich savory with seaweed flavors. Label, box. Reprinted in *Soyfoods Marketing*. Lafayette, CA: Soyfoods Center. "Pure Vegetarian Soup in Seconds."

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239. "In the fall of 1978 Edward & Sons Trading Co., under the direction of Joel Dee, introduced Miso-Cup. Miso cup soon became the most widely advertised miso product in America."

Talk with Joel Dee. 1988. June 15. He pioneered convenience natural foods in America, starting with Miso Cup. He is in the process of moving to Carpinteria, California. Ad in *East West*. 1988. Feb. p. 27. "Warm up with an 'old friend' Miso-Cup." Address is now 1115 Lousons Rd., Union, New Jersey 07083.

Talk with Joel Dee. 1994. July 4. Miso Cup is the flagship of his product line. The miso is freeze dried. Because of the falling value of the U.S. dollar against the Japanese yen, importing Miso Cup from Japan is increasingly expensive, so Joel is now looking for a way to have this "instant savory soup or seasoning" made entirely in America.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239. "In the fall of 1978 Edward & Sons Trading Co., under the direction of Joel Dee, introduced Miso-Cup. Miso cup soon became the most widely advertised miso product in America."

Talk with Joel Dee. 1988. June 15. He pioneered convenience natural foods in America, starting with Miso Cup. He is in the process of moving to Carpinteria, California.

2053. Fortner, Heather J. 1978. *The limu eater: A cookbook of Hawaiian seaweed*. University of Hawaii Sea Grant Program, 2540 Maile Way, Spalding Hall 253, Honolulu, HI 96822. ix + 107 p. Illust. Index. Nov. 23 cm. Sea Grant Miscellaneous Report UNIHI-SEAGRANT-MR-79-01. [39 ref] Address: Honolulu, Hawaii.

2054. Nomura, Abraham; Henderson, B.E.; Lee, J. 1978. Breast cancer and diet among the Japanese in Hawaii. *American J. of Clinical Nutrition* 31(11):2020-25. Nov. [16 ref]

• **Summary:** The authors studied the diets of 6,860 men to examine the relationship between soy consumption and breast cancer risk. Soy intake was measured twice: Once during the period 1965-1968 and again during 1971-1975. During the first period, no association was observed between soy intake and breast cancer. However for the second period an inverse association was found between intake of miso soup and risk of breast cancer; the more miso soup consumed, the lower the rate of breast cancer. And a trend was found toward an inverse association between intake of tofu and subsequent risk of breast cancer; the more tofu consumed, the lower the rate of breast cancer.

Note: This is the earliest document seen (May 2000) indicating that soy may prevent breast cancer in humans. Address: 1. Director, Japan-Hawaii Cancer Study; 2. Advisor, Japan-Hawaii Cancer Study; 3. Biostatistics consultant, Japan-Hawaii Cancer Study. All: Kuakini Medical Center, Honolulu, Hawaii 96817.

2055. Shurtleff, William; Aoyagi, Akiko. 1978. Cooking with miso. *Alternatives (Miami, Florida)*. Nov. p. 48-53.
 • **Summary:** Excerpts from *The Book of Miso*, by Shurtleff & Aoyagi. Contents: Introduction to miso, basic types, brief history. Miso as a food (nutritional value). Buying and storing miso. Using miso as a seasoning. Miso recipes (16 recipes). Contains nine illustrations from *The Book of Miso*. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2056. Fleiss, Paul M.; Douglass, J.M.; Wolfe, L. 1978. Vitamin B-12 deficiency in strict vegetarians. *New England J. of Medicine* 299(23):1319. Dec. 7. [2 ref]
 • **Summary:** This letter was written in response to a letter by Higginbottom et al. in the Aug. 17 issue of JAMA. "A nutritionally adequate, strict vegetarian diet is, in fact, possible. Natural vitamin B-12 is synthesized by micro-organisms, and, accordingly, vegans may obtain vitamin B-12 from soy sauce (3 micrograms per 5 ml), miso, and tempeh, as well as certain seeds and nuts, or by colonic synthesis when adequate unheated seeds are eaten (U.D. Register, personal communication)... Our experience with hundreds of healthy, breast-fed infants indicates that omnivores, lacto-ovo-vegetarians, lacto-vegetarians, and strict vegans (some practicing lifetime avoidance of animal products) can nourish their infants adequately for the first few months of life without supplementation." Address: 1. USC School of Medicine; 2-3. Kaiser-Permanente Center, Los Angeles, California 90027.

2057. Autumn Press, Inc. 1978. Thoughtful gift-giving: Books by William Shurtleff and Akiko Aoyagi (Ad). *East West Journal*. Dec. p. 101.
 • **Summary:** This ¼-page black-and-white ad shows the cover and gives a brief description of three books: *The Book of Tofu* (\$7.95 / \$14.95). *The Book of Kudzu* (\$4.95 / \$10.00). *The Book of Miso* (\$7.95 / \$14.95). Address: Box E, 25 Dwight St., Brookline, Massachusetts 02146.

2058. *East West Journal*. 1978. Soy boom. Dec. p. 18.
 • **Summary:** "Over seventy people involved in the production of soy foods met in Ann Arbor, Michigan, this summer and established the Soycrafters Association of North America (SANA). The nonprofit organization will facilitate communication among the 140 businesses producing tofu, miso, soymilk, or tempeh. SANA reports soy foods have been received enthusiastically across the United States and Canada. Seventy new tofu shops and soy dairies have been established in thirty-one states in the last two years. For further information write SANA, Box 76, Bodega, California 94922."

2059. Kushi, Aveline Tomoko. 1978. How to cook with miso. New York, NY: Japan Publications Trading Co. 127 p.

Dec. Illust. Index. 26 cm.

• **Summary:** Contents: Foreword. Preface. Introduction. 1. How to use miso for soup. 2. Miso soup recipes. 3. Miso condiments and relishes. 4. Miso sauces and spreads. 5. Side dishes with miso. 6. Miso pickles. 7. Miso for fun. 8. Make your own miso. Glossary. Standard tables of food composition.

"Happiness is the realization of one's eternal dream." Michio Kushi says that "The cooking of food is the highest of all human arts." Page 25, under "Special suggestions for miso," notes that miso soup with mochi stops bed-wetting, and gives a mother who has just had a baby strength to recover more quickly and also help in producing milk for breastfeeding. "Miso soup is good for relieving the effects of tobacco toxication, or too much smoking. In the old days in Japan, the long tobacco pipes were often washed in miso soup. It was said that this made them very clean. The morning after drinking too much alcohol, miso soup is very effective for restoring energy and clear thinking. When you burn your skin, if at that time you don't have any tofu or green vegetables available to apply to the burn, you can use miso as a healing paste."

The section titled "What is miso? (Comment from Michio Kushi)" (p. 27) states: "According to Japanese mythology, miso was a gift to mankind from the Gods, to assure man's health, longevity, and happiness. Miso has been an important food in the Orient since the beginning of its civilization, and now is becoming a popular food in the West." Note: The source of this mythological idea is not given.

Pages 55-57 contain a "Basic Recipe for Homemade Seitan," but it is not used with miso.

2060. **Product Name:** Cold Mountain Firm Granular Rice Koji.

Manufacturer's Name: Miyako Oriental Foods, Inc.

Manufacturer's Address: 404 Towne Ave., Los Angeles, CA 90013.

Date of Introduction: 1978. December.

New Product-Documentation: Label. 1978. Shurtleff & Aoyagi. In 1978 Mr. Noritoshi Kanai of Mutual Trading Co. / Miyako Oriental Foods asked William Shurtleff and Akiko Aoyagi of Soyfoods Center to develop for him a trademark and package designs for him miso and koji. They recommended "Cold Mountain" as a brand name and also developed brochures and recipes explaining how to use the koji to make miso and amazake. 1983. *The Book of Miso*. 2nd ed. p. 238.

Economic World. 1987. June. p. 46. This article says that Miyako makes Amazake Drink in Almond, Chocolate, and Strawberry flavors. Bill Schiering reports that they do not; but they do supply several amazake manufacturers with koji.

2061. Swan Food Corp. 1978. Collected papers (Archival collection). Miami, Florida. 5 file folders, 1½ linear inches.

• **Summary:** Swan Foods was the first soyfoods company in the United States to make a wide variety of innovative soyfoods products. The company's papers are located at Soyfoods Center in Lafayette, California. In December 1978, when the company declared bankruptcy after about two intense years in business, Danny Paolucci cleaned out the office, keeping all documents that he believed might be of future importance. He kept them for 19 years, then sent them to Bill Shurtleff at Soyfoods Center at Shurtleff's request. Most of the papers relate to recipes. There are no commercial papers (invoices, ledgers, etc.).

Folder 1: Bulk soyfoods recipes, typed. Each recipe is typed on a sheet of 8½ by 11 inch lined paper. Recipes made in a Hobart mixer are marked with an asterisk (*) after the recipe name. The recipes (listed alphabetically) are: Baked tofu (with tamari sauce for marinade, bake at 350°F for 30-35 minutes). Caraway tofu (add 5 ingredients to curdling tofu; stir and let curds form). Carob cream cake* with topping (incl. 2 gallons soymilk). Cashew carob swirl cake* (incl. 3 gallons soymilk). Devils food cream cake* (incl. 2 gallons soymilk and tofu topping). Eggless egg salad* (incl. 10 lb boiled and cooled Swan Tofu). Marinade for tofu (incl. 1 gallon tamari; mix all ingredients in a 5 gallon bucket, add sliced tofu, and seal). Soy burgers* (incl. 2 gallons each cooked rice and fresh okara, and 2½ cups tamari). Tofu chip dip* (large and small; the small incl. 6 lb tofu boiled and cooled, ¼ cup tamari, and ¼ cup umeboshi plum paste; the large incl. 42 lb tofu).

Folder 2: Lists of ingredients for various soyfoods products typed on Swan Foods' blue-on-white letterhead: The products (listed alphabetically) are: Carob swirl marble cake (non-dairy) (incl. soy milk). Okara granola. Roasted cashew tofu pie (incl. tofu and organic soy milk). Soyogurt (non-dairy): Note: These ingredients are handwritten below a sample label design on the back of the bottom half of a Swan Foods order form.

Folder 3: Legal-sized yellow lined note pad with 17 pages of notes written in blue ink—probably by Mary Pung. Subjects: *Nutrition Almanac* (soybeans and soy milk, p. 71; malt, p. 76). One page of 6 bibliographic references for publications related to soy, with a large note: "Sell *Book of Tofu*, etc. in shop." *The Health Food Dictionary & recipes* (mu tea, p. 102; soybean, p. 159; tofu, p. 174). *Diet for a Small Planet* (Lappé, 1975 ed.) (protein table III—Legumes; notes on tofu, p. 102, soy yogurt vs. milk yogurt, p. 128-29; tofu, p. 132). *Recipes for a Small Planet* (Ewald, 1973) (table showing no. of calories you have to consume in order to get one gram of usable protein, p. 16; notes on Net Protein Utilization). *Soybean Diet* (Herman Aihara, 1974) (table of nutrients in various foods; cow's milk, p. 44; soybeans can help with environmental problems, p. 4; soybeans vs. meat, p. 6, 8-9; tofu preparation, p. 115; nigari,

p. 116; nutrient value of tofu, p. 125). *The Book of Tofu* (Shurtleff & Aoyagi, 1975) (moral and emotional appeal, health, religion, ecology, economic, p. 19; complementary proteins, p. 24, 26; easy to digest and diet food, p. 26; low in saturated fats and cholesterol, linoleic acid, rich in minerals and vitamins, p. 27; nigari, free of chemical toxins, p. 28; quick and easy to use, p. 29; ecological, nitrogen from the air, p. 55; okara, p. 77-78; uses of agé, deep-fried tofu, p. 154-55; soymilk, p. 200). Six interesting teas.

Folder 4: Handwritten recipes (some very rough) and notes, in pen and pencil, mostly on individual sheets of paper. Soy-related recipe names (listed alphabetically): Basic tofu cheesecake. Basic tofu pie. Carob marble cake. Carob on blonde with tofu topping (also called Blonde on carob; baked, with soy milk). Carob tofu pie. Dips in tofu containers: Chive tofu dip, pimento tofu dip, sea tofu dip, Italian herb tofu dip, pimento olive dip (ideas only). Dressings: Miso, avocado, green goddess, creamy garlic, red Russian, spinach Russian (ideas only). Eggless egg salad. Eggless tofu salad. Frozen tofu cutlets. Mary's deluxe pizza (with tofu, from "Swan Food Corp."). Milk shake. Nori rolls. Okara products: burgers, burritos, felafels (ideas only). Pumpkin pie. Quiche with tofu. Sweetened carob shake. Tofu lemon pie. Tofu mayonnaise. Tofu pie filling. Tofu pudding, vanilla. Tofu quiche lorraine [Note: According to the *Joy of Cooking* (1975, p. 254-55), early recipes for quiche called for bacon and cream, but later cheese was added. When sautéed onions were included, the dish was called Quiche Alsacienne. Quiche Lorraine now typically contains egg white, bacon, milk or cream, and Swiss cheese]. Tofu rice salad. Tofu tarts. Tofu turkey (Barbara's, with stuffing). Yogurt dressing. The names of some people are included: Diane Kellar. Sherry (nori rolls).

Folder 5: Other. Tear-off recipes published by Natural Recipes, 94 Bourne St., Boston, Massachusetts 02130. Carob brownies (copyright 1974). Carob cake (copyright 1975). Note: Neither of these recipes contains any soy. Address: 5758½ Bird Road, Miami, Florida 33155. Phone: (305) 667-7141.

2062. Nihei, Takao. 1978. Hawai ni okeru Nihon-shu, miso, shōyu no rekishi [A history of Japanese sake, miso, and shoyu in Hawaii]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 73(5):346-50. [Jap]

• **Summary:** In 1868, the first year of the Meiji Period, the first 153 Japanese immigrants arrived in Hawaii on board the three-masted sailing ship Scioto (Saioto-go). They brought with them miso and shoyu. This article otherwise contains no mention of soyfoods.

Note: This document contains the earliest date seen for soybean products in Hawaii (1868); soybeans as such had not yet been reported by that date. Address: Honolulu Shuzo Seihyo Gaisha.

2063. Nihei, Takao. 1978. Hawai ni okeru Nihon-shu, miso, shōyu no rekishi. Miso, shōyu. Fu: Nenpyō oyobi raberu nado [A history of Japanese sake, miso, and shoyu in Hawaii: Miso and shoyu. With a chronology, copies of sake and shoyu labels, and a directory]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 73(7):542-49. [14 ref. Jap]

• **Summary:** By far the best history of miso and shoyu in Hawaii, this work is a treasure. Address: Honolulu Shuzo Seihyo Gaisha.

2064. **Product Name:** Soy Sannies. Miso Tahini (Sandwiches with Miso-Tahini Spread).

Manufacturer's Name: White Wave.

Manufacturer's Address: 1738 Pearl St., Boulder, CO 80302.

Date of Introduction: 1978.

Ingredients: Miso (fermented soybean paste), tahini (sesame butter), walnuts, honey on sunflower seed whole wheat bread with alfalfa sprouts, avocado, tomato and missing egg mayonnaise (soycream, safflower oil, vinegar, honey, lemon, soy sauce).

Wt/Vol., Packaging, Price: 7.5 oz.

How Stored: Unrefrigerated and perishable.

New Product–Documentation: Label. 1978, dated. 3.5 by 4 inches. Paper. Black on white, photocopy. Interview with Steve Demos. 1987. Oct. Sold commercially at a few nearby retail outlets.

2065. A Chinese-English dictionary. 1978. Beijing, China: Shang wu yin shu guan. 976 p. 27 cm. [Eng; Chi]

• **Summary:** This dictionary uses pinyin transliteration, with accents; Chinese characters are given and definitions are in English. Soy-related terms include: Doubanjiang (thick broad-bean sauce), doubing (defatted soya bean cake; bean cake), douchi (fermented soya beans, salted or otherwise [soy nuggets]), doufu (bean curd [tofu]), doufufang (tofu shop), doufugan (pressed tofu), doufunaor (jellied bean curd), doufuru (fermented bean curd), doufupi (skin of soya bean milk [yuba]), doujiang (soya-bean milk), douqi (bean stalk), douyou (soya-bean oil), douzha (residue from beans after making soya-bean milk; bean dregs [okara]), douzhipin (bean products).

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the word “doufugan” to refer to Chinese-style tofu.

Note 2. This is the earliest English-language document seen (Oct. 2008) that uses the term “doufupi” (regardless of hyphenation or spacing) to refer to yuba. Address: Peking, China.

2066. Beuchat, Larry R. 1978. Food and beverage mycology. Westport, Connecticut. AVI Publishing Co. x + 527 p. See p. 224-42. Illust. Index. 23 cm. [300+* ref]

• **Summary:** Chapter 9, “Traditional fermented food products (p. 224-53), by Larry R. Beuchat, is cited separately.

In Chapter 13, “Metabolites of Fungi Used in Food Processing” (p. 368-96), by R.J. Bothast and K.L. Smiley, the section on enzymes (p. 378) begins: “Fungal enzymes have been used for hundreds of years, especially in the Orient. However, modern industrial enzyme technology probably started with Takamine (1894) [Note: In Sept. 1894 he was issued two U.S. Patents for “Process of making diastatic enzyme,” Nos. 525,820 and 525,823] and his work with *Aspergillus oryzae*. Today many industrial enzymes are of fungal origin.” These include α -amylase (from *Aspergillus oryzae* and *A. niger*), glucoamylase, pectic enzymes or pectinases, naringinase, invertase (sucrase), α -galactosidase, lactase (β -D-galactosidase), protease (from *Aspergillus oryzae*), rennet (called rennin, if pure; from *Mucor pusillus*, *Mucor miehei*, or *Endothia parasitica*; used in many types of cheeses), and glucose oxidase, cellulase, lipase, catalase.

There are also chapters on: 14. “Mycotoxins,” by N.D. Davis and U.L. Diener. 15. “Methods for detecting mycotoxins in foods and beverages,” by L.B. Bullerman. 16. “Methods for detecting fungi in foods and beverages,” by B. Jarvis. Address: Assoc. Prof., Dep. of Food Science, Agric. Exp. Station, Univ. of Georgia, Experiment, GA.

2067. Beuchat, Larry R. 1978. Traditional fermented food products. In: L.R. Beuchat, ed. 1978. Food and Beverage Mycology. Westport, Connecticut. AVI Publishing Co. xi + 527 p. See p. 224-53. Chap. 9. [69* ref]

• **Summary:** Contents: Introduction, Koji. Soybeans: Shoyu, miso, natto (incl. itohiki-natto, yukiwari-natto, and hama-natto / hamanatto), sufu, meitauza, témpé. Peanuts: Oncom. Rice: Lao-chao, ang-kak, idli. Maize: Ogi, kaanga-kopuwai, injera. Cassava: Tapé, gari. Taro (*Colocasia esculenta*): Poi. Cacao beans: Cocoa, chocolate, and chocolate liquor are products derived from cacao fruits (*Theobroma cacao*).

Tables show: (1) Some fermented foods of fungal origin. For each food is given: Product name, geography, substrate, microorganisms, nature of product, and product use. Soy-related products include: Chee fan, Chinese yeast, Hamanatto, ketjap, meitauza, meju, miso, shoyu, sufu, tao-si, taotjo, and témpé.

“Yukiwari-natto is made by mixing itohiki natto with rice koji and salt, and aging at 25 to 30°C for about two weeks.” Note 1. Yukiwari natto is natto resembling miso, featuring the stickiness (*nebari*) of natto and the sweetness of koji. It is made by a two-step fermentation. Another process: (1) Make the natto and the koji, separately. (2) Mince natto finely and mix it with koji, shoyu, and dashi made from kombu. Ferment at 30-33°C for 30-40 days.

Note 2. This is the earliest English-language document seen (Aug. 2006) that mentions the term yukiwari-natto (or

yuki-wari natto). Address: Dep. of Food Science, Agric. Exp. Station, Univ. of Georgia, Experiment, GA.

2068. Calella, John R. 1978. *Cooking naturally: An evolutionary gourmet cuisine of natural foods*. Berkeley, California: And/Or Press. ix + 112 + 5 p. Illust. by Pedro J. Gonzalez. Index. [81 ref]

• **Summary:** The author of this vegetarian cookbook, of Italian ancestry, is popularly known as “Organic John.” He likes to use fresh foods, and he has a call-in radio show in San Francisco. In chapter 4, Ingredients (p. 16-), he discusses soya butter [margarine], miso, tamari, instant protein powder (incl. Shaklee’s Instant Protein), lecithin granules, Soyamel powder (powdered soymilk made by Worthington Foods), Balanced protein seasoning (powdered HVP made from soybeans).

Chapter 10 (p. 79-83) contains a long section on soya beans, with recipes: Homemade soya bean curd (tofu). Things you can do with tofu. Soya patties (with dry soya beans). Soya bean loaf. Green soya bean mix (with dry green soya beans). Soya beans in a beet stew. Soya bean spread.

In the section on Fruit Sherbets, many of the recipes contain 2 tablespoons Soyamel (powdered soymilk) and lecithin granules. Address: Berkeley, California.

2069. Calkins, Peter H.; Huang, Kuang-Rong. 1978. *Soybean production in Taiwan: A farm survey*. AVRDC *Technical Bulletin* No. 11 (78-89). 27 p. (Shanhua, Taiwan). [15 ref. Eng]

• **Summary:** Describes profitability and yield from soybean, the motivations and problems of farmers, and the reaction of farmers in the past to measures such as the extension of improved varieties. Since 1973 scientists at the Asian Vegetable Research and Development Center (AVRDC) have been working to improve soybean’s contribution to consumer diets and farmer incomes in Asia. In Taiwan soybean is used as a source of cooking oil, “milk, beancurd, sprouts, fresh seed, dried seed, flour and a green vegetable (the stems and leaves are fried).” It is also used to make textured vegetable protein products such as artificial chicken and fish; when cooked with miso, soysauce, and various spices, these “are practically indistinguishable from the real versions. Entire banquets of rice and little else but soybean are routinely served in the vegetarian restaurants and Buddhist monasteries of Taiwan.”

“In 1976, the government of Taiwan started guaranteeing a price of US\$277/tonne to encourage farmers to plant more soybeans. The response has been modest, largely because soybeans have not been as profitable as competing winter crops, such as adzuki beans.” Table 1 (p. 2) shows that between 1967 and 1976, the area planted to soybeans in Taiwan decreased from 52,000 ha to 36,000 ha, the farm price increased from US\$188/tonne to \$256/tonne,

production decreased from 75,000 tonnes to 53,000 tonnes, but imports increased dramatically from 347,000 to 780,000 tonnes (more than doubling). Thus the total supply/consumption of soybeans in Taiwan (domestic production + imports) increased from 422,000 tonnes to 833,000 tonnes, while domestic production as a percentage of total consumption decreased from 18% to 6%.

“Before 1945 most soybean cultivars in Taiwan were of local origin, with an average yield of only 500-600 kg/ha. However, the government introduced Japanese cultivars such as ‘Shih-shih’ and Palmetto’ in 1952. Since the early 1960s, scientists in Taiwan have also worked to develop improved cultivars by crossing cultivars introduced from abroad (in this report, the former will be termed ‘improved’ and the latter ‘introduced’ cultivars). As a result, the percentage of farmers planting introduced and improved cultivars has increased steadily, from about 53% in 1963 to 92% in 1976 and yield has risen to 1.5 tonnes/ha.” Address: 1. Assoc. Agricultural Economist; 2. Research Assistant. Both: AVRDC, Shanhua, Taiwan.

2070. Duff, Gail. 1978. *Gail Duff’s vegetarian cookbook*. London: Macmillan. 374 p. Index. 23 cm.

• **Summary:** Pages 14-15 note that: “Products made from soya beans are very important in meatless diets...” She uses tamari, miso, whole dry soybeans, and soya flour, but has an intense dislike of TVP (textured vegetable protein). Soy-related recipes include: Soya mayonnaise (made with soya flour, p. 81-82). Barbecued soya bean and tomato spread (p. 246). Crunchy soya bean sandwich spread (p. 247). Miso, onion and parsley sauce (p. 319). Basic soya bechamel (p. 319).

The section titled “Soya beans” (p. 190-97) has a nice introduction followed by recipes for: Salted soya beans. Basic method for soya beans. Soya bean hot pot. Soya bean blanquette. Soya bean goulash. Soya bean and tomato casserole. Spiced lemon soya beans. Barbecued soya beans. Soya beans with cucumber–Chinese style.

2071. Duquette, Susan. 1978. *Sunburst Farm family cookbook: Good home cookin’ the natural way*. 2nd ed. Santa Barbara, California: Woodbridge Press Publishing Co. 303 p. Illust. by Donna Wright. Photographs by Mehosh Dziadzio. From the Sunburst Farms Communities. Recipe index. 23 cm.

• **Summary:** This book is identical to the 1976 edition except that it comes from Sunburst Farms Communities instead of The Brotherhood of the Sun. The title and first paragraph of the introduction have been changed to read: “Sunburst Farms Communities is a family of more than 300 people, who have dedicated themselves to living in harmony with all people and all things.” Address: Santa Barbara, California.

2072. Ford, Barbara. 1978. *Future food: Alternate protein for the year 2000*. New York, NY: William Morrow and Company, Inc. 300 p. Index. 22 cm. [40+ ref]

• **Summary:** The author concludes that soybeans are most likely to be the protein source of the future. Chapter 2, “The Cinderella Bean” (p. 32-53) and Chapter 3, “Soybeans, Oriental Style” (p. 54-71) both discuss the benefits of soybeans. Pages 37-38 note that soybeans were once called “haybeans” and their hay was called “haybean hay.” Note: This is the earliest English-language document seen that which uses the term “haybean” or “haybeans.”

The work of the USDA Northern Regional Research Lab. with soyfoods is described at length. Chapter 6, “It Ain’t (Just) Hay,” is about alfalfa leaf protein and leaf protein concentrate. Research on leaf protein “really started during World War II, when British scientist N.W. Pirie suggested the use of leaves to augment dwindling meat supplies... Pirie’s proposal never got underway during the war because of the costs involved, but after the war he was given a laboratory where he carried out most of the pioneering work on leaf protein.”

Chapter 9, “SCP: Promises, Promises,” is about single-cell proteins such as the bacteria *Cellulomonas* and *Pseudomonas* (the champion, which can double its weight in 9 minutes). A probable culprit in SCPs is “nucleic acids, which have been shown to cause elevated uric acids in humans if used over an extended period of time. Raised uric acid levels lead to gout, kidney stones, and gallstones. Some bacteria contain from 15 to 16 percent nucleic acids, a fairly high level. Yeasts and fungi contain from 6 to 11 percent, still a high level. Algae have less.” It is recommended that humans not consume more than 2 grams (0.7 ounces) or nucleic acids per day. Address: USA.

2073. Frazier, W.C.; Westhoff, D.C. 1978. *Food microbiology*. 3d ed. New York, NY: McGraw-Hill Book Co. xvi + 540 p. Index. 24 cm. [400+* ref]

• **Summary:** Contents: 1. Food and microorganisms. 2. Principles of food preservation. 3. Contamination, preservation, and spoilage of different kinds of foods. 4. Foods and enzymes produced by microorganisms. 5. Foods in relation to disease. 6. Food sanitation, control, and inspection.

In the section on “Oriental fermented foods” (p. 387-91), the following soy-related foods are mentioned: Koji (*chou* in Chinese), soy sauce, tamari sauce, miso, tempeh, natto, soybean cheese or *tou-fu-ru*. Address: 1. Univ. of Wisconsin 2. Univ. of Maryland.

2074. Hagler, Louise. ed. 1978. *The Farm vegetarian cookbook*. Revised ed. Summertown, Tennessee: The Book Publishing Co. 223 p. Illust. Index. 22 cm.

• **Summary:** An expanded and extensively revised version of its pioneering and very creative and influential

predecessor. There are excellent expanded sections on gluten (p. 76-81), tempeh and tempeh starter (p. 82-93), miso (p. 93), soymilk (p. 95-101), Ice Bean (soy ice cream, including recipes for 5 flavors), Frogurt (soymilk frozen yogurt, p. 107), soy yogurt (p. 108-13 including a non-fermented cheese made by draining soy yogurt curds in a cotton bag; from this “yogurt cheese” are made soy-based cottage cheese, sour cream, cream cheese, and cheesecake), tofu (p. 114-41), yuba (142-43), soy coffee, soy nuts, granola, and Soysage (p. 144-47), soy flour (p. 148-53), sprouts (incl. alfalfa, mung beans, and soybeans, p. 154-57). Address: Summertown, Tennessee.

2075. Kawamura, Wataru. 1978. *Miso shōyu* [Miso and shoyu]. Tokyo: Tokyo Shobo-sha. 376 p. 22 cm. Series: *Nihon no Aji Meicho Senshū* (Selected Great Books on Japanese Taste). Reprinted in 1983 as *Miso shoyu no hyakka* [Encyclopedia of miso and shoyu]. [Jap]

• **Summary:** Contents: Topography of miso in Japan (*Miso fudoki*, p. 7). Miso in festivals, rituals, customs, and sacred rites (*Miso saijiki*, p. 92). History of miso (p. 120). Classical miso cookery (short recipes, p. 139). Collection of beautiful words about miso in proverbs, poems, and songs (p. 169). A short history of shoyu (p. 187). Documents: History of miso and shoyu (p. 195). Kojiruien–Inshoku-bu (Food & drink section, on shoyu, p. 354). Chronology of miso (p. 366-72). Address: 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan.

2076. Kawamura, Wataru. 1978. *Miso shōyu no hyakka* [Encyclopedia of miso and shoyu]. Tokyo: Tokyo Shobo-sha. 376 p. 22 cm. Series: *Nihon no Shokubunka Taikei* (Japanese Food Culture Collections), no. 10. [Jap]

• **Summary:** This is a reprint of the author’s 1978 book *Miso shōyu* [Miso and shoyu]. Address: 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan.

2077. Marukome Miso K.K. 1978. *Go annai* [Introduction (Brochure)]. Nagano, Japan. 10 p. 30 cm. [Jap]

• **Summary:** Contents: Introduction. About the company: Aerial color photo, statistics (factory is 39,000 square meters, annual production of miso is 30,000 tons/year), chronology of company (started in 1854). The miso production process, with 10 color photos including one of an automated koji room. The company’s products (9 color photos, incl. Maru-chan). Film strips / Clips from color TV commercials. Map showing location of regional plants and sales offices. Marukome soybean farm in New South Wales, Australia. Address: Nagano City, Japan. Phone: (0262) 26-0255.

2078. Miller, Lindsay. 1978. *The apartment vegetarian cookbook*. Culver City, California: Peace Press. 312 p. Index. 22 cm. [30 ref]

• **Summary:** Soy-related recipes include: Soybean bulgar casserole (p. 148). Soybean stuffed eggplant (p. 157). Soybean creole (with brown rice and tomato paste, p. 175). Soybean patties (p. 182). Whole wheat soy bread (with soy flour). Cornmeal-soy grits bread (p. 211). Wheat germ-soy grits bread (p. 212). Quick wheat-soy bread (p. 219).

The glossary contains substantial entries for miso, peanut butter, soy beans, soy flour, soy grits, tamari soy sauce, tisanes or herb teas, and tofu. Address: Culver City, California.

2079. Muljokusumo, E. Sudigdo. 1978. Hasil proses fermentasi, kedelai dijadikan lebih bergizi [As a result of the fermentation process, the soybean is made more nutritious]. Bandung: Tarate. 79 p. [Ind]*

2080. Needleman, Larry. 1978. The Tofu Kit story. In: *The Briarpatch Book: Experiences in Right Livelihood and Simple Living from the Briarpatch community*. San Francisco: New Glide / Reed Book. xiii + 313 p. See p. 237-40. 24 cm.

• **Summary:** In the spring of 1976 (about April or May) Larry decided it was time to create a situation that utilized his food karma and experience, “but that wasn’t a quick burnout like a restaurant, and was healthy and made sense world economically—one that would provide unlimited personal and spiritual growth and was a service.” He committed himself to positive thinking and positive action. He began fasting a lot, meditating, praying and concentrating regularly, taking his jogging seriously and generally just putting out good energy. “About a month into this I remember saying, ‘O.K., Lord, I’m ready, lay it on me.’ And that week the Tofu Kit was born.

“Inspiration: I had just received test results from a physical exam, saying I was in fine shape but my cholesterol was too high. That day, as I remember, I saw a copy of *The Book of Tofu*, by Bill Shurtleff and Akiko Aoyagi. It blew me wide open. I used tofu like any other good, miso-soup loving hippie, but hadn’t connected heaving with the bland, unappealing white cake. But the book gave marvelous ways to use this new-found ‘friendly’ food and pointed out how shifting from meat to tofu could have a direct effect, helping feed people elsewhere. Some 300 pages and 500 pages recipes later I came to the book’s last page, ‘Sending Tofu to the Four Directions,’ an inspirational page that said, ‘Do it!’ So I did.

“Three of us were sitting around a wood stove in Sonoma County talking about tofu and tofu making, when the word ‘kit’ popped up. It rang the bell. I immediately began researching and developing the kit the very next day and have continued to work on it daily since then. This is my first venture into the manufacturing world.

“Connection: When the kit was about 3/4 of the way to market, Bill and Akiko arrived from Japan and Bill called

me to say he’d heard from Westbrae Natural Foods that I was working on a tofu kit. I was really excited. He invited me to share food, films, and tales of tofu with him and asked me to bring the kit. What a connection! That meeting, one of several, tuned up and accelerated the kit. We talked of and planned many projects together, and then around midnight on the first of October [1976], I bid Bill and Akiko good-bye as they began a four-month speaking tour. Bill left me with instructions to meet with The Farm Food Co. people in San Rafael, California, and to begin organizing a school to share the technology and equipment of small-shop tofu making with hundreds of people in this country who were waiting for it; I left him with 200 Tofu Kits and a sales rep. agreement. Orders started pouring in for Tofu Kits, but production wasn’t pouring out.”

Larry moved from Occidental, California, to Corte Madera (P.O. Box 829), which was much closer to San Francisco. Describes expansion of production and designing a school, The Learning Tree, at the Farm Food Co. The term will be about 3 weeks long and enrollment limited to about 10 students per term. The kit retails for \$11.95. A photo shows Larry holding his Tofu Kit. Address: The Learning Tree, P.O. Box 829, Corte Madera, California 94925.

2081. Null, Gary; Null, Steve. 1978. *The new vegetarian: Building your health through natural eating*. New York, NY: William Morrow and Company, Inc. 350 p. Index. 22 cm. [63 ref]

• **Summary:** In the chapter titled “Incomplete Protein Foods,” soybeans are discussed on pages 183-86. A brief introduction is given to soy protein concentrates, isolates, spun protein fibers, and textured vegetable proteins. Full-fat soy flour, soy granules, soy flakes, and defatted soy flour and grits are available in natural-food stores.

“In striking contrast to these highly refined products of the West are the traditional East Asian products, tamari soy sauce, miso (fermented paste), and tofu... Tofu (soy curd or soy cheese) is a truly remarkable food. It is very inexpensive when purchased at Oriental markets or natural food shops and even more so if made at home.” A description of how to make tofu and a summary of its nutritional benefits are given.

The soybean is “delicious when served a fresh green summer vegetable, simmered or steamed in the pod.” Or as roasted soybeans [soynuts, dry-roasted or oil-roasted], cooked whole dry soybeans, tempeh, or soy sprouts. The same chapter also discusses miso and tamari in detail (p. 197-99), wheat gluten (p. 178-79), and azuki beans (p. 180). Address: Director, Nutrition Inst. of America, New York. Host of the daily radio program “Natural Living.”

2082. Perkins, David W. ed. 1978. *Hong Kong and China Gas Chinese cookbook*. Hong Kong: Published for the Hong Kong & China Gas Co. by Pat Printer Associates Ltd.

(Hong Kong). 319 p. Illust. (mainly color). Index to recipes. 31 cm.

• **Summary:** A treasure for anyone who admires Chinese cookery, this large, oversized, visually spectacular and beautifully designed book is also rich in culture and history. Comprehensive, with many insights, it contains numerous two-page color spreads. One of the best books seen to date (1978) on Chinese cookery, except for its poor index.

Hong Kong is located on the Pearl River Delta in China, bordering the province of Guangdong to the north and facing the South China Sea to the east, west and south. Its cuisine resembles that of Canton.

A full-page color map of China shows (with different colors) China's four main regional cuisines: Northern (incl. Beijing), Eastern (incl. Shanghai and Nanking), Southern (incl. Canton, Kwantung and Kwangsi), and Western (incl. Hupei, Hunan, Szechwan, Kweichow, and Yunnan).

Peking is only 40 miles away from the nearest point of the Great Wall of China, which started to be built during the Ch'in / Qin Dynasty (225 BC to 207 BC) as protection against invasion by Tartar Hordes. Genghis Khan (1162-1227) is said to have been the first to penetrate it (p. 21).

The last period of Imperial rule in China was the long-lasting Ch'ing / Qing Dynasty (1644-1911) (p. 22).

Since ancient times, when the feet become swollen, the Chinese have eaten peanuts and soya beans (p. 38).

Buddhist vegetarian cookery has existed in China since the 10th century AD (p. 60).

The section titled "Soya beans" (p. 62-63) mentions bean curd or tou fu ("the most versatile of foods in the hands of any cook with any degree of imagination"), soy sauce, soya bean 'milk,' dried bean curd, frozen bean curd, and mao tou [green vegetable soybeans] (which "make a delicious hors d'oeuvre when prepared Shanghainese-style").

The "mysterious MSG (Monosodium glutamate) is a ubiquitous 'instant flavouring'; but more dishes have been spoiled by the addition of too much MSG rather than by the addition of too little" (p. 76).

A large colored photo and accompanying numbered outlined diagram (p. 77-78) shows many different seasonings, incl. Hoisin sauce, hot bean paste, dark soy sauce, light soy sauce, and Worcestershire sauce. "Soy sauce rules the kitchen as undisputed emperor. Basically a fermented extract of the soya bean with salt added, it is available in three main types: heavy or 'black'; dark, containing caramel as colouring and light (both in colour and flavour)." The finest, most expensive, and most concentrated is the first extraction. Specialty soy sauces flavoured with mushrooms or shrimp roe are also available.

"Black bean sauce is a near relative of soy sauce, being made from salted, fermented black soya beans. Again, mention must be made of the three main types of soya bean pastes: hot (with chillies), sweet (with flour, sugar and

spices [t'ien mien chiang]) and yellow, which is very salty indeed... *Hai Hsien* [Hoisin] sauce combines garlic, chilli, beans and ginger with other elements."

A color photo shows most recipes. Soy related recipes include: Shredded pork with dry beancurd saute (p. 112). Chopped soya bean sprouts with pork (p. 113). Stewed lamb with dried beancurd (p. 127). Stir fried chicken with [soya] bean paste (p. 135). Roast Peking duck (with 4 tablespoons "sweet bean paste," p. 153). Braised duck with lo han vegetables (and 60 gm "fried beancurd cubes," p. 156). 'Lu Shui' goose (p. 157; the Lu Shui sauce is made with 250 gm sugar, 250 gm salt, 2 five-spice bouquets, 250 ml light soy sauce, 10 slices ginger). Braised fish with beancurd and vegetables (p. 161). Eight treasure beancurd soup (with "4 squares soft beancurd," p. 193). Vermicelli and fried beancurd soup (p. 199). Beancurd with shredded pork in soup (p. 201). Fried beancurd (p. 204-05). Spicy beancurd with ground pork (Ma P'o tou fu, p. 208). Braised beancurd with mushrooms (p. 212). Beancurd stuffed with shrimp paste (p. 215). Steamed fish and beancurd cake (p. 221). Vegetarian goose (Su ngo, with "20 dried beancurd skins [yuba], about 41 cm = 16 inches in diameter," p. 227). A full-page photo shows a quern = hand turned stone mill (p. 243). Sweet bean paste dip (*tien tou chiang*, with "4 tablespoons sweet bean paste," p. 278).

Also: Sweet red bean paste (*hung tou sha hsien*, with small red beans [azuki], p. 278).

Glossary (p. 302-11, with Chinese words romanized in pinyin) incl.: Beancurd (*doufu*). Beancurd, dry (*toufu gan*). Bean curd cubes, fried (*zha doufu*). Beancurd cubes, preserved (*la furu*, spicy fermented tofu); also known as preserved beancurd and Chinese cheese. Beancurd skins, dried (*fupi*) [doufu pi, yuba]. Beancurd sticks, dried (*fuzhu*); used frequently in vegetarian cooking. Bean pastes (*gan shi jiang*). Sauces produced from soya beans and other ingredients: Hot bean paste (*xiang shi la jiang*), soya bean paste (*mo shi jiang*), "sweet bean paste (*tian shi jiang*; produced from fermented black soya beans, flour, sugar and spices. Substitute: Hoisin sauce." Note: This is the earliest document seen (Feb. 2009) that uses the term "sweet bean paste" to refer to a Chinese paste made with soybeans. Yellow bean paste (*dou ban jiang*). Bean sprouts: Shoots of the mung bean or the soya bean (*da dou ya cai*), the latter being much larger and stronger flavoured. "Black beans (*dou shi*): Salted, fermented black soya beans, Lightly salty in flavour. Used as seasoning. Will keep indefinitely in dry conditions. Chinese cheese (see beancurd cubes, preserved). Dry beancurd (see beancurd, dry). Flour—"High gluten flour (*gao jin fen*): A special kind of 'strong' flour, which gives extreme elasticity, making it possible to roll out the dough to very fine layers. Used for wonton wrappers." Fried beancurd cubes (see beancurd cubes, fried). "Hoisin sauce (*hai xian jiang*): A seasoning sauce or condiment made from red beans (*hong dou*) [azuki], soya beans, sugar and spices.

Sweet-spicy and tangy in flavour. Sold in cans or jars... Also known as Seafood Sauce and Barbecue Sauce.” Hot bean paste (see bean paste). ‘Lu Shui’ sauce (*lu shui zhi*, in Cantonese ‘Lu Soy’). A ‘master sauce’ or more accurately, a stock made with soy sauce, sugar, five spices and ginger. Used for simmering foods, particularly poultry. It gives a rich flavour and deep brown colour. For recipe see p. 157. Note: Widely used in Shanghai, and in Jiangsu and Zhejiang provinces). “Mao tou green peas (*mao dou*): Small beans, grown in the north, with dark-green, slightly hairy pods, which should be removed. Substitute: lima beans.” Monosodium glutamate. Oyster sauce (*hou you*): A viscous dark-brown sauce made from oysters and soy sauce through a process of fermentation. Used as a flavouring and/or colouring agent and as a condiment. Sold in bottles.” Preserved beancurd (see beancurd cubes, preserved). Red beans (*hong dou*), [azuki]. Soya bean paste (see bean paste). Sweet bean paste (see bean paste). Yellow bean paste (see bean paste).

Talk with Cecilia Chiang, founder of The Mandarin restaurant in San Francisco. 2009. Feb. 16. She has this book. The authors of this book are not well known in China; they are mostly amateurs. The best Chinese cookbooks are written by Fu Peimei, a lady who was a real authority on all the different styles of Chinese cooking; she is no longer living. Many of her cookbooks are in both English and Chinese. Concerning “Bean paste,” some of these are no longer available in the USA. Cecilia says Sweet bean paste may be something like *t’ien mien chiang*. Hoisin sauce is not used in Beijing, Shanghai, or anywhere in northern China; it is used mainly in Canton and south China. Cecilia thinks “Sweet bean paste” (*t’ien shih chiang*, p. 303) may be used only in Hong Kong. Most Chinese have never heard of this kind of sweet bean paste. True Cantonese food is quite different from that of Hong Kong. Cecilia knows Cantonese cooking very well; she goes there several times every year. Cantonese make the best soups, the best steamed fish and steamed chicken, and also their famous pork sausage (*la chong?*). Beijing cookery uses hard tofu, but most soft and silky tofu is imported from Japan.

2083. Rhoads, Sharon Ann; Zunic, Patricia. 1978. *Cooking with sea vegetables: 150 natural-style recipes*. Autumn Press, 25 Dwight St., Brookline, MA 02146. 136 p. Illust. by the author. Recipe index. 18 x 26 cm. [99* ref]

• **Summary:** Contents. Preface. Acknowledgements. I. Sea vegetables: Past and present. The bounty of the sea. Plants of a thousand uses. Preparing sea vegetables. II. Cooking with sea vegetables: Kombu and the kelps. Arame. Wakame. Nori. Hijiki. Agar. Irish moss. Dulse. Appendixes: Sources of sea vegetables. Nutritional value of sea vegetables. Bibliography. Address: New York City.

2084. Smith, Allan K.; Circle, S.J. eds. 1978. *Soybeans: Chemistry and technology*. Vol. 1. Proteins. Revised. Westport, Connecticut: AVI Publishing Co. xiii + 470 p. Illust. Index. 24 cm. [500+ ref]

• **Summary:** This revised edition contains relatively few, unimportant changes from the original, classic 1972 edition. The following changes have been made: Addition of a 7-line preface to the “revised second printing” dated 4 Oct. 1977, updating of a graph of U.S. soybean production (p. 1). Updating (to 1976) of a table on U.S. and world production of important oilseeds (soybeans, cottonseeds, peanuts, sunflower, rape, sesame) (p. 2). Minor textual changes on pages 18-19. Addition of a table showing distribution of the 3 leading soybean varieties in 14 major states and the percentage of acreage harvested for each variety in 1976 (e.g., in Illinois, Williams accounted for 25.1% of harvested acreage, Amsoy 17.3%, and Wayne 12.8%). And updating of a table on U.S. soybean production by state showing acreage harvested, yield per acre, and production for 1974, 1975, and 1976 (p. 32).

The foreword, chapter titles, and index have not been changed at all. Note: Vol. 2 was never published. Address: 1. Oilseeds protein consultant, Hot Springs, Arkansas; 2. Oilseed protein consultant, Protein Technology, Richardson, Texas.

2085. Sussman, Vic S. 1978. *The vegetarian alternative: A guide to a healthful and humane diet*. Emmaus, Pennsylvania: Rodale Press. xvii + 286 p. Index. 22 cm. [39 ref]

• **Summary:** Explains the fundamentals of a vegetarian diet. Covers nutrition, protein requirements, health, world food crisis, recipes, and kitchen techniques. Paul Obis, editor of *Vegetarian Times*, has called this “the most complete, concise, and nondogmatic book we have come across.” Keith Akers says that this is one of his four favorite books on vegetarianism.

This book contains extensive information on soyfoods (p. 248-50) including soymilk, tofu, tempeh, miso, and soy flour. The author’s greatest praise is for tofu. Of *The Book of Tofu*, by Shurtleff and Aoyagi, he says (p. 274): “The most important book on food ever published for vegetarians—if not all the world. Clear prose and beautiful illustrations... Five hundred recipes for preparing this versatile and nutritious food. Buy this book...” Address: Trivilah, Maryland.

2086. Takahashi, Takeshi. 1978. *Miso no kôyô* [The virtues of miso]. Tokyo: Arrow Shuppansha. 215 p. [Jap]*

2087. Yanwar, Afrida Nazir; Saparsih, Sri Budhi. comps. 1978. *Selected abstracts of traditional fermented food*. Jakarta, Indonesia: National Scientific Documentation

Center, Indonesian Institute of Sciences (PDIN-LIPI). iv + 470 p. Author index. 29 cm. [506 soy ref]

• **Summary:** These are abstracts of documents published from 1910 to 1976 on traditional fermented food, particularly of food prepared and consumed in Southeast Asia and the Far East. Each chapter is divided into 6 sections: Method of preparation, microorganisms, fermentation studies, nutritive values, other influence in the foodstuff, storage. Within each section, the references are listed alphabetically by author. The source of most of the references is *Chemical Abstracts*, to which an exact citation is usually given.

Contents: Preface. Introduction. 1. Fermented rice (incl. tape ketan [tapeh], sake, awamori). 2. Fermented soy beans: Soysauce (p. 173-294; 350 references), tempe (p. 294-307; 43 refs), natto (p. 307-312; 13 refs), miso (p. 312-343; 100 refs). 3. Fermented coconut press cake (bongkrek; p. 345-47). 4. Sauerkraut. 5. Fermented fish. 6. Vinegar. 7. Fermented cassava (tape / tapeh). Author index (p. 459-70).

Financial assistance was received from the National Institute of Chemistry, the Indonesian Institute of Sciences, the Indonesian Protein Project in the framework of ASEAN-Australian Economic Co-operation. Address: Indonesia.

2088. Zurbel, Runa; Zurbel, Victor. 1978. The vegetarian family: With recipes for a healthier life. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 185 p. Edited by Lester Alexander. Illust. Index. 23 cm. [44 ref]

• **Summary:** The section on soybeans (p. 62-67) discusses soybeans and soyfoods, then gives recipes for: Basic soybeans. Mediterranean soybean casserole Soybean casserole. Soybean salad. Soy milk. Sesame soy milk. Roasted soybeans (baked). Other soy-related recipes include: Soyburgers (p. 80). Ginger tamari sauce (p. 118). Miso yogurt dip (p. 127).

The section titled "Basic Macrobiotic Cooking" discusses shoyu tamari, and miso, and gives recipes for: Miso soup. Miso spread. Nerimiso (Sweet simmered miso).

Chapter 7 (p. 88-101) is titled "Tofu: The food of the future—Discovered over two thousand years ago." A full-page photo opposite the title page shows a wooden forming box, with cakes of tofu and soybeans nearby. *The Book of Tofu*, by Shurtleff and Aoyagi, is praised and credited as the source of much of the information on tofu in this book. Recipes include: Quick tofu. Homemade traditional tofu. Tofu sandwich. Tofu salad. Tofu and peas. Tofu and snow peas. Tofu and Chinese vegetables. Tofu and [mung] bean sprouts. Tofu and sesame. Kinugoshi and how to make custard style kinugoshi. The chapter ends with 2 pages on tempeh, but no recipes.

2089. Kyoto Prefecture, Norinbu, Nosan Fukyuka. 1978? Kyôto-fu ka ni okeru tezukuri miso no jittai: 52 nendo

seikatsu kaizen fukyû kadai shushu jigyô hôkoku [The present status of homemade miso in Kyoto prefecture: 1977 report of the enterprise to collect and popularize subjects that will improve the quality of daily life]. Kyoto. 65 p. Undated. Illust. 26 cm. [Jap]*

2090. **Product Name:** Marukome Country-style Miso Soup [With Wakame].

Foreign Name: Marukome Inaka Miso-shiru (Wakame Iri).

Manufacturer's Name: Marukome Miso K.K.

Manufacturer's Address: Nagano, Japan.

Date of Introduction: 1978?

Ingredients: Country-style (*inaka*) miso, dried wheat gluten (*fu*), wakame, negi onion, bonito powder, kombu, monosodium glutamate (*kagaku chômiryô*)

Wt/Vol., Packaging, Price: 4 packets, each 36 gm.

How Stored: Shelf stable.

New Product-Documentation: Package with Label sent by Dr. Walter Wolf of Peoria, Illinois. 2000. Aug. 5. The colorful package has a use-by date of 1978 Jan. 25. Size: 5¼ by 6½ inches. Foil pouch. Color photo of a reddish-brown bowl of miso soup. In the lower left is Maru-chan, the company logo.

Note: Below the list of ingredients we read that the company also makes Shinshu Miso and Akadashi Miso.

2091. Shurtleff, Willam. 1978? La soja, esperanza mundial: Nuevos alimentos con modalidades muy antiguas [The soybean, hope for the world: New foods with ancient roots]. *Chacra y Campo Moderno (Buenos Aires, Argentina)*. [8 ref. Spa]

• **Summary:** Discusses soy protein and world hunger, tofu, tempeh, and miso. Growth of the soybean industry worldwide. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

2092. Belleme, John. 1979. Re: Starting a new miso company with Sandy Pukel and Michio Kushi. Letter to William Shurtleff at New-Age Foods Study Center, Jan. 1 p. Undated. Handwritten, with signature on letterhead.

• **Summary:** "Dear Bill—Last weekend Sandy, Michio and I got together in Boston to discuss the miso factory. We agreed on a few points. I know you are interested in the project so would like to keep you posted. Also, we need your opinion on a few points.

"First, thanks for sending your miso book, I have read it and found it very informative. We are now going full steam ahead. I am learning Japanese. Michio is going to Japan in May to set up an apprenticeship program for me. Sandy and I have started looking for the land..."

"Bill, If you were going to make miso in the U.S., based on climate, what state would you choose? Thanks, John Belleme."

Talk with John Belleme. 1999. Nov. 8. This letter was probably written in late December 1978 or very early January 1979. John dictated the letter to his wife, Jan, who actually wrote it. He can tell that because the handwriting is legible and there are no spelling mistakes. This idea later became Oak Feed Miso, Inc., then American Miso Co.

Note: This is the earliest document seen (April 2009) connected with American Miso Co., which started making miso in Aug. 1981 in Rutherfordton, North Carolina. John and Jan Belleme were the head miso makers. They learned how to make miso with the Onozaki family in Japan. Address: Oak Feed, 3030 Grand Ave., Coconut Grove, Florida 31333. Phone: 448-0076 (restaurant); 448-7595 (store).

2093. Edward & Sons Trading Co. 1979. Introducing... Soup in seconds. Natural/instant Miso Cup: The long awaited combination of purity and convenience! (Ad). *Whole Foods (Berkeley, California)* 2(1):10. Jan.

• **Summary:** This half-page black-and-white ad shows a case of Miso-Cup instant miso soup. Address: Union, New Jersey 07083.

2094. Fiering, Steve. 1979. A Midwestern interest in tofu [The Soy Plant in Ann Arbor, Michigan]. *Whole Foods (Berkeley, California)* 2(1):38, 40. Jan.

• **Summary:** This is basically a history of The Soy Plant and some of its creative financing schemes. The Soy Plant began operation in August 1977. New products include soymilk, tempeh, spiced tofu, two spreads (one with eggless soy mayo and turmeric; one with tofu, sweet miso and tahini), ice bean [soy ice cream], tofu pies, okara peanut butter balls, and soy sausage. Address: The Soy Plant, Ann Arbor, Michigan.

2095. Fillip, Janice. 1979. The fermentation transformation. *Whole Foods (Berkeley, California)* 2(1):31-33. Jan. [2 ref]

• **Summary:** Contents: Introduction. Shoyu, tamari and soysauce. Tempeh. Address: California.

2096. Ishima, Toshio. 1979. [Correlation between sensory evaluation of miso and its chemical analysis]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 34. p. 252-57. Jan. [4 ref. Jap; eng]

• **Summary:** Reprinted from *Miso no Kagaku to Gijutsu (Miso Science and Technology)*. No. 286. p. 26-31 (1977). Address: National Food Research Inst., MAFF, Tokyo, Japan.

2097. Manabe, Masaru; Matsuura, Shinji. 1979. [Studies on the fluorescent compounds in fermented foods. V. The behavior of fungi during miso and shoyu fermentation and aflatoxin inspection]. *Shokuhin Sogo Kenkyujo Kenkyu*

Hokoku (Report of the National Food Research Institute) No. 34. p. 79-83. Jan. [9 ref. Jap; eng]
Address: National Food Research Inst., MAFF, Tokyo, Japan.

2098. Monroe, Linda. 1979. The many faces of tofu. *Alch Mist of Ann Arbor (Michigan)*. Jan.

• **Summary:** The Soy Plant, located at 211 East Ann St., is a tofu shop—but they also make soysage, missing egg salad, tempeh, spiced tofu (various spices are added when curdling the soy milk), soy milk (regular or flavored with honey and vanilla), missing egg salad, tofu-tahini spread, tofu tarts (a tasty dessert). Coming soon: Soy Scream (soy milk ice cream), and Boston brown bread (steamed). Tofu is made four days a week. “Soy products can be and indeed are the staple of many vegetarian diets.”

“The Soy Plant sells one pound cubes of tofu for 70 cents (if you bring your own container), 72 cents with their plastic bag, or 85 cents in their container [plastic tub]. They encourage people to bring their own containers so as to cut down the use of plastic.” “The collective has been very creative with the versatile little soy bean. Their ideas seem to be endless. They have developed many tasty foods by experimenting with different combinations of ingredients.”

“The Soy Plant is a cheerful, pleasant place to visit. You’ll usually find samples of their different spreads and beverages. Any questions about soy products are gladly answered either by collective members or by just looking in any of the various books available there on tofu, miso and other soy products. You can be sure the collective will always be coming up with new items to surprise and satisfy your taste buds.

“The Soy Plant is open Mondays–Fridays, 10-6, and Saturday, 9-5.”

In the middle of the article is The Soy Plant Logo, two soybean plants growing (to left and right) out of Planet Earth. Around the bottom is written “The Soy Plant.”

Talk with Steve Fiering, a founder of The Soy Plant in Ann Arbor. 2000. Dec. 3. The title of this periodical derives from the word “Alchemist.” The logo was Steve’s idea, developed by Marge Bruchac, Susanna Middaugh, and Dan Ecclestone.

2099. Sakaguchi, Kinichiro. 1979. Shôyu no ruutsu o saguru [Searching for the roots of shoyu]. *Sekai (The World)* No. 398. p. 252-66. Jan. [Jap; eng+]

• **Summary:** A fascinating enquiry into the early history of fermented soyfoods by one of Japan’s most eminent microbiology professors. For details, see *The Book of Miso*, and *History of Soybeans and Soyfoods*, both by Shurtleff and Aoyagi.

Yokotsuka (1986, p. 325) cites this as Sakaguchi. 1981. “Searching for the route of shoyu.” *SEKAI* 398:252-266. This magazine is published by Iwanami Shoten in Tokyo.

“The *Chou-li* states that this jiang was made by mixing the meat of animals, birds, and fish with millet koji and salt, then pickling it in wine in a crock for a hundred days. It is quite remarkable that even at this early date the Chinese were consciously using the enzymes produced by the koji molds (whose airborne spores fell on the substrate naturally, rather than by deliberate inoculation), to make fermented foods such as jiang and fermented grain-based alcoholic beverages. It is also clear from the context that jiang was regarded as a highly prestigious food and a delicacy.”

“Today’s shoyu traces its ancestry back through early shoyu, then through the four fermented soyfoods tamari-shoyu, tamari miso, Hacho miso, and savory soy nuggets (*Hamanatto*), and ultimately back to Chinese soy nuggets (*chi*). Miso, he asserts, traces its ancestry back through early Japanese misos and hishio to jiang. In the shoyu lineage, the koji is always made with either soybeans alone or a mixture of soybeans and cracked or ground wheat, whereas in the miso lineage the koji is usually (except for soybean misos) made from grain. Sakaguchi believes that the fundamental biochemical consequences of this difference in koji substrates are of much greater importance than the more superficial differences of consistency or form that have led researchers up until now to group solid or semisolid fermented soyfoods in the miso lineage and liquid products in the shoyu lineage. Thus it is not obvious that liquid shoyu stems from mushy jiang. In shoyu, the *Aspergillus oryzae* molds grow directly on the soybeans (and wheat) during the koji fermentation and their enzymes begin to digest the koji substrates, then continue to digest the soybeans (and wheat) during the subsequent brine fermentation. This *in vivo* and *in vitro* extended hydrolysis leads to the formation of complex metabolic compounds, a higher degree of protein hydrolysis and liquefaction, and the production of a richer and stronger flavor in shoyu than in miso. Sakaguchi argues that miso has a 3,000 year history dating from the development of jiang during the Chou dynasty in China, whereas shoyu has a 2,000-year history dating from the development of soy nuggets (*shih*) during the Han dynasty.

“It is important to note here that the ancient Chinese language seems to indicate that soy sauce derives from jiang and not from *shih*, as evidenced by the Chinese word for soy sauce, *jiangyou*, meaning ‘the liquid extracted from jiang.’ Moreover, most Chinese jiang and soy nuggets have both always been made with a soy-based koji. Sakaguchi’s analysis is helpful, but lacking on a few points. The jiang has not, as Sakaguchi argues, been made with a grain-based koji. Even in the earliest description of Chinese soybean jiang in the *Ch’i-min yao-shu* (described in detail in the Miso chapter) the koji is made primarily from soybeans. Thus while retaining the essence of Sakaguchi’s argument, we would suggest that it be modified slightly to say that *both* shoyu and miso trace their ancestry back to *both* soy

nuggets (*shih*, which existed prior to 206 BC) and to soybean jiang (which existed prior to AD 500).

“Dr. Sakaguchi considers there to be three main reasons that shoyu and miso were not developed in the West: (1) very few Westerners ever learned how to make koji using molds; (2) they had virtually no soybeans until the 20th century; and (3) the basic flavoring components of shoyu and miso, especially natural L-glutamic acid and inosinic acid, were traditionally unknown in the West.”

“In 1944 Kinichiro Sakaguchi and Koichi Yamada discovered a new species of *Aspergillus* mold, which appeared widely in shoyu koji; they named it *Aspergillus sojae*.”

Photos show: (1) Three ancient earthenware jars, from about the 1770s (Thunberg’s time), in which shoyu was pasteurized and shipped to Europe. Address: Professor of fermentation science, Tokyo Univ.

2100. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tofu. Extensively revised and updated. Condensed. New York, NY: Ballantine Books. 434 p. Illust. by Akiko Aoyagi Shurtleff. Index. Jan. 18 cm. [60 ref]

• **Summary:** Contents: Preface. Acknowledgements. 1. Protein East and West. 2. Tofu as a food. 3. Getting started: Favorite tofu recipes. 4. Soybeans. 5. Fresh soy puree. 6. Okara (Soy pulp). 7. Curds and whey. 8. Tofu & firm tofu. 9. Deep-fried tofu: Tofu cutlets, burgers, treasure balls, and pouches. 10. Soymilk. 11. Silken tofu. 12. Grilled tofu. 13. Frozen & dried-frozen tofu. 14. Fermented tofu. 15. Yuba. Appendices: A. Tofu restaurants in Japan. B. Tofu shops and soy dairies in the West. C. Varieties of tofu in East Asia. D. Table of equivalents. Bibliography. Glossary. Contains 250 recipes and 100 illustrations. Price: \$2.95.

This new edition features: (1) New recipes: Over fifty new American-style tofu recipes including Creamy Tofu Dressings, Tofu Teriyaki, Tofu Burgers, Tofu Eggless Egg Salad, and the like. The key to the book is an updated list of favorite tofu recipes plus suggestions for incorporating them into a weekly menu (p. 56). (2) New sections: An extensive new introduction to Soy Protein Foods (p. 66), dairylike products made from tofu (p. 150), dairylike products made from soymilk (p. 302) including soymilk yogurt (fermented), ice cream, kefir, mayonnaise, whipped cream, popsicles, buttermilk, and soy shakes. (3) New chapters: Wine Fermented Tofu and Varieties of Tofu in East Asia. (4) New basic methodologies: The key recipes for homemade tofu and homemade soymilk have been simplified and improved. (5) Updates: A complete listing of the 120 tofu shops and soy dairies now operating in the West; over 60 Caucasian-run shops have opened in the past two years. (6) New Americanized tofu names: Including tofu burgers, tofu cutlets, silken tofu, wine fermented tofu, and fresh soy puree. (7) No sugar.

Note 1. This is the earliest English-language document seen (March 2004) that uses the term “silken tofu.”

Note 2. This is the earliest English-language document seen (Feb. 2007) that contains the term “Wine-fermented tofu.”

In Jan. 1988 a new printing (but not a new edition) of this book (the 13th), slightly revised, appeared. It had a new cover and many new small illustrations. The subtitle was “Protein Source of the Future–Now!” The heading: “The World’s Bestselling Book on Tofu.” Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2101. Shurtleff, William. 1979. Protein source for the future. *Cosmos (NSW, Australia)* 6(6):1, 4-5. Jan.

• **Summary:** Gives ten reasons why soybeans soy will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost protein. 3. High nutritional value. 4. Time tested. 5. Remarkably versatile. 6. Appropriate technology. 7. New dairylike products. 8. Hardy and adaptive. 9. Free nitrogen fertilizer. 10. Energy and resource efficient. “All of these ten factors work together synergistically, reinforcing one another, to give added weight to the prediction that soybeans will be a key protein source for the future on plant earth.”

Note: This information was published in July 1979 in *The Book of Tempeh* (p. 21-24). Address: Lafayette, California.

2102. Wang, H.L.; Mustakas, G.C.; Wolf, W.J.; Wang, L.C.; Hesseltine, C.W.; Bagley, E.B. 1979. Soybeans as human food: Unprocessed and simply processed. *USDA Utilization Research Report No. 5*. iv + 54 p. Jan. Slightly revised, July 1979. Jan. No index. 28 cm. Compiled for USAID. [50+ ref]

• **Summary:** Contents: Introduction. 1. Soybean food uses in Asia. China: Soaking dry soybeans, tou chiang (soybean milk), tou fu (soybean curd), processed tou fu products, tou fu pi (protein-lipid films), huang tou ya (soybean sprouts), whole soybeans, fermented soybean foods, production and consumption. Japan: Tofu (soybean curd), kinugoshi tofu, processed tofu products, yuba (protein-lipid film), soybean milk, gô (ground soybean mash), daizu no moyashi (soybean sprouts), whole soybeans, fermented soybean food, production and consumption. Korea: Tubu (soybean curd), processed tubu product, soybean sprouts, whole soybeans, soybean flour, fermented soybean food, production and consumption. Indonesia: Tahu or tahoo (soybean curd), bubuk kedele (soybean powder), tempe kedele, tempe gembus [the name in Central and East Java for okara tempeh], oncom tahu [the name in West Java for okara onchom], other soybean products (soybean sprouts, green soybeans, roasted and boiled soybeans, kecap {soy sauce}, tauco {soybean paste}), food mixtures, production

and consumption. Thailand: Tofu (*tauhu*), soy sauce, green soybeans in the pods (*tourae*). Philippines: Soybean sprouts, soybean coffee, soybean cake, soybean milk, tou fu and processed tou fu products, production and consumption. Burma. India. Malaysia. Nepal. Singapore. Sri Lanka (Ceylon). Vietnam. Middle East. References–Soybean food uses in Asia. 2. Soybean food uses in Africa. Ethiopia: Injera, wots and allichas, kitta, dabbo, dabokolo, porridge. Kenya. Morocco. Nigeria: Whole soybeans, soybean paste, corn-soy mixtures (soy-ogi). Tanzania. Uganda. Production. References–Soybean food uses in Africa. 3. Soybean food uses in Europe and U.S.S.R. 4. Soybean food uses in Latin America. Argentina. Bolivia. Brazil. Chile. Colombia. Ecuador. Guyana. Paraguay. Peru. Uruguay. Venezuela. Mexico: New village process, commercial developments. Honduras. Costa Rica. Panama. Dominican Republic. Jamaica. Haiti. Trinidad. References–Soybean food uses in Latin America. 5. Soybean food uses in North America. United States. Canada. References–Soybean food uses in North America. 6. Soybean food uses in Australia. 7. Summary of soybean food uses. Traditional soybean foods: Soybean milk, soybean curd and processed soybean curd products, protein-lipid film, soybean sprouts, tempe (tempeh), green soybeans, boiled soybeans, roasted soybeans, soybean flour, soy sauce, fermented soybean paste, fermented whole soybeans, natto, fermented soybean curd. Experimental soybean foods: Whole soybean foods, soybean paste, soy flour, soy beverage. Production and consumption. 8. Simple village process for processing whole soybeans: Equipment, process, sanitation requirements, quality of product, evaluation of product in formulas and procedures for family and institutional use in developing countries. NRRC village process. 9. Industrial production and selling prices of edible soybean protein products. 10. Barriers to accepting and using soybeans in food: Availability. Cultural and social factors. Texture. Flavor. Nutrition and food safety. Technology development. Technology transfer. Address: NRRC, Peoria, Illinois.

2103. *Whole Foods (Berkeley, California)*. 1979. The food of the future. 2(1):22-24. Jan.

• **Summary:** The article begins: “Why devote an entire issue of *Whole Foods* to the subject of soyfoods? Soyfoods are a rapidly growing part of the natural foods industry...”

“The bringing of the ‘Soyfoods Revolution’ to the natural foods industry is the work of individuals, toying and playing with new recipes in their own kitchens and shops. No person deserves more credit for this revolution than William Shurtleff who, along with Akiko Aoyagi, wrote *The Book of Tofu*, and told us all how to do it. (An updated pocket-size version of *The Book of Tofu* is just off the presses of Ballantine Press.) Shurtleff travels the globe, sharing his expertise on soyfoods, covering topics as specific as chip-dip recipes and as broad as the role of

soybean production in future patterns of world protein hunger.

“Other individuals, most of them with small soyfoods shops of their own, met recently to form the Soycrafters Association of North America (SANA), which is likely to serve as the backbone of the Soyfoods Revolution in the natural foods industry. [Note: This historic first meeting was held on 28-30 July 1978 at The Soy Plant in Ann Arbor, Michigan.] SANA selected Larry Needleman as its first president. Needleman, whose Bean Machines, Inc. imports the prime line of Takai tofu and soymilk equipment from Japan, has been a major source of information about soyfoods equipment for our industry.

“Needleman wrote about the spirit of the new organization at its first gathering in Ann Arbor.

“Imagine a group of seventy people representing enthusiastic dedication (almost to the point of craziness) to the production and distribution of tofu and other soyfoods, gathered in an informal setting in a university town in the Midwest, with meetings scheduled from nine in the morning till eleven at night—and you’ve got a good idea of what went on... ‘Sharing began immediately. Groups of people gathered here and there and began asking each other about their shop or organization. Those passing by would hear a familiar word such as ‘yield’ of ‘pressure-cooker’ and just stopped to join the conversation. It was apparent that here was a gathering destined to be stimulating and mutually beneficial...

“The first evening, Bill Shurtleff set up a slide show about tofu and miso production in Japan. The presentation ran the gamut from small, traditional shops built over their own well, to large, fully-automated factories turning out tens of thousand of pounds per day. Bill answered questions and added a personal touch to the showing because he had shot the photos himself over a period of years, and was familiar with the language, traditions and production of the Japanese...

“On Saturday morning, The Soy Plant showed us their method of producing tofu and soymilk. Those with less experience absorbed information and asked questions, and those with more experience volunteered information, clarified points and offered suggestions. Then Wataru Takai, the overseas manager for Takai Tofu and Soymilk Equipment Co., Japan’s largest manufacturer of this equipment, explained principles behind each step of production, and the uses of the equipment...

“At a later session, it was remarked that many soyfoods producers are operating on an inefficient and labor-intensive basis. Some felt this was a good way to begin, first becoming intimate with the steps of production and developing a market ‘track record,’ and then using that base to upgrade production by purchasing more sophisticated equipment. Others felt that the time and energy involved in putting together a makeshift shop which was outgrown in

about six months would be better spent in the capital to start at higher technological level...

“In one of the most popular and exciting discussions of the conference, the consensus of the group was that tofu and soymilk were the foods that Americans have been waiting for. A list of related products that have been marketed with incredible success included tofu burgers, no-egg salad, honey soymilk ice cream, tofu chip-dips and dressings, flavored soymilk, tofu ‘mayonnaise,’ and pressed, marinated tofu. There was unanimous agreement that it was these new soyfoods that would capture the interest and palate of middle America, people who had turned up their noses at that tasteless white cake of tofu floating in water...

“Later we discussed the problems of proper storage and display of our products. In US food markets, tofu has usually been sold with Oriental foods in the vegetable section. Getting it moved to a cooler, more appropriate cheese display case, where it will stay fresh longer and compete favorably with dairy products, has met with resistance...

“In the evening, another slide show by Bill Shurtleff showed us how tempeh, a key protein source for millions of people in Indonesia, is quickly and simply produced as a cottage industry in their homes. Having sampled this unusual food at lunch, we were eager to learn about it because it was delectable. Somewhere between a deep-fried fish cake and Kentucky fried chicken in flavor and texture, it lent itself to use in a seemingly endless variety of ways...

“Toward the end of the conference, discussion turned to marketing and finance. It was found that some firms lacked capital for growth, while others had enough capital but needed greater management skills to keep up with the growing demand for soyfoods. That demand is not uniform nationwide. Different regions show various levels of consumer awareness, interest in, and acceptance of soyfoods. Printed hand-out sheets and cooking classes were suggested as promotional efforts were an important part of the creation of a desirable image for soyfoods.

“Before leaving Ann Arbor, the participants formed the Soycrafters Association of North America as a trade association to promote soyfoods and exchange information among the members. With the founding of SANA, the Soyfoods Revolution took its longest recent stride. Soycrafters were no longer isolated persons, groups and shops, but had become a nationwide network devoted to the same purposes, sharing their experiences for mutual benefit and the ultimate benefit of the American consumer.”

Note: The word “soyfoods” is used throughout this article.

2104. [Shurtleff, William; Aoyagi, Akiko]. 1979. Soyfoods buyer’s guide [Tofu, tempeh and miso shops in the USA and Canada]. *Whole Foods (Berkeley, California)* 2(1):42-44. Jan.

• **Summary:** A listing of all companies in the USA and Canada, by food type, by state.

Note: This is also the earliest English-language publication (one of two in this issue) seen that uses the term "Soyfoods" in the title. Shurtleff and Aoyagi compiled this list and gave *Whole Foods* permission to use it free of charge. Address: P.O. Box 234, Lafayette, California 94549.

2105. Pukel, Sanford J. 1979. Articles of Incorporation of Oak Feed Miso, Inc. Coconut Grove, Florida. 4 p. Feb. 28. Unpublished typescript.

• **Summary:** The maximum number of shares of capital stock authorized is 5,000, each having a par value of \$10.00. There will be two classes of common stock: 3,000 authorized shares of class A and 2,000 authorized shares of Class B. Only holders of class A shares shall have the right to vote. Initial capital: \$5,000. "The initial address of the principal and registered office of this corporation is to be 3030 Grand Avenue, Coconut Grove, Florida. Sanford J. Pukel shall be the initial registered agent at such address." The two initial directors are: Sanford J. Pukel (President, 3030 Grand Ave., Coconut Grove, Florida 33133) and John Belleme (Secretary-Treasurer, 5490 W. 1 Ct., Hialeah, Florida 33012). Note: It is not clear who owns how much stock at this time.

Filed on 28 Feb. 1979. Signed by Sanford J. Pukel. Address: Coconut Grove, Florida.

2106. Morning Star Laboratories, Inc. 1979. Nutritional analysis of Hacho miso, and "Promiso #2." Vernon, California. 3 p. 28 cm.

• **Summary:** This analysis was conducted for Proteus Corporation, 1242 Glen Ave., Berkeley, California 94708. Hacho miso was found to contain: Moisture 43.9%. Protein 21.06%. Fat 8.46%. Fiber 6.9%. Ash 12.91%. Carbohydrates 6.77%. Calories per 100 grams 187. Vitamin B-12 0.1 micrograms per 100 gm. Signed James A. Laubscher.

A similar but more detailed analysis (dated 9 March 1979) is given for "Promiso #2," which is probably a mixture of spirulina and Hacho miso. This analysis includes the content of all amino acids (aminogram), bacterial counts, the salt content (7.57%), and the fatty acid profile. Address: 2800 Jewel Ave., Vernon, California 90058. Phone: (213) 582-0981.

2107. Westbrae Natural Foods. 1979. Price list [Catalog]: February 1979. Emeryville, California: Westbrae. 35 p. 22 by 28 cm.

• **Summary:** On the cover are yellow and light green Japanese plum blossom crests against a green background. New products (written in all capital letters): Kelp (powder and granules). Traditional (true) tamari—wheat free. Mu tea.

Address: P.O. Box 8711, Emeryville, California 94662. Phone: (415) 658-7518 (orders).

2108. Fukushima, D. 1979. Fermented vegetable (soybean) protein and related foods of Japan and China. *J. of the American Oil Chemists' Soc.* 56(3):357-62. March. [10 ref]

• **Summary:** Contents: Abstract. Introduction. Soy Sauce: Fermented soy sauce: Japanese and Chinese styles of soy sauce and their characteristics. Manufacturing process. Comparison of fermented soy sauce with chemical soy sauce. Fermented soy paste. Chinese soybean cheese (sufu). Fermented whole soybean (natto). New fermented soybean products. A photo shows Fukushima. Fig. 3 shows two chromatograms comparing the organic acids of fermented and chemical (HVP) soy sauce. Fermented soy sauce has an abundance of lactic acid, whereas HVP soy sauce has an abundance of formic acid. Address: Kikkoman Foods, Inc., P.O. Box 69, Walworth, Wisconsin.

2109. Hesseltine, C.W. 1979. Some important fermented foods of Mid-Asia, the Middle East, and Africa. *J. of the American Oil Chemists' Soc.* 56(3):367-74. March. [34 ref]

• **Summary:** Contents: Abstract ("These fermentations, unlike those of the Orient, use bacteria and yeasts instead of filamentous fungi"). Introduction. Eight reasons for using a fermentation process in the production of acid foods. Idli. Kishk. Ogi (The Yoruba {western Nigeria} for a fermented sour maize product found throughout Black Africa). Mahewu (Magou). Kaffir beer (Bantu beer, sorghum beer, mqombothi).

"When we think of food fermentations, aside from those we encounter daily such as cheese and bread, we think of those strange and exotic products like soy sauce, soybean paste [miso], and tempeh made in China, Japan, and the East Indies."

A photo shows Hesseltine. See also p. 380-81 of this March issue. Address: NRRC, Peoria, Illinois.

2110. Leon, Sonia V. de. 1979. Tropical foods in the Far East. In: G.E. Inglett and G. Charalambous, eds. 1979. *Tropical Foods: Chemistry and Nutrition*. Vol. 1. New York: Academic Press. x + 701 p. See p. 351-63. [15 ref]

• **Summary:** The section titled "Fermented Cereals and Grains" gives basic information about the following fermented soybean foods: Tempeh, soy sauce, miso, and sufu or Chinese cheese. Address: Dep. of Food Science and Nutrition, Univ. of the Philippines, Diliman, Quezon City, Philippines.

2111. **Product Name:** Miso [Brown Rice, Barley, Mellow Brown Rice, Mellow Red, or Black Soybean].

Manufacturer's Name: Ohio Miso Co.

Manufacturer's Address: Route 2, Monroeville, OH 44847.

Date of Introduction: 1979. March.

Ingredients: Soybeans, rice or barley, salt, water.

New Product–Documentation: D.B. 1979. *Whole Foods*. Oct. p. 62; Carr. 1980. *East West Journal*. Jan. p. 68-69; Leviton. 1980. *Soycraft*. Summer. p. 26-31, 63-68; Ad in *East West Journal*. 1980 Jan. p. 69. Ad in *Soyfoods*. 1980. Summer. p. 24. “Transforming organically grown and beans into quality natural miso since 1979. Ohio Miso is moving Oct. 1980 to South River Farms, Box 4, Conway, Massachusetts 01341.” Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 238.

Note: Thom Leonard was one of the first Caucasian Americans to make koji in America for use in a commercial product.

2112. Sakaguchi, Y. 1979. Opening remarks–Vegetable proteins in fermented foods and other products. *J. of the American Oil Chemists’ Soc.* 56(3):356. March.

• **Summary:** “Miso, or soybean paste, one of the most important fermented soybean foods, was originally made in China. A missionary who was sent [from Japan] to China learned its production and modified it into a product suited to the Japanese taste in the 7th century. About 185,000 tons of soybeans are used for miso production annually.

“Another major fermented soybean food is soy sauce which was originally developed by the Zen Monk Kakushin in 1234. He also visited China and discovered that the liquid portion from Miso was very delicious. This liquid became the base for soy sauce, an essential ingredient in the Japanese diet. Soy sauce required the annual use of nearly 175,000 tons of soybean meal, the equivalent of 222,000 tons of soybeans.

“Natto, the third major fermented soybean product of Japan, originated in our country. In 1087, a ruler in the northern part of Japan discovered natto to be part of local farmers’ diets. Today, nearly 60,000 tons of soybeans are consumed in its production.

“As Japan continues to draw from its historic past for a source of soy-based foods, we also are full participants in the new era of sophisticated vegetable protein foods. To promote utilization and production of this product, the Japan Vegetable Protein Food Association was organized in 1975.”

A photo shows Sakaguchi. Address: Japan Vegetable Protein Food Assoc., 9th Floor, Rainbow Building, 2-15-17 Nishi-Shinbashi, Minato-ku, Tokyo, Japan.

2113. *Telluride Times*. 1979. The Tofu Shop: Traditional vegetarian cuisine (Ad). March.

• **Summary:** Features a large illustration of a dragon and “Traditional vegetarian cuisine” as part of the company logo. States: “Menus from different nationalities every night. Whatever you’re in the mood for, we can probably help you out. Thurs. 3/15 [Thursday, March 15]. Tofu

Turkey, Vegetable stuffing, baked potatoes, fruit salad. Note: The Tofu Shop in Telluride is now selling “Tofu Turkey” commercially, with all the trimmings—even though it was out of season.

Fri. 3/16. Pizza, Minestrone soup, Tossed green salad.

Sat. 3/17. Ganmo (Mock Goose), Stir-fried vegetables, miso soup, etc.

“Dine in or phone ahead for takeout (728-9940). Open Mon.–Sat. 11 a.m. to 9:30 p.m. Closed Sundays.”

Note: Unfortunately the exact date and page of this ad are unknown, but it was shortly before March 15. Address: 116 N. Oak—on the Sheridan Mall—Telluride, Colorado.

2114. Winarno, F.G. 1979. Fermented vegetable protein and related foods of Southeast Asia with special reference to Indonesia. *J. of the American Oil Chemists’ Soc.* 56(3):363-66. March. [22 ref]

• **Summary:** Contents: Abstract. Introduction. Fermented foods and food needs. Tempeh and oncom. Bongkrek (and its toxic-producing bacteria) and tauco. Wholesomeness of fermented foods. Development of food supplement using fermented food as a basic ingredient.

Table I shows the population, population growth rate, and average national income per capita in ten Southeast Asian countries. Indonesia has by far the largest population (136.9 million), followed by Vietnam (47.3). Khmer republic (Cambodia) has the highest population growth rate (2.8%), followed by the Philippines (2.7%); Singapore has the lowest (1.3%). Singapore has by far the highest average national income per capita (US\$2,510), followed by Malaysia (\$720), then Maungthai (Thailand—\$350); Khmer Republic and Laos have the two lowest per capita incomes (\$70). Table II shows the nutritional composition of tempeh, oncom, bongkrek, and tauco per 100 gm. Table III shows 7 fermented vegetable protein foods in Southeast Asia: Tempeh, bongkrek, oncom, tauco kecap (shoyu), ang-kak, and sofu (sufu); for each is given the microorganism used, substrate, nature of product (solid, liquid), and area where article is sold commercially. Table IV shows the composition and nutritional value of TFR (Tempeh-Fish-Rice), as developed at the National Research Institute, Bogor, Indonesia. A photo shows F.G. Winarno. Address: Bogor Agricultural Univ., Fatemeta, IPB, Jalan Gunung Gede, Bogor, Indonesia.

2115. Duienga, Suzanne; Duienga, William. 1979. The Soy Plant. *Beansprout Flyer and Pocket Reader: Grand Rapids Food Co-op Newsletter* 2(3): April.

• **Summary:** “A current personal interest in soybeans combined with a concern about the high price of tofu at the coop led us to visit the Soy Plant in Ann Arbor. What we found was not a ‘plant’ or a factory at all, but a downhome group of people with a genuine interest in their work.

“Steve Fiering, the man who first envisioned the Soy Plant, stopped his work to show us around the shop and talk with us about his experiences and his soybean philosophy.

“When asked why Soy Plant tofu costs so much, Steve gave us some pretty impressive reasons. First of all the soybeans that the Plant uses are organic. Secondly, Steve values the people with whom he works and so wages (\$4.00 per hour) reflect this. Lastly and most importantly, the Soy Plant is the first of its kind in this area. As with all first, ‘We make mistakes and they cost money.’” Steve made much of the machinery in the shop himself.

“The Soy Plant already has a large line of delicious soy products (all personally sampled and ‘wholestomachally’ approved of), including soysage, tempeh, soymilk, brown bread, sweet white miso, spiced tofu, spreads, tofu pies, and okara peanut butter balls. Free samples of the delectable spreads are available on the counter.

“During the visit our basic curiosity evolved into true inspiration. The Plant is a living, breathing, organically growing example of how a cooperative group of people can come together and make something happen. The place truly is a center of learning, staffed by people eager to share their newly found knowledge about the creating of this very old food.

“Do you often wonder what to make with this nutritious but strange stuff called tofu? Here are some delightful recipes:” The recipes, from *The Book of Tofu* by Shurtleff and Aoyagi, are for Tofu-nut butter spread or topping, and Banana-tofu milkshake. Address: Michigan.

2116. Jack, Alex. 1979. The taste of America: Our changing diet. *East West Journal* 10(4):46-61. April. [24 ref]

• **Summary:** This is a macrobiotic view of the changing American diet. Contents: Modern dietary trends. The rise of the standard diet. Food origins: Meat-centered, traditional, vegetarian. Food changes: 1910-1976 (percentage change). The effects of meat and dairy. Effects of sugar and spice. The limits of modern nutrition. The rise of vegetarianism: Adolf Hitler [in Germany], Mohandas Gandhi [in India]. You are what your grandparents ate. Popular health foods: Honey, yogurt, herb teas. The traditional diet of humans. Seven levels of eating. The future diet of humanity.

“Underlying nearly all modern dietary trends is a shift from meals centered around animal products toward ones derived from plant sources. According to a 1978 Roper Poll, 7 million Americans over age 18 do not eat any meat and 37 million more are cautious about how much meat they consume. Another 44% regard a reduction of meat consumption as healthy.” In all, nearly 50% of Americans are concerned about meat and the standard American diet. Then lists 12 signs of a major shift in our attitudes toward meat and dairy products; No. 10 incl. “the rising popularity of soy products such as miso, tofu, and tempeh as

alternative protein sources to meat.” Address: [Boston, Massachusetts].

2117. **Product Name:** Kome Miso.

Manufacturer’s Name: Shin-Mei-Do Miso Co.

Manufacturer’s Address: 5 Wren Road, Denman Island, BC, Canada V0R 1T0. Phone: 604-335-0253.

Date of Introduction: 1979. April.

Ingredients: White rice koji, soybeans, salt, water.

New Product–Documentation: Letter/Order from Lulu Yoshihara. 1976. Nov. She orders a copy of *The Book of Miso, Vol. II*.

Letter from Lulu Yoshihara. 1981. Sept. 9; Martin. 1982. Comox District Free Press. Sept. 17; Leviton. 1983. Soyfoods. Winter. p. 36-37; Shurtleff & Aoyagi. 1983. Book of Miso. 2nd ed. p. 238. The company was started in April 1979 by Lulu Yoshihara. Leviton. 1982. In a Small Bright Building. Yasuo (nickname “Yoshi”) grew up on a farm in Japan and already knew how to make miso. The shop can make about 10,000 lb of miso in a typical year. Yasuo & Lulu Yoshihara run the business.

Talk with Yasuo Yoshihara. 1996. March 22. Their first miso was a white rice miso named “Kome Miso.” It was sold only to natural- and health food stores. His business is active and growing. They make brown rice miso and barley miso, each sold in 450 gm and 4.5 kg plastic tubs. Lulu does the bookkeeping.

2118. Flinders, Carol. 1979. Soybean key to world food plight? Notes from Laurel’s Kitchen. *Rocky Mountain News (Denver, Colorado)*. May 16. p. 24A.

• **Summary:** Twelve years ago (i.e., in late 1968) Carol spent a memorable week at the Tassajara Zen Mountain Center near Big Sur, California. “Among the many good people I met, one I’ve always remembered was Bill Shurtleff, who helped run the kitchen out of which was issued the well known Tassajara bread.

“Spare of words, lean and thoughtful, he had a kind of banked fire in his eyes that told you he was a man in search of a vocation. Last week Bill and his wife, Akiko, came to our home to visit and exchange ideas. It’s clear that he has found the vocation he’s been looking for, and that, in a sense, all of us stand to gain from the passion with which he’s answered it.

“The cause Bill has taken up is that of the more than one billion people of the world for whom hunger is *the* central fact of life. To be as continually mindful of their plight as he is would probably be unbearable if he didn’t believe he holds a significant key to relieving it. The key? ‘Glycine max’—soybeans to you and me.

“Western exploitation of the soybean has been absurdly slight until recent years. Mostly we’ve fattened our livestock with it. That soy is ‘king of beans’ we’ve long recognized.” But they have entered the American food

supply well disguised in such forms as textured vegetable protein. “The soybean foods Bill is promoting are of a much more sophisticated nature. Their names fall oddly on the Western ear:” tofu, shoyu, tempeh, miso.

Bill and Akiko met in Japan. She “was a fashion designer in Tokyo before they were married. The image of big city haute couture doesn’t attach easily to the simply dressed and unpretentious Akiko, and everything makes a little more sense when you find out the fashions she designed were actually for handicapped children.

“Akiko’s skill as a graphic artist and fine cook are the perfect complement to Bill’s, as writer and investigator. Her warmth and gentleness are the perfect balance to his single-minded intensity. (Akiko doesn’t just invite you for dinner. She seizes your arm as you’re walking along together, wraps it close in her own and holds on tight, convincing you life will be pure misery for them until you come to their house).

“Tofu was the soyfood that first captured Bill’s interest.” Discusses its virtues. “But what really wins him over, I think, is the sheer romance of tofu. What you know of tofu, and what I’ve told you about Bill, might make that seem unlikely. But read his book and see for yourself—beneath that samurai exterior beats the heart of a Shelley or a Keats. Listen:

“Like water that flows through the worlds, serving as it moves along, tofu joyfully surrenders itself to the endless play of transformation. Pierced with a skewer, it sizzles and broils above a bed of live coals... deep-fried in crackling oil, it emerges crisp and handsome in robes of golden brown, frozen all night in snow under vast mountain skies, it emerges glistening with frost and utterly changed. All as if it knew there was no death to die, no fixed or separate self to cling to, no other home than here.”

Contains a favorite Flinders’ recipe for tofu patties.

2119. Hoang, Van Chi. 1979. Report to the Bureau of Industrial Guidance, FDA: Vietnamese soysauce. Its particularities and our manufacturing process. Bowie, Maryland: Vietnam Food & Drink Co. 4 p. May 25. Unpublished typescript on letterhead. 28 cm.

• **Summary:** Contents: Names of company director, plant manager, and technical board (in left margin). Bibliography: Translation into English of article on Vietnamese soysauce production found in *Khoa Hoc Thuong Thuc*, a scientific magazine published in Hanoi. The translation follows: General process (for making soysauce). Some differences between Chinese and Vietnamese soysauces.

Our manufacturing process: Ingredients to obtain 8 gallons of soysauce (Soybeans 10 lb. Rice 5 lb. Salt 5 lb. Sugar 5 lb. Water 5 gallons). Rice fermentation or “koji” preparation. Soybean fermentation or preparation of the brine. Preparation of soysauce. Packaging. The pH problem.

The problem of oxydation [sic, oxidation]. Our request with FDA.

Vietnamese always prefer their own soysauce to the Chinese brand. After fermentation is over, the Chinese filter the product, taking only the filtrate to make their sauce, while discarding all the solid particles that remain. The Vietnamese, on the other hand, grind the whole product to obtain a sauce which is much thicker. The Chinese add *Lactobacillus* to the cooked soybeans to stimulate their fermentation. The Vietnamese roast their soybeans before cooking. Chinese like black soy sauce. To get that black color, they keep their soysauce in an open jar, exposed to the air for as long as three months; auto-oxydation turns the sauce black. Vietnamese prefer brown-colored soysauce. Vietnamese soybeans do not have a great tendency toward oxydation. Roasted soybeans and rice inoculated with *Aspergillus oryzae* are fermented separately. The finished koji has a pH of 4.0 (sample A1). During the soybean fermentation, if the temperature is maintained at 35-38°C, the fermentation is complete in 9 days, with a pH of 5.0 to 5.2 (sample A2). “Fermented rice [koji] and fermented soybeans are mixed together, and salt and sugar are added. The whole mixture is then ground in an industrial blender and reduced to a thick paste” (sample A3). The pH of the final mixture is important since “Vietnamese customers have a traditional for a sweet and only slightly sour sauce.” The addition of a few grams of vitamin C to each 8-gallon batch of soysauce helps to fight oxidation and prevent unwanted darkening of the sauce. The finished soysauce is poured into glass bottles (8 oz or 16 oz) and sealed with a cap. The company requests that the FDA consider this soysauce as a fermented food rather than an acidified food, and authorizes the company to keep its pH around 4.8—the same as some Chinese-style sauce made in the USA (sample A4).

Note 1. This is the earliest document seen (March 2001) concerning the work of Vietnamese with soyfoods or soybeans overseas (one of two documents). By June 1979 Hoang Van Chi was making Vietnamese soy sauce in Bowie, Maryland.

Note 2. The address of the company’s factory is handwritten in red at the top left of page 1: 3824 Ironwood Place, Landover, Maryland 20785. Phone: (301) 322-7948. The company director, Hoang Phan, is the writer’s wife. Address: Technical Director, Vietnam Food & Drink Co., Inc., 12653 Heming Lane, Bowie, Maryland 20716. Phone: (301) 262-3735.

2120. Midwest Natural Foods Distributors, Inc. 1979. Catalog 13. Spring, 1979. Ann Arbor, Michigan. iv + 290 p. Index by product category. Index of manufacturers. Index of advertisers. Illust. 28 cm.

• **Summary:** One the cover are two kites (colored orange and red) flying in the sky. This catalog, largely printed by a

computer, contains many ads on numbered pages. Contents: Policies and terms. Catalog information. Packaged. Books. Refrigerated and frozen. Bulk. Literature and flyers. Indexes (3).

“One stop shopping... We are now a Full Line distributor.” List of new lines. List of new products within existing lines. Symbols and abbreviations.

Suppliers are listed alphabetically: Arrowhead Mills, Balanced Brand [Balanced Foods, New Jersey], Bragg’s (Liquid Aminos), Dr. Bronner’s (with full page ad showing the doctor), Carmé (lecithin), Cedar Lakes, Cellu (Soy bean flour), Chico-San, A.A. Debole (Spaghetti sauce–soy conc), Dragon’s Milk (Arica), Elam’s (soy flour), El Molino, Ener-G–Jolly Joan, Erewhon (with Erewhon West full-page ad), Family Orchards (Tamari mixes, Trail mix), Fantastic Foods, Fantastic Falafel [Felafel], Fearn Soya Foods, Flavor Tree, Hain Pure Foods (“Cold pressed” vegetable oils, mayonnaise, nut butters), Hansen’s juices, Health Valley (incl. Vegetarian Chili), Hi-Energy Foods (food bars), Hoffman’s (protein powders, snack bars), Lact-Aid (p. 109, ad p. 118), Jack La Lanne, Lange’s, R.G. Lecithin, Lifestream (p. 113, 251, ads p. 249-50), Malt-O-Meal, Maya Grainburgers (p. 119, ad p. 126–mix with tofu), Midland Lecithin, Miso Cup, Modern Products (Gayelord Hauser), Mus-L-On (MLO), NF Factors, Niblack (“Tamari toasted sunflower seeds,” Tamari pumpkin seeds,” raw or toasted wheat germ, unprocessed miller’s bran), Old Stone Mill (soy), Orjene, Parkelp, Plus Produces (incl. Tiger’s Milk), Richter Bros., Soken, Sovex, Viobin, Waring (blender, juicer), Westbrae.

Books, Talking Foods, Meats (nitrate and nitrite free), Poultry (no hormones or antibiotics), Soy Products (Health Valley soy milk, tofu), Soy Plant Tofu (nigari, and tofu sausage, p. 259-60), Tumaros, Willow Run (Soybean spread [margarine]). Bulk–Beans, dry roasted soybeans, fruit & nut mixes (trail mix), nut butters, condiments, vegetable oils, pasta (with nomenclature), granola, teas & herbs. Literature & flyers. Indexes. Note: Many companies have a large selection of herbs. Address: 170 Aprill Dr., Ann Arbor, Michigan 48103. Phone: 313-769-8444 or in Area 313 1-800-552-6297.

2121. Hesseltine, Clifford W.; Wang, Hwa L. 1979. Fermented foods. *Chemistry and Industry (London)* No. 12. p. 393-99. June 16. [4 ref]

• **Summary:** Contents: Fermentation: Advantages of fermented foods. Need for more research. Need for a worldwide fermented foods catalogue. Investigating the process. Characteristics and microorganisms. Fermentation: 12 aspects that merit attention. Improvement: Example of tempeh spores and plastic bags. New foods (such as wheat and cereal tempehs). Future of traditional fermented foods (it looks bright). Mahewu. Kaffir/Bantu beer.

“Finally we would like to suggest several fermented foods that might be possible candidates for future development outside the Orient. These are miso, natto, hamanatto, and sufu.” Address: NRRC, Peoria, Illinois.

2122. Liebman, Bonnie. 1979. Sea salt: No great shakes. *Nutrition Action* 6(6):13, 16. June. Address: CSPI Nutritionist.

2123. Shurtleff, William. 1979. Sources of vegetarian vitamin B-12. *Vegetarian Times* No. 31. May/June. p. 36-37, 39-40. Reprinted, revised and updated, in *Vegetarian Times*, Feb. 1983, p. 61-63. [11 ref]

• **Summary:** This review of the literature shows that the major vegetarian sources of vitamin B-12 are fermented soyfoods (tempeh, natto, miso), single-cell-proteins (spirulina, chlorella, scenedesmus, unfortified yeasts), sea vegetables (kombu, wakame, and others). The richest known animal source is beef liver. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2124. *Spiral News (The) (Jamestown, Missouri)*. 1979. Time to celebrate. Everyone is invited! No. 6. Summer. p. 4.

• **Summary:** “We are happy to announce that we have secured a very suitable 405 acre property for the Midwest Macrobiotic Homestead Community and a ready to start selling homestead size acreages. The location is excellent,” 30 minutes from Columbia, Missouri and 20 minutes from Jefferson City, Missouri. Nearby is the Spiral Inn East/West Center located at Route 3 Box 114, Bowling Green, Missouri 63334. After 1 July 1979 the Spiral Inn East/West Center will be located several miles to the north at Route 1 Box 9, Moniteau Farm, Jamestown, Missouri 65046. Phone: (816) 849-2157. A map shows the area.

“Moniteau’ is derived from the Native American Indian word meaning ‘Great Spirit.’” At the Third Annual Midwest Summer Festival and Solstice Celebration, topics to be discussed will include miso, tofu, sake, pickle and condiment production.

“The Spiral Inn East/West Center offers macrobiotic food, lodging and information to east/west travelers and interested visitors... Rates are \$3.00 per day for those who want to help around the place, or \$6.00 per day for those who just want to take it easy.” People who have visited since the last issue of the newsletter was published include: Paul Duchesne (Fairfax, California), and Les Karplus (Champaign, Illinois).

Note: This is the earliest document seen (Dec. 2003) related to the company that later became Imagine Foods, pioneers of Rice Dream. However Imagine Foods’ first commercial product was not introduced until April 1982. It was made at Moniteau Farm, Jamestown, Missouri. The company’s first rice-based product, Amasake, was launched

in March 1983. Address: Rural Route 1, Box 9, Jamestown, Missouri 65046. Phone: 816-849-2157.

2125. **Product Name:** Bodhi Sauce and Tuong Cu-Da (Vietnamese Soy Sauces).

Manufacturer's Name: Vietnam Food and Drink Co.

Manufacturer's Address: 12653 Heming Lane, Bowie, Maryland 20716. Phone: (301) 322-7948, 262-3735.

Date of Introduction: 1979. June.

Ingredients: Soy-beans, rice, salt, water.

Wt/Vol., Packaging, Price: 10 oz.

How Stored: Shelf stable.

New Product–Documentation: Hoang, Van Chi. 1979.

“Report to the Bureau of Industrial Guidance, FDA: Vietnamese soysauce. Its particularities and our manufacturing process.” Bowie, Maryland: Vietnam Food & Drink Co. 4 p. May 25.

Label. 1980. 7.25 by 3 inches. Paper. Black on white. “A wholegrain soybean sauce used for centuries by Buddhist monks in S.E. Asia. Wholegrain soysauce like this one has many virtues among which: It helps the skin remain fresh and young. There probably lies the secret of Oriental women’s skin beauty. It eliminates from the body toxic substances produced by tobacco, alcohol and atomic radiation. The yeast that remains alive in the sauce prevents the development of harmful germs. It is a food for good health and longevity. Reference *The Chinese Journal*, New York. Used to dip To-Fu (bean curd), boiled vegetables or just plain rice. Non-vegetarians can use this sauce to dip: chicken, duck, pork, beef boiled or roasted.”

Leviton. 1982. Soyfoods. Winter. p. 68-69. “Tuong Cu-Da is identical to Bodhi Sauce but contains added sugar for the extra sweetness the Vietnamese prefer.” Both are made with glutinous rice (sweet rice). Soya Bluebook. 1987. p. 92. Address is now 3824 Ironwood Place, Landover, Maryland 20785.

Spot in *Whole Foods* magazine. 1982. Feb. p. 50. A photo shows Hoang Van Chi and many bottles of his Bodhi Sauce.

2126. Westbrae Natural Foods. 1979. Distributor catalog: June 1979. Emeryville, California: Westbrae. 16 p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in dark blue and dark red on a tan background. Address: 4240 Hollis St., Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2127. Westbrae Natural Foods. 1979. Wholesale food catalog: June 1979. Emeryville, California: Westbrae. 36 p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in dark blue and dark red on a tan background. Address: 4240 Hollis St.,

Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2128. Westbrae Natural Foods. 1979. Snack food catalog: June 1979. Emeryville, California: Westbrae. 5 p. incl. 1 p. insert 22 by 28 cm.

• **Summary:** On the cover, the lettering is in dark blue and dark red on a tan background. Address: 4240 Hollis St., Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2129. *East West Journal*. 1979. Cooking for health: *How to Cook with Miso*, by Aveline Tomoko Kushi (Ad). July. Inside rear cover.

• **Summary:** This full-page ad (black, white, and red) has a form for ordering the book for \$6.95 plus \$1.50 postage and handling from the *East West Journal* in Brookline, Massachusetts. This ad (black and white) also appeared in the Nov. 1979 (p. 3) issue of this magazine.

2130. Leviton, Richard. 1979. The soy delicatessen. *Soycraft (Greenfield, Massachusetts)* 1(1):12-18. Summer.

• **Summary:** Describes The Tofu Shop (Rochester, New York), The Soy Plant (Ann Arbor, Michigan), The Cow of China (Boulder, Colorado), and The Tofu Shop (Telluride, Colorado).

Photos taken at The Tofu Shop in Rochester show: Greg Weaver at the counter serving a woman (cover photo). The inside of the restaurant, including two women seated at a wooden table and the large menu on the wall in the back. A woman employee cutting vegetables in the kitchen. Another woman working in the kitchen. A close-up of the wooden menu on the back wall (with prices; * = organically grown), which offers: Deli: Tofu*, tempeh*, soy mayo, soysage, soy milk*. Salads: Deviled tofu, tempeh, tossed. Dips (with tofu): Onion, dill. Hot sandwiches: Tofu burger, tofelafel, sloppy joe tempeh, tempeh Reuben, temptation! Cold sandwiches: Deviled tofu, tempeh salad. Casseroles: Tofu-spinach pie, tofu Italiano. Soups: Miso, soup of the day. Sampler plate. Special of the week: Ginger garlic sauce over tofu, rice and sauteed vegetables. Desserts: Lemon cream pie, tofu carob-mint pie, chocolate-mint pie, gingerbread, peanut butter cookies. Drinks: Soymilk, herb tea*, vegetable juice*, apple cider, Bambu (a roasted grain coffee), banana shake (with frozen bananas and soymilk), carobanana. The deli case at White Wave. The outside of The Cow of China.

Note 1. This is the earliest document seen (Feb. 2007) that mentions the use of frozen bananas to add thickness to a smoothie—a breakthrough idea.

“Matthew Schmit—proprietor of The Tofu Shop, in Telluride, Colorado, Juice Bar, Dining, Catering, Wholesale Kitchens, ‘producers and suppliers of specialty foods for the

western slope—operates a soy-based restaurant that seats about thirty people and has waiters and waitresses. The Restaurant, which opened in October 1977, and had gross sales last year of twenty thousand dollars, is open six days a week from 11:00 A.M. to 9:30 P.M. Matthew astonished me with the figure of one thousand dollars as the initial capital investment for this business, which now produces 250 pounds of tofu for weekly wholesale distribution in addition to the flourishing restaurant.

“The menu, which features a stunning photograph of Rocky Mountains rising out of a misty valley, and which they use as a promotional brochure, delineates the fare: Entrees (Stir-fried tofu, Rice & vegetables; Soy burgers, Tofu burgers, Okara burgers, Grilled tofu & vegetables in pita bread, Guacamole & tofu, Spicy tofu & rice filling with guacamole for burritos); Smoothies (Carob-honey soymilk with banana, Carrot sunny shake); Beverages (Miso broth, soymilk, [soy] whey); and Salads (Tofu & guacamole salad, okara salad, tofu & vegetable salad).” Matthew explains the okara salad and whey.

“Matthew and his associates regard the tofu and soyfoods as an entrance into an expanded food processing line for their local market, a move that will lessen their dependence on only one or two products. Believing that every community should have its own fresh tofu, Matthew adds that ‘everyone develops their own business according to the nature of their community.’” During the holiday season, Matthew’s community created an exotic recipe for “tofu turkey.” “Chunks of tofu are seasoned and basted, often carved in the shape of turkeys, and baked for an entire day”—after which “they taste exactly like turkey.”

Note 2. This is the English-language document seen (Jan. 2007) that contains the term “Okara burgers” (or “Okara burger”). Address: Sunrise Farm, 100 Heath Rd., Colrain, Massachusetts 01340.

2131. **Product Name:** New World Rice & Tofu Sandwich. **Manufacturer’s Name:** New World Enterprises. Renamed New World Natural Foods in 1985.

Manufacturer’s Address: 226 Cypress St., Brookline, MA 02146. Phone: 617-232-5973.

Date of Introduction: 1979. July.

Ingredients: Organic short grain brown rice, tofu, carrot, lettuce, scallions, peanut butter, miso, safflower oil, tamari, ginger root, and sea salt, wrapped in chapati bread.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

New Product–Documentation: Talk with Paul Duchesne. 1989. Aug. This company was started in about 1980-81 by a woman in Brookline. He does not know from whom she learned to make the sandwich. The product was called Rice and Tofu Sandwich. Label sent by Paul Duchesne. 1989. Aug. 11. 3 inch diameter. Dark blue lettering on a light blue and orange background illustration of the world. This label

is currently in use by Emily Merghart in Brookline. Phone: 617-232-5973.

Talk with Emily Morse Merghart. 1989. Aug. 18. Emily started this company on 5 July 1979 at 226 Cypress St. in Brookline. Before that she was a ballet dancer. Her husband was a dancer. She developed the product herself and did not learn the process from anyone else. She never met Paul Duchesne. This was her first sandwich. She is positive that there were no other rice and tofu sandwiches on the market at the time; she never saw any in the many stores to which she distributed hers. In mid-1988 she moved to her present address, 157 Sutherland Rd., Brookline, Massachusetts 02146. Phone: See above. She now has a line of ten sandwiches, and makes 1,000 a day.

2132. **Product Name:** Nori Rolls (With Tofu Filling).

Manufacturer’s Name: Real Food Co.

Manufacturer’s Address: Boulder, Colorado. Phone: 449-7790.

Date of Introduction: 1979. July.

Ingredients: Rice, nori, tofu, zucchini, green pepper, carrots, turnips, onions, sesame oil, miso, umeboshi salt plums, shoyu, garlic, spices.

Wt/Vol., Packaging, Price: 8 oz.

New Product–Documentation: Label. 1981. 6.25 by 2.5 inches. Paper. Black on tan. Shurtleff & Aoyagi. 1979. Tofu & Soymilk Production. p. 167.

2133. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tempeh: A super soyfood from Indonesia. New York, NY: Harper & Row. 160 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. [24 ref]

• **Summary:** Contents: Acknowledgments. What is tempeh? Preface. 1. Soybeans—Protein source of the future: Introduction, the causes of hunger and starvation—two analyses (*The Twenty-Ninth Day*, by Lester Brown—population, affluence; *Food First: Beyond the Myth of Scarcity*, by Lappé and Collins—population, narrow focus on increasing food productivity, international food exploitation, land monopolization and misuse, cash crop system of export agriculture). Ten reasons soy will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost protein. 3. High nutritional value. 4. Time tested. 5. Remarkably versatile. 6. Appropriate technology. 7. New dairylike products. 8. Hardy and adaptive. 9. Free nitrogen fertilizer. 10. Energy and resource efficient. “All of these ten factors work together synergistically, reinforcing one another, to give added weight to the prediction that soybeans will be a key protein source for the future on plant earth.” Present patterns of soy protein utilization. New developments. An idea whose time has come.

2. Tempeh as a food. 3. Getting started (incl. basic preparatory techniques and 18 recipes). Favorite tempeh recipes (13 Western favorites, 6 non-fried favorites, and 12

Indonesian favorites; also Suggestions for serving tempeh throughout the day). 4. Western-style and Oriental tempeh recipes (68 recipes). 5. Indonesian tempeh recipes (70 recipes). 6. Making tempeh at home or in a community. 7. Making tempeh starter. 8. The Indonesian tempeh shop. Appendix A: A brief history of tempeh East and West. Appendix B: Tempeh shops in the West. Weights, Measures, and Equivalents. Glossary. Bibliography.

The first book in the world devoted entirely to tempeh. It contained the first sizeable collection of American-style and Indonesian tempeh recipes (130 in all), the first illustrated descriptions of making tempeh, tempeh starter, and onchom on various scales in Indonesian tempeh shops, the first history of tempeh, detailed discussion of tempeh in Indonesian culture and of the many varieties of Indonesian tempeh, and the first recommendations for commercial names for the more than 30 types of tempeh that could easily be made in the West. It also contained chapters and reviews of the literature on tempeh nutrition and the microbiology and biochemistry of tempeh fermentation, plus the largest bibliography on tempeh to date (including many new Indonesian references), an annotated listing of 61 people and organizations around the world connected with tempeh, and the first list of tempeh companies in the West.

Chapter 5 notes that Indonesia's 7 most popular tempeh recipes, in descending order of popularity, are: Tempeh goreng, tempeh bachem, keripik tempeh, sayur lodeh, sambal goreng tempeh, terik tempeh, sambal goreng kering tempeh. Recipes for each are given. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2134. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tempeh: A super soyfood from Indonesia. Professional hardcover edition. New York, NY: Harper & Row. 248 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. [190 ref]

• **Summary:** A special cloth-bound professional edition of *The Book of Tempeh* prepared for libraries, commercial tempeh producers, microbiologists, students of Indonesian foods, and those who love fine books. In addition to the full contents of the paperback edition, it contains the following lengthy appendixes: The Microbiology & Chemistry of Tempeh Fermentation. Tempeh in Indonesia (an overview of the tempeh industry and market, including the number of shops by province, per capita consumption, etc.). The Varieties of Tempeh. Soybean Production and Traditional Soyfoods in Indonesia. Onchom or Ontjom. A Glossary of Indonesian Foods (the most extensive one available in English). Bibliography on Tempeh containing over 190 entries. Expanded Index. A great deal of original research is contained in the extra 88 pages and 54 illustrations.

Appendix C, "The varieties of tempeh, states: "The many varieties of tempeh may be grouped into five basic

types, according to the primary ingredient used: legumes, grains & soy, grains, presscake residues, and nonlegume seeds. Legume tempehs: Soy tempeh (*témpé kedelé* or *kedelai*, made from the seeds of *Glycine max*). Velvet-bean tempeh (*tempe benguk* or *tempe koro benguk*, made from the seeds of *Mucuna pruriens*, which are called *kara benguk* in Indonesian). Winged-bean tempeh (*tempe kecipir*, made from the seeds of *Psophocarpus tetragonolobus*). Leucaena tempeh (*tempe lamtoro* or *tempe mlandingan*, made from the seeds of *Leucena leucocephala*). Mung bean tempeh (*tempe kacang hijau*, made from the seeds of *Vigna radiata*, which are called *kacang hijau* in Indonesian). Broad-bean or fava-bean tempeh (*tempe kacang babi*, made from the seeds of *Vicia faba*, also called horse beans). Sesban-bean tempeh (*tempe turi*, made from the seeds of *Sesbania grandiflora*). Pigeon-pea tempeh (*tempe kacang iris*, made from the seeds of *Cajanus cajan*). Green-bean tempeh (*tempe kacang merah*, made from the seeds of *Phaseolus vulgaris*, which are called *kacang buncis* in Indonesian). Lima-bean tempeh (*tempe kara* or *tempe kara kratok*, made from the seeds of *Phaseolus lunatus*). Lablab-bean tempeh (*tempe kara-kara* or *tempe koro wedus*, made from the seeds of *Lablab purpureus*, which is called hyacinth bean in the USA). Jack-bean tempeh (*tempe kara bedong* or *tempe kara pedang*, made from the seeds of some strains of *Canavalia ensiformis*). Lupin tempeh (developed in Australia, made from the seeds of the narrow-leafed sweet lupin (*Lupinus angustifolius*) or the Andean lupin (*Lupinus mutabilis*)). Cowpea or black-eyed pea tempeh (developed in West Africa and Thailand, made from the seeds of *Vigna unguiculata*). Note: Chickpeas (garbanzo beans), baby limas, and great northern beans have also been used to make tempeh.

Grain & soy tempehs: Wheat & soy tempeh, barley & soy tempeh, rice & soy tempeh, bulgur & soy tempeh. Grain tempehs: Barley, rice, wheat, oats, and rye have been used with good results.

Presscake tempehs: Okara tempeh (called *tempe gembus* in Central and East Java where it is most popular, and called *oncom hitam* in West Java where it is not widely used). Peanut presscake tempeh (called black onchom (*oncom hitam*) in the Bogor region of West Java where it is most widely consumed, or white onchom (*oncom putih*) in the Tasikmalaya region, or "tempeh from peanut presscake" (*tempe bungkil kacang*) in East Java). Coconut presscake tempeh (*tempe bongkreng*, *tempe bungkil kelapa*, or *tempe kapuk*) comes in several varieties and can be can be poisonous if the pathogenic aerobic bacterium *Pseudomonas cocovenenans* grows on it and produces either yellow-colored toxoflavin or the more toxic colorless bongkreng acid. Peanut- & coconut-presscake tempeh (*tempe menjes*). Mung-bean-presscake tempeh (*oncom hitam* or *oncom ampas kacang hijau*). Soy- & peanut-presscake tempeh. Defatted soy-meal tempeh.

Seed tempehs (nonleguminous): Rubberseed tempeh (*tempe kaloko*) is made from the seeds of the rubber tree (*Hevea brasiliensis*). Okra tempeh. Sesame & soy tempeh. Tempeh extenders and adulterants: Okara, cassava, mung-bean presscake, soybean hulls, sweet potato, coconut- or peanut presscake, papaya. The stages of tempeh fermentation (underripe to overripe): Premature tempeh (*tempe koro*), mature tempeh, slightly overripe tempeh (*tempe semangit* or *tempe lanas*), overripe tempeh (*tempe busuk* or *tempe bosok*), rotten tempeh. Tempeh wrappers.

Appendix D: "Soybean production and traditional soyfoods in Indonesia" discusses: Soybean production in Indonesia, traditional Indonesian soyfoods: Kechap (*kecap* / *ketjap*), taucho (*tauco* or *taoco*), okara onchom, sereh (*sere*), taokoan or takoa, tofu (*tahu*). Other nonfermented soyfoods: Soy sprouts (*taugé kedele*), yuba (*bungah tahu*), soymilk, roasted soybeans (*dele sangan, kedele sangrai*), roasted soy grits or full-fat flour (*bubuk kedele*), fresh green soybeans (*kedelai rebus*).

Note: This is the earliest English-language document seen (March, 2009) uses the word "taucho" (spelled in that way) to refer to Indonesian-style miso.

Appendix E: "The microbiology and chemistry of tempeh fermentation" discusses: What are fungi?, general characteristics of *Rhizopus* molds, *Rhizopus* species used to make tempeh, pure cultures versus mixed cultures, preparing soybeans for fermentation, requirements for mold growth, general changes during tempeh fermentation, changes in nutrients and digestibility, the finished tempeh, the advantages and disadvantages of tempeh fermentation, suggestions for further research.

Appendix H: "Onchom or ontjom" discusses: Introduction. The varieties of onchom (*onchom merah* or *onchom beureum*): Peanut-presscake onchom, okara onchom, soy onchom, coconut-presscake onchom. Making peanut-presscake onchom in a commercial shop. Making okara onchom in a commercial shop. The microbiology of onchom. Laboratory studies of onchom. Aflatoxins. Works on onchom and neurospora. People connected with onchom and neurospora. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2135. *Soycraft (Greenfield, Massachusetts)*. 1979. Monroeville, Ohio: Ohio Miso Company. 1(1):8. Summer. • **Summary:** "Thom Leonard and Richard Kluding ladled their first batch of miso into their one-ton wooden vats on March 15 this year. They began construction of their miso shop, one of the first in the United States, in late October [1978], on Richard's rural farm assembling a frame structure of forty feet by thirty with slab floors. As *koji*-making requires constant monitoring, they chose to locate the shop—partitioned into a storage and fermentation area, production space, a small *koji* room, and office cubicle—close to where they live.

"Their weekly miso volume is in excess of one thousand pounds, spread over four working days, and recently, they began selling Mellow Barley Miso, which takes only five weeks to mature but requires refrigeration to extend its comparatively short shelf-life. The bulk of their miso production is Barley Miso which requires up to eighteen months to ferment. To supplement their business, Richard and Thom produce between twenty and fifty pounds of tofu every week.

"Thom learned miso-making through a blend of Bill Shurtleff's writings, a two-week intensive course with Muramoto sensei at Asunaro, actual production of two thousand pounds of miso in Arkansas, and work at Island Spring in Vashon, Washington."

Note: This miso was never sold by Ohio Miso Co. Before the miso had finished aging, the company was put up for sale and purchased by Christian and Gaella Elwell, who started South River Miso (SRM) Co. The vats of aging miso were transported to Conway, Massachusetts, where the finished miso was sold by the Elwells in late 1980.

2136. *Soycraft (Greenfield, Massachusetts)*. 1979. Successful soyfoods booth at Detroit Symposium. 1(1):6. Summer.

• **Summary:** The Soy Plant of Ann Arbor, Michigan, dispensed a lavish array of soyfoods at the Detroit Symposium on Humanity, held at the University of Detroit, from March 30 to April 1. The Soy Plant's theme was "Soybeans Can Feed the World."

The Soy Plant prepared tahini-tofu spread sandwiches, missing-egg salad sandwiches, and Sloppy Barney's (half soysage and half tofu) served in pita bread with sprouts. They also had four flavors of tofu pies (banana, strawberry, peanut, and cheesecake), and peanut butter balls (made with okara, sweet white miso, and tofu). According to Dan Ecclestone, who helped man the Soy Plant booth, the purpose was to demonstrate the wide flexibility of tofu. "It was fantastic, the acceptance was very good. We were surely the most talked about booth at the exhibition." In total, they sold 450 sandwiches and 200 tofu pies.

2137. Oak Feed Miso, Inc. 1979. Land deed (Rutherford County, North Carolina). Deed of trust. Promissory note. North Carolina. 3 p. Aug. 7. Unpublished typescript. 36 cm.

• **Summary:** Land deed: With this deed Oak Feed Miso buys two parcels of land, 48.3 acres and 44.08 acres totaling 92.38 acres, in Rutherfordton, North Carolina.

This is "the same property as described in deed from Robert Warren Deakin and wife to Lawrence L. Bridges and E. Milton Singletary dated January 26, 1979 and recorded in Deed Book 401 on page 146, Rutherford Country Registry, the property hereby conveyed being described as follows:..."

“Subject to Deed of Trust to Tryon Federal Savings and Loan Association of Tryon, North Carolina, which Oak Feed Miso, Inc. agrees to assume and pay the balance due. Said Deed of Trust is recorded in Deed of Trust Book 223, Page 411, Rutherford County Registry.”

Deed of trust: This indenture, made on 7 Aug. 1979, is by and between Oak Feed Miso, Inc., a Florida corporation... Oak Feed Miso agrees to pay \$23,000 for two parcels on Maple Creek or Maple Creek Road in Green Hill Township, Rutherford County, North Carolina. Half of the total is payable to Lawrence L. Bridges and half to E. Milton Singletary. Terms: \$200 by 1 Sept. 1979 and \$200 by the first day of each successive month until the full amount of principal and interest has been paid. Interest 9%.

The 1-page promissory note (a separate document) is to Lawrence L. Bridges for \$11,500. Terms: \$100 by 1 Sept. 1979 and \$100 by the first day of each successive month. Interest 9%.

Both documents are signed by Sanford J. Pukel, president, Oak Feed Miso, and Janet Belleme, President. The land deed is recorded in book 405, p. 727. The deed of trust is in book 268, p. 460.

Note 1. See interview (March 2000) with Mae McMahan of the Rutherford County records room (Phone: 828-287-6195). Note 2. Talk with Barry Evans, owner of American Miso Co. (AMC) 2000. June 29. Barry is quite sure American Miso Co. had a second mortgage on this property. Those were the days when interest rates were around 17%. Lawrence L. Bridges and E. Milton Singletary probably provided some of the financing at lower interest rates as a help and incentive for AMC to buy the land. That way, not all the financing had to be provided by the bank at high interest rates. He estimates the total cost of the land to be about \$110,000 to \$120,000. The \$23,000 paid to Bridges and Singletary was the difference between what AMC made as a down-payment and what they were assuming as the mortgage. Address: North Carolina.

2138. *Valley News & Valley Green Sheet (Van Nuys, California)*. 1979. From the makers of tofu and miso, a new tempeh-tation—The Joy of Soy: Treat your body like a temple with tempeh. Aug. 16. *

2139. New-age Foods Study Center. 1979. Catalog of publications & materials by William Shurtleff & Akiko Aoyagi [mail order]. P.O. Box 234, Lafayette, CA 94549. 2 p. Aug. 24.

• **Summary:** This single page leaflet, 8½ by 14 inches, is printed on both sides with brown and teal blue ink on white Classic Laid paper. The Japanese-style logo is waves and a moon in a circle. The following items are available: The Book of Tofu (Ballantine \$2.95). Tofu & Soymilk Production (\$17.95). The Book of Tofu: Food for Mankind (Autumn Press \$7.95). The Book of Tempeh (paperback and

professional hardcover editions). Tempeh Production (\$13.95). The Book of Miso (Autumn Press). Miso Production. Pamphlets (5). Tofu kit. Color slide sets. Soykraft magazine (and information about Soycrafters Assoc.). Catalogs of tofu & soymilk equipment (Bean Machines). Natural nigari. Tempeh starter (contact Farm Foods). Koji & koji starter. Pressing sacks & straining bags. The Book of Kudzu. A large sidebar is titled “New-Age Foods Study Center.” Address: Lafayette, California. Phone: 415-283-3161.

2140. New-age Foods Study Center. 1979. Soyfoods tour of the Pacific Northwest (Itinerary, Aug. 27–Sept. 6). P.O. Box 234, Lafayette, CA 94549. 1 p. Aug. Unpublished manuscript.

• **Summary:** On this tour Shurtleff and Aoyagi conducted a number of public programs on soyfoods (tofu, tempeh, miso, etc.), showing color slides and sampling foods. They also did research for their forthcoming book *Tempeh Production* and held numerous media interviews. In California they visited Bean Machines, Ramagiri (home of Laurel’s Kitchen), Farallones Inst. (Donna Calvaud). In Oregon, Surata Soyfoods (Benjamin Hills), Blair Island (Toby Alves), Sunbow Farm (Mia Posner), and *Rain* magazine. In Washington, Island Spring (Luke Lukoskie). Address: Lafayette, California.

2141. Oak Feed Miso, Inc. 1979. “Subscribers consent” agreement. Miami, Florida. 2 p. Aug. 16. Unpublished typescript. *

• **Summary:** This agreement was signed at a meeting in Miami. The following people, all or most of whom were present, subscribe to buy shares in Oak Feed Miso, Inc. Sandy Pukel, John Belleme (he invested sweat equity, not money; Sandy put up John’s share of the money), Barry Evans, Yozo Masuda (chef in the Oak Feed Restaurant), Edmund Benson (a friend of Sandy’s involved in macrobiotics), and Jim Kenney (manager of the Oak Feed Store). Note: All these people knew each other, and all but Barry lived near Coconut Grove. Address: Miami, Florida.

2142. Simonds, Nina. 1979. Chinese cuisine: Soybeans. *Gourmet* 39:28-29, 74-77. Aug.

• **Summary:** After a brief history of soya in China, gives recipes for: Fried soybeans [soynuts]. Sweet soybean milk. Stir-fried soybean sprouts red-in-snow (incl. how to sprout soybeans). Braised soybeans and meatballs. Sparerib and soybean sprout soup. Stuffed wheat gluten balls with soybean sprouts (*Mien Chin Jou Yüan*). Braised bean sticks [*fu tsu*; yuba] with black mushrooms. Buddha’s delight (*Lo Han Su Ts’ai*). Stuffed bean curd rolls. Sweet-and-sour fish in bean milk skin [yuba]. Bean milk skin (*fu p’i*) and eggplant rolls.

2143. *Vashon-Maury Island Beachcomber*. 1979. Tofu gurus to talk here. Late Aug.

• **Summary:** “The people who wrote the Book of Tofu and the Book of Miso are to show Islanders Sept. 4 (at Ober Park, 7:30 to 9:30 p.m.) how to prepare tofu and miso at home.” The talk will be hosted by Luke Lukoskie of Island Spring Inc. Address: Washington.

2144. Krieger, Verena. 1979. Re: Thoughts on returning to Switzerland. Letter to William Shurtleff at Soyfoods Center, Sept. 17. 1 p. Typed, with signature.

• **Summary:** “Dear Bill, It has finally become possible for me to return to my native Switzerland (just as you told me two years ago at the first national ‘soyfoods conference’ [Held July 28-30, 1978, in Ann Arbor, Michigan]). I am determined to continue my work as a natural foods cook, teacher and possibly writer... What would be new here is the contribution from the Far East, especially soyfoods and seaweeds. It may take a long time for these products to spread in Europe, and especially in Switzerland, since many popular-traditional and cultural values are so much connected with cattle raising. Also, soybeans grow poorly here... Anyway, these were considerations I did not have to face, while I was using pounds and pounds of tofu, tempeh, miso, etc. in our restaurant in Chicago, and I feel I have a lot to learn and rethink at this point.”

Note: In 1978-79 Verena worked at the vegetarian, natural-foods restaurant “It’s Natural,” owned by Brian Schaefer, at 502 & 514 Main St., Evanston, Illinois 60202 (a suburb of Chicago). Address: Frauenfeld, Switzerland. Phone: 041-22 50 34.

2145. Yamamoto, Toyo. 1979. The soybean: Potential to feed the world. *Oregon Herald*. Sept. 17. p. 5, 8. [3 ref]

• **Summary:** An interview with William Shurtleff about soyfoods. “On Saturday night of the Labor Day weekend about 70 people cozily seated themselves at the First Methodist Church in downtown Salem [Oregon] to hear a lecture/slide show by author William Shurtleff. He discussed soybean foods, such as tempeh, tofu and miso—most of which are now available at natural foods stores in the mid-valley.” The program was sponsored by Heliotrope Natural Foods in Salem. Address: Salem, Oregon.

2146. Esko, Wendy. 1979. *Introducing macrobiotic cooking*. Tokyo: Japan Publications. 144 p. Foreword by Aveline Kushi. Preface by Edward Esko (both written June 1978). Illust. by Bonnie Harris. Index. 26 cm.

• **Summary:** The author was introduced to macrobiotics in upstate New York in about 1971. This is her first book on macrobiotics. It was originally published under the title of *An Introduction to Macrobiotic Cooking* by the East West Foundation, 17 Station Street, Brookline, Massachusetts

20146. Though copyrighted in 1978, the first edition appeared in Sept. 1979. The fourth printing was May 1981.

The chapter titled “Beans including tofu and natto” gives descriptions of and recipes for making: Japanese black beans (black soybeans, p. 54; “These beans are therapeutic for the sexual organs and will relieve an overly yang condition caused by too much animal food or fish.”) Soybeans (p. 54. “These beans are the most yin of the bean family... It is recommended that soybeans be eaten only occasionally as a separate side dish. Because they are very yin, they should be cooked with yang vegetables such as lotus root or burdock, for balance. The best way to eat soybeans is in the form of *tofu*, *okara*, *natto*, *tempeh*, and, of course, miso and tamari.”) Tofu, and Homemade tofu (curded with nigari, p. 54-55). Okara (p. 55-56). Tofu and corn. Tofu, onions and water cress. Dried tofu (dried-frozen, p. 57). Yuba (dried soy milk; how to make at home). Vegetables and dried soy milk (p. 57). Ganmodoki (Tofu and jinenjo patties, p. 57-58). Natto (description and how to make at home, p. 58-59).

Other soy-related recipes include: Tofu soup (p. 68). Miso soup (p. 69-70, basic, or quick). Watercress miso soup (p. 71). Daikon and sweet rice dumpling soup (with miso). Chinese cabbage and tofu miso soup (p. 71). Aveline Kushi’s miso stuffed lotus root (p. 86). Tofu dressing (p. 91). Miso-tahini spread (p. 92). Miso-sesame spread (p. 92). Miso-lemon sauce (p. 93). Tofu dip (p. 93). Miso with scallions (p. 95). Tamari (description, p. 95). Tekka (made with Hatcho miso, p. 96). Miso pickles (p. 100-01). Tamari pickles (p. 101). Tofu plaster (p. 130). Ume-Sho-Kuzu drink (with umeboshi, tamari and kuzu, p. 131). Ume-sho-bancha (with tamari, p. 131). Use of tamari, miso, and tekka (p. 132).

Also includes instructions for making amasake at home (p. 116; it is a natural sweetener made from fermented sweet rice), and a recipe for Amasake bread (p. 107), instructions for making seitan at home (p. 46-47, using 3½ lb of hard spring or hard winter whole wheat flour; spring wheat flour produces a much softer texture of seitan than the winter variety), and recipes for seitan stew, seitan-barley soup, sauteed vegetables and seitan, stuffed cabbage with seitan, and seitan croquettes (p. 47-49), plus recipes for leftover seitan (p. 125). Address: East West Foundation, near Boston/Cambridge, Massachusetts.

2147. Abiose, Sumbo Henrietta. 1979. *Studies on miso fermentation*. PhD thesis, University of Strathclyde, Glasgow, Scotland. Oct. *

• **Summary:** Letter from Dr. Brian J.B. Wood. 1983. March 16. “Sumbo Henrietta Abiose is a beautiful and charming Nigerian lady. She came to do a PhD here on some aspect of food microbiology and was assigned to me. I chose the topic, she accepted it, and Mr. Mark Allen and I supervised it. She is now lecturing in: Dep. of Food Science &

Technology, University of Ife, Ile-Ife, Nigeria. She worked with us while her husband qualified for his fellowship at the Royal College of Dental Surgeons.”

2148. Barton, David. 1979. Foods from the Far East. *Whole Foods (Berkeley, California)*. Oct. p. 28-34, 54.

• **Summary:** Mutual Trading Co. is making 500 tons of miso a year, and this is expected to increase by 10-15% in 1980. Their miso sales are up 300% in 5 years. Erewhon wholesale sales by product for the year ended June 1979 were: Miso \$100,000, shoyu \$200,000, tofu \$110,000. Japanese trade commission figures for 1978 natural food imports are: Miso \$625,528, and shoyu \$1,466,909.

2149. D.B. 1979. Down-home miso [from Ohio Miso Co.]. *Whole Foods (Berkeley, California)*. Oct. p. 62.

• **Summary:** About Ohio Miso Co. started in Monroeville, Ohio by Thom Leonard and Richard Kluding. “Although the Japanese have started manufacturing [miso] here, there only appears to be one Caucasian American operation [Ohio Miso Co.] going at this point, with another one on the way.

“The start of the Ohio Miso Co. in Monroeville, Ohio, was one of those inexplicable coincidences which are usually dismissed as chance in the West, but which our Oriental counterparts may call ‘karma.’ Thom Leonard, a man of considerable experience in natural foods even though still in his 20s, was passing through Ohio visiting friends when he was introduced to Richard Kluding, the owner of a natural food store in Norwalk, Ohio. It so happens that Kluding, in his mid-30s, also had a small 26-acre farm nearby, with good quality well water. And as Thom explained his dream of producing high-quality miso, and gave him some two-year-old miso he’d already produced to try, Richard let it drop that he also had some capital.

“Within a month [in Oct. 1978], they’d started building a 1200-square-foot shed to house the 60,000 pounds of miso that are now sitting there to mature. What’s so special about this miso, and why are some Americans walking where others fear to tread?

“It’s the ingredients, plus the fact that Thom had the expertise to know how to grow koji, which is the heart of the operation, explains Richard Kluding. ‘The miso is made with all organic products—whole grain brown rice, the short-grained variety from Lundberg Farm in California, and a variety of soybeans which are higher in protein and lower in oil.’”

“‘We have a very deep well, with very clean, pure-tasting water,’ he added. ‘And the miso is being stored in 300-gallon wooden vats specially made in Buffalo, New York, as opposed to the plastic types of materials often used now.’” Then discusses some of Leonard’s experiences making “the mysterious koji.”

Notes in closing that Oakseed Co. [sic, Oak Feed Store] from Miami, Florida, is planning to start up a miso facility in North Carolina.

2150. Kiuchi, Kan; Suzuki, Osamu; Ohta, Teruo; Sato, Emiko; Ebine, Hideo. 1979. [Studies on lipids of soybean foods. VII. Isolation of halotolerant yeasts capable of assimilating linoleate in miso]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 35. p. 224-30. Oct. [20 ref. Jap; eng]

• **Summary:** Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 25(9): (1978). Address: National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

2151. Kluding, Richard; Leonard, Thom. 1979. Ohio Miso Company, Inc (Leaflet). Monroeville, Ohio. 1 p. Single sided. 28 cm.

• **Summary:** This untitled leaflet, printed with brown ink on beige paper, begins: “Thank you for your inquiry about the Ohio Miso Company. We are glad to have this opportunity to tell you about ourselves and our miso. Our shop is small, the equipment simple, the process traditional and labor intensive. Because we choose to be a relatively small shop, we are able to make miso as craftsmen, continuing a tradition of centuries, always mindful that we do not, in fact, make miso, but merely do our best to provide the ideal conditions for the miso to mature and ripen.”

“We leave our miso in its unpureed state, giving it a traditional whole koji texture. It is not pasteurized, or heat-treated to increase its shelf life; neither are any preservatives used. It is a live food containing myriad yeasts, enzymes, and bacteria.

“We offer the following varieties: Mellow Brown Rice Miso, Mellow Barley Miso, 8 Month Barley Miso.

“Beginning in the spring of 1980 we will have: 1 Year Barley Miso, 1 Year Brown Rice Miso.”

At the bottom is the company name, address, and logo, a handsome illustration of a wooden miso vat with stones on top. Address: Route 2, Monroeville, Ohio 44827. Phone: 419/668-9512.

2152. Taira, Harue; Taira, Hirokadzu; Mori, Y.; Ushirogi, T.; Fujimori, I. 1979. Daizu shushi no kansô shori hôhō to sono hinshitsu ni tsuite. IV. [Influence of dry treatment after harvest on quality of soybean seeds. IV. Suitability for food processing of stored seeds]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 35. p. 160-71. Oct. [11 ref. Jap; eng]

• **Summary:** The effects of dry treatment (drying) after harvest on the physical properties, chemical composition, and suitability for food processing of soybean seeds were investigated. The heat treatments were natural drying and

air drying using heated and non-heated air at 20, 30, and 40°C.

The seeds were then stored at 15°C with RH (Relative Humidity) of 65% and 75%, at 30°C with RH of 65% and 75%, and at room temperature and humidity in a paper bag for 30, 60, 120, 180, 270, and 360 days, respectively. These various storage conditions were further investigated for their effects on suitability for food processing.

At a given RH, the seed moisture rose as the temperature rose; many figures are given. Seed quality degenerated as storage time increased. The following decreased: absorbability of water in seeds, rate of germination, extractability of protein from soaked seeds by hot water, pH of soybean milk, and ratio of weight of steamed seeds to raw seeds. And the following increased: soluble matter and protein in soak water, moisture content, hardness and darkness of color of steamed seeds.

Conclusion: Soybeans should be stored in a cool, dry place, ideally at a temperature of 15°C (50°F) or below and an RN of 75% or below. Remarkable deterioration was observed at 30°C with RH of 75%. Seeds heat dried at 40°C showed a significant decrease in suitability for making miso, natto, or cooked soybeans. Tofu making was less affected by drying the seeds with heated air.

Reprinted from *Proceedings of the Crop Science Society of Japan (Nippon Sakumotsu Gakkai Kiji)* 48(2):291-302 (1979). Address: 1-2. National Food Research Inst., Ministry of Agriculture, Forestry and Fisheries, (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3-4. Hokkaido Prefectural Central Agric. Exp. Station, Naganuma, Hokkaido 069-13.

2153. *League for International Food Education (LIFE) Newsletter*. 1979. Some recent references on fermented foods. Nov. 1. 10 p. [60 ref]

• **Summary:** Contents: Books (11 books, incl. 7 on fermented soyfoods by Shurtleff & Aoyagi). Articles: Tempeh (12), peanuts (3), miso (4), miscellaneous products (30). Address: 1126 Sixteenth St., N.W., Room 404, Washington, DC 20036.

2154. Kushi, Aveline. 1979. Cooking with miso. *East West Journal*. Nov. p. 56-57, 59-61.

• **Summary:** Excerpts from the book *How to Cook with Miso*, by Aveline Kushi. "Putting miso in soup is the ideal way to use it every day. It is advisable for any condition, for any kind of person." Generally, people with a yin, or passive type of condition, should prepare a more yang (strong) type of miso soup, and people with a yang, or active type of condition, should make a more yin (light-tasting) type.

2155. **Product Name:** Mugi Miso. Renamed Barley Miso in about 1981.

Manufacturer's Name: Shin-Mei-Do Miso Co.

Manufacturer's Address: 5 Wren Road, Denman Island, BC, Canada V0R 1T0. Phone: 604-335-0253.

Date of Introduction: 1979. November.

Ingredients: Barley koji, soybeans, salt, water.

New Product-Documentation: Talk with Yasuo Yoshihara. 1996. March 22. Their second miso, introduced in November 1979, was a barley miso named "Mugi Miso." Sold only to natural- and health food stores, it was renamed "Barley Miso" in about 1981.

2156. Edward & Sons Trading Co. 1979. Have you ever wished someone would create a truly wholesome satisfying snack, with the traveler and working person in mind? Someone has! Miso-Cup. Delicious vegetarian soup in seconds (Ad). *Vegetarian Times*. Sept/Oct. p. 9.

• **Summary:** This ¼-page black-and-white ad shows a photo of a box of Miso-Cup next to mug of the prepared soup and an open lunch box containing one foil packed of the instant soup. The text reads: "Convenience without compromise. Available wherever fine natural foods are sold. Ingredients: soybeans, rice, sea salt, onions, parsley.

This ad also appeared in 1979 in *East West Journal* (Dec. p. 15). Address: P.O. Box 271, Union, New Jersey 07083.

2157. Hansen, Sandra; Randall, Chris; Dallam, Bette; Friedman, Ruth. eds. 1979. Sunyata's whole foods cookery for big & little folks: A vegetarian cookbook. Eau Claire, Wisconsin: Sunyata Whole Food Co-op. 332 p. Dec. 3. Illust. Index. 22 cm. [9 ref]

• **Summary:** A glossary titled "Odds and Ends" (p. 32-33) contains entries for tamari, miso soybean paste, and tofu. Soy-related recipes include: Rye oatmeal soy bread (p. 69). Soybean casserole (p. 142). Soy flour and grits are discussed under "Complementary protein proportions" (p. 113). Page 117 notes that soybeans should be cooked for 3 hours or more, soy grits for 15 minutes. Address: Eau Claire, Wisconsin.

2158. Soy Plant (The). 1979. Tofu gratuity (Leaflet). Ann Arbor, Michigan. 1 p. Undated. 11 x 9 cm.

• **Summary:** This tiny, hand-lettered "take one" reads: "Gift certificates may be purchased at a 10% discount through January 31st 1981. Visit our retail store, 211 E. Ann, Ann Arbor, Michigan. 663-0500." An illustration shows a wheel with spokes; on each spoke is written: Tempeh, soysage, tofu, soymilk, miso. Across the diameter: "Soy foods for body & planet." In large letters across the bottom: "The Soy Plant." Address: 211 East Ann St., Ann Arbor, Michigan. Phone: (313) 663-0500.

2159. White Wave Soy and Natural Foods. 1979. Product price list: Winter. 3869 Walnut St., Boulder, CO 80301. 6 panels. Catalog. Dec.

• **Summary:** Soyfoods: Nigari tofu (bulk, packaged, doufu [extra firm Chinese style]). Salad dressings (mellow miso salad dressing, hearty miso salad dressing). Tempeh. Soysage. Tofu Mayo. Savory baked tofu. Polar bean (banana-carob soy ice cream).

The company also sells sesame products (raw tahini, roasted tahini, sesame butter, sesame salt), peanut butters (salted or unsalted; crunchy natural, creamy natural, Valencia {crunchy or creamy}), more nut and seed butters (roasted almond butter, raw cashew butter, roasted cashew butter, roasted sunflower butter), and tamaried nuts and seeds (tamaried almonds, tamaried cashews, tamaried Spanish peanuts, tamaried sunflower seeds, and tamaried nut mix [a blend of peanuts, sunflower seeds, cashews, and almonds]). Note: This is the earliest English-language document seen (July 2005) that uses the word “tamaried” to refer to nuts and seeds that have been seasoned with tamari soy sauce and then baked.

“White Wave was founded in 1977 upon the principle of supplying the Rocky Mountain region with high quality protein foods. As these foods are an extension of our own lifestyles, we offer only products we personally feel are wholesome and nutritious. It is our pleasure to guarantee the quality of all our products. All foods carrying a White Wave label are made solely by us. We thank you for supporting our business. The Folks at White Wave.” Address: White Wave, 3869 Walnut St., Boulder, Colorado. Phone: 303-443-3470.

2160. **Product Name:** Miso Salad Dressing [Mellow, Hearty, or Yellow].

Manufacturer’s Name: White Wave.

Manufacturer’s Address: 3869 Walnut Street, Boulder, CO 80301.

Date of Introduction: 1979. December.

New Product–Documentation: Product Price List. 1979, winter. 8 oz. jar for \$1.12. Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239. Sold in an 8 oz. jar.

2161. Hondo, S.; Mochizuki, T. 1979. [Effects of saccharides on the formation of texture and color of miso] *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 26:509-13. [Jap; eng]*

2162. Hondo, S.; Mochizuki, T. 1979. [Polysaccharides in soybean-steamed waste water and miso]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 26:461-68. [Jap; eng]*

2163. Ko, Tokubo. 1979. Kankoku no hakkō shokuhin [Korean fermented foods]. *Hakko to Kogyo (Fermentation*

and Industry) 37(3):202-11. [75* ref. Jap]

• **Summary:** Shoyu and varieties of miso: 1. Historical background: The major foods used in Korea that contain soy are soy sauce (kan jang), soybean miso (doen jang), and red-pepper miso (kochu jang). Also there are jonkutsu jang, tamusu jang (makujang) and jupu jang. The suffix jang is the same as the Chinese chiang and the Japanese hishio, meaning mash. The origins of the varieties of shoyu and miso are not clear. But there was a character, tojang, in “Ronko” which was written by Oju? of the Gokan period. Also, there are some references to jang in the *Analects of Confucius* (Lun yu; Jap. Rongo). They indicate that jang existed years before Christ. In the “Kaitoyakushi?” there is a quotation from “Shintosho?” (618-907) that “shi” (soy nuggets or misodama) was a well known product of Bokkai (north of the Yellow Sea) in those days (Sakueki). It is thought that jang first appeared in Manchuria (Manshu was called Kokuri in those days) where soybeans were originally grown. Soybeans later spread to China and Japan.

In Korea the oldest record of any variety of jang was found in *Sangokushiki* (683) as “shōshi?”. This indicates that people were already making shoyu and miso quite early on. In the *Ch’i-min yao-shu* (AD 530-550) a method of shi (or kaki) making was recorded. We guess that shi was the predecessor to today’s meju (= misodama). The classic book *Kyukosetsuyo?* that was compiled in 1554 (Richo? period–Meisoo 9) is the oldest book that contains the techniques for making the Korean varieties of jang. About 8 different methods of production were recorded, amongst them the sink gan (chinjangho) and zojangho methods. In those days, meju (= misodama) was called misho. It is written that they steamed the soybeans, roasted and ground the wheat, then mixed the soy and the wheat in a 2:1 ratio. From this they made koji and dried it in the sun. That method was very similar to the koji-making method used in Japan. In Japan it was called kokori, hishio, or misho. Later, shoyu became known as jang? Miso became massho? and then returned to being called misho. Address: Presently: Tokyo Daigaku Biseibutsu Kenkyusho #3 Kenkyubu. Formerly: Seoul, South Korea. Tokoku Daigaku Shokuhin Kogakubu.

2164. *Meditation (Tokyo, Japan)*. 1979. Daizu wa eiyō no haha [Soybeans are the mother of nutrition]. No. 7. p. 42-44. [Jap]

• **Summary:** About the work of William Shurtleff, age 38, with soybeans, tofu, and miso. A photo shows Shurtleff.

2165. **Product Name:** Cold Mountain Miso [Red, Mellow White, or Light Yellow].

Manufacturer’s Name: Miyako Oriental Foods, Inc.

Manufacturer’s Address: 404 Towne Ave., Los Angeles, CA 90013.

Date of Introduction: 1979.

Ingredients: Soybeans, rice, miso culture, salt.

Wt/Vol., Packaging, Price: 14 oz plastic tubs, with lids.

How Stored: Refrigerated preferably.

New Product–Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 238. Food Technology. 1986. Jan.; Economic World. 1987. June. p. 46. The brand name and package design were developed by Shurtleff & Aoyagi of Soyfoods Center.

2166. **Product Name:** New Mexico Natural Sweet White Miso.

Manufacturer's Name: Natural Cafe (The).

Manufacturer's Address: 1494 Cerrillos Rd., Santa Fe, NM 87501.

Date of Introduction: 1979.

Wt/Vol., Packaging, Price: Tub.

New Product–Documentation: Talk with Martin Roth. 1989. Aug. 17. He learned to make this miso from *The Book of Miso* by Shurtleff & Aoyagi. He and his wife, Barbara, made it in their apartment in Santa Fe. For a short time they were packaging it and distributing it as far away as Albuquerque. They sold the miso over the counter out of tubs at the restaurant as a commercial product. Then they started making salad dressings using the miso. They were planning to launch the dressing as a commercial product in bottles and even had the labels printed, but then the restaurant kind of overwhelmed them with its demands, so they dropped the idea of wholesaling food and instead served the miso salad dressing in the restaurant. "We were very soy based at the time."

2167. **Product Name:** The Original Fried Rice Sandwich (With Tofu).

Manufacturer's Name: Natural Cafe.

Manufacturer's Address: 1494 Cerrillos Rd., Santa Fe, NM 87501.

Date of Introduction: 1979.

Ingredients: Organic brown rice fried with scallions and soy sauce, wrapped in a whole wheat tortilla with steamed organic carrots, alfalfa sprouts, miso tahini sauce, tofu, green leaf lettuce.

Wt/Vol., Packaging, Price: 10 oz. Retail for \$2.95 (1988).

New Product–Documentation: Label sent by Paul Duchesne. 1989. Aug. 11. Handwritten "Naturally delicious. Made fresh today. To eat; peel back wrapper from one end." When Paul went to Boston, he taught Barbara and Marty Roth how to make the Brown Rice & Tofu Sandwich. (Barbara's maiden name was Svenning; she married Jack Garvey then lived for years with Marty Roth.) After he left, they made it for a while. Then they began as a restaurant in Santa Fe, New Mexico based on a this sandwich. At one point they were making their own tofu, sprouts, and chapatis. When Barbara separated from Marty (they were never officially married), she moved to Black Mountain

(near Asheville), North Carolina, where she continued to make a line of tofu sandwiches.

Talk with Martin Roth. 1989. Aug. 17. He learned how to make The Original Fried Rice Sandwich (With Tofu) from Paul Duchesne at the macrobiotic study house on Boylston St. in Brookline, Massachusetts. In about 1979 Martin (unable to convert his macrobiotic house to a Zen center) moved to the Bodhi Mandala Zen Center in Jimenez, New Mexico. He was the head cook (Tenzo) for a while. Then, forsaking Zen for tofu, he and Barbara Svenning Garvey moved to Santa Fe into the Linda Motel on Cerrillos Rd. They got a room with a stove, and then persuaded the Santa Fe Health Inspector to certify the room as a facility for tofu sandwich production. They fried the rice and made the chapati-wrapped sandwiches early each morning, wrapped them in plastic, and delivered them to the local co-ops and health food stores. The sandwiches soon became very popular (they were selling 30-50 a day, six days a week), so they expanded into an apartment and decided to start a natural foods manufacturing and distribution company named New Mexico Natural. In the apartment they made the sandwiches, and started to make tofu, mochi, sweet white miso, sauerkraut, pickles, amasake, etc. In late 1979 or early 1980, as the sandwich grew even more popular they bought an old Mexican restaurant in Santa Fe named El Charro and converted it into a natural foods and macrobiotic restaurant called the Natural Cafe, based on the brown rice and tofu sandwich which evolved into the Fried Rice Plate (with tofu) and remained their most popular item. They were purists and self sufficient. All ingredients were organically grown and they used only spring water, even in their ice cubes. They made their own tofu from soybeans, their own miso, and their own chapatis from wheat. They grew their own sprouts and ground their own sesame seeds for the sauce. They made seitan and sold seitan burgers. As the restaurant business demanded more and more of their time, they decided to discontinue the distribution company.

At one point Martin considered starting a tofu shop, but a rebuff from a local Japanese restaurant, the fact that they were too busy with other things, and the availability of good tofu from Kathryn Peterson Bennett of Southwest Soyfoods (which she had started by June 1978) led him to drop the idea. But they sold miso out of the restaurant as a commercial product. At the restaurant they also made and sold amasake, amasake shakes (which the Mexican men loved, and called "chakes"), and amasake ice cream. Martin believes this was America's first amasake ice cream.

In 1981 Martin and Barbara sold the restaurant to one of their employees; it still exists under the same name. Then they went to Boulder for several months, then to Miami for several months, then to North Carolina, where they stayed for several years while Martin helped to start Great Eastern Sun. In about 1985 they separated and Barbara moved back to North Carolina.

2168. **Product Name:** Miso.

Manufacturer's Name: Pillar of Dawn (Amud Ha Shachar).

Manufacturer's Address: Moshav Me'or Modi'im, Doar Na Hamercaz, Israel.

Date of Introduction: 1979.

New Product–Documentation: Talk with Avraham Sand. 1981. This was Israel's first tofu shop; they also made soymilk, tempeh, and miso, but only the tofu and miso were sold commercially, off the moshav, in Jerusalem. Ben Zion Solomon pioneered the miso development.

Shurtleff & Aoyagi. 1982. *Soyfoods Industry: Directory & Databook*. Owner is now Ben Zion Soloman.

Talk with Avraham Sand. 1990. Sept. 9. Gives a detailed history of this company and its work with miso.

2169. **Product Name:** Powdered Soybean Miso.

Manufacturer's Name: San-J International, Inc.

Manufacturer's Address: 3236 Boulevard, Colonial Heights, VA 23834. Phone: 804 / 520-1513.

Date of Introduction: 1979.

Ingredients: Soybeans, water salt (No wheat).

Wt/Vol., Packaging, Price: 44 lb (22 kg) metal cans.

How Stored: Shelf stable.

Nutrition: Moisture 5%, protein 33%, carbohydrates 25%, vegetable fat 14%, salt 20%. 332 calories per 100 gm. 6.08 gm glutamic acid per 100 gm.

New Product–Documentation: Product Data Sheet. 1982. Contents: Description. Ingredients. Composition. Amino acids per 100 gm. Characteristics. Application. Specific suggested uses. Packaging. Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239.

Letter (fax) from Norio Kushi. 1995. May 1. Steve Zoller says that San-J sells a miso powder, which they import from Japan. It has always been an imported product.

2170. So, Enshi. 1979. Taiwan no hakkô shokuhin [Fermented foods of Taiwan]. *Hakko to Kogyo (Fermentation and Industry)* 37(2):102-12. [Jap; eng+]

• **Summary:** Includes a good map of Taiwan and its prefectures. In 1976 there were 433 soy sauce manufacturers in Taiwan. Taiwanese divisions of grading soy sauce plants numbered as follows: A (Ko) class, 39; B (Otsu) class, 12; C (Hei) class, 223; others 159. They produced the equivalent of 1,681,870 dozen bottles/month. Each bottle contains 540 ml of soy sauce, so 12 bottles contain 6,480 ml or 6.48 liters or 1.712 gallons. Thus Taiwan produces 10.89 million liters a month or 130.71 million liters/year of soy sauce. This is equivalent to 2.878 million gallons a month or 34.53 million gallons a year. Taipei prefecture produced 46.8% of this total, followed by Changhwa prefecture with 10.7%.

Soy sauce was initially made by monks. Because they didn't eat meat, it gave them important protein and fat. Gradually, it became more popular and spread to all parts of China. Monks also transmitted the method of soy sauce production to Japan and all over East Asia. It is said that around 1230 A.D., the Zen monk, Kakushin of Kofukuji, Kishu Yura, went abroad to southern Sung in China and brought back to Japan fermentation methods of Miso and Kinzanji Miso.

There are 3 types of soy sauce produced and sold in Taiwan today: (1) Tou-yu, soy sauce (*daizu shoyu*) which originated in China, (2) Inyu, black bean sauce which is the traditional Taiwanese soy sauce, and (3) Chemically prepared soy sauce (*kagaku shoyu*) which was invented in Japan. Processing techniques for making Koji and pressure-straining methods have made great progress in recent years. Address: Kokuritsu Taiwan Daigaku Kyoju, Ken Nogyo Kagaku Kenkyu-jo sho-cho, Nôgaku Hakase.

2171. **Product Name:** Spinach Tofu Pie.

Manufacturer's Name: Soy Plant (The).

Manufacturer's Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.

Date of Introduction: 1979.

Ingredients: Filling: Tofu, spinach, onion, miso, cider vinegar and spices. Crust: Whole wheat flour, sunflower seeds, oats, corn oil, water.

Wt/Vol., Packaging, Price: 6 oz.

How Stored: Refrigerated.

New Product–Documentation: Oval Label in Soy Plant scrapbook from 1979 or 1980. 3 by 3 inches. Green on beige. 6 oz.

Talk with Steve Fiering, a founder of The Soy Plant in Ann Arbor. 2000. Dec. 3. This was like a quiche (savory, not sweet) probably developed by an African-American guy named Jura (pronounced ju-RAH) McDowell. "He was a very creative cook, definitely interested in what we were doing, and became a real part of the whole group."

2172. Watanabe, Tokuji. 1979. Developments in the processing of traditional soybean foods in Japan. In: *Proceedings of the Fifth International Congress of Food Science and Technology*. Tokyo: Kodansha. See p. 66-73. [9 ref]

Address: Kyoritsu Women's Univ., Tokyo, Japan.

2173. Aihara, Cornelia. 1979. *The calendar cookbook*. George Ohsawa Macrobiotic Foundation, 1544 Oak St., Oroville, CA 95965. 253 p. [unnumbered]. Illust. by Nan Schleiger. Index. 17 x 24 cm.

• **Summary:** This macrobiotic cookbook is designed for cooking with the seasons. Breakfast and dinner menus are given for every day of the year. A glossary gives brief descriptions of the Japanese foods listed in the recipes. For

example: “Tamari: traditional soy sauce (*shoyu*) made without chemicals. Tofu: curdled soy milk. Tekka: condiment of miso and vegetables cooked a long time.” All recipes are numbered.

Soy-related recipes include: 2d. Baked mochi with kinako. 4. Kombu, age, albi nishime. 5. Black bean nishime [these are almost certainly black soybeans]. 8. Amasake. 8a. Amasake kanten. 13. Natto with pickled daikon leaves. 18. Vegetable miso soup. 20. Mackerel with ginger miso. 28. Wakame miso soup. 32. Kidney beans with miso. 35. Onion miso. 46. Burdock, carrot and lotus root with oily miso. 60. Vegetable oden (with stuffed age). 63. Collard greens with age nitsuke. 64. Home-made age (deep-fried tofu). 73. Home made natto I and II. 75. Northern white beans with miso. 80. Home made tofu and nigari. 80a. Clear soup with tofu and shingiku [sic, *shungiku* = chrysanthemum leaves]. 80b. Tofu-scallion miso soup. 82. Amasake cake with cream cheese frosting (3-layer, using 1 lb of dairy cream cheese). 87. Wheat gluten (made from 10 cups whole wheat flour and 4 cups unbleached white flour). 87a. Seitan (with wheat gluten and tamari soy sauce). 87b. Fresh wheat fu (with wheat gluten). 87c. Boiled fu. 87d. Fried fu (Gluten cutlet). 87e. Cutlet kabobs (with cooked wheat gluten). 97. Scallion miso. 100. Okara nitsuke (okara is “soybeans which are leftover after making tofu”). 132. Amasake cake. 135. Amasake yeasted doughnuts. 138. Vegetable kabobs with lemon miso sauce. 159. Koi-koku (carp soup with barley miso). 161. Amasake cake with fruit and nuts. 177. Buckwheat dumpling miso soup. 183. Cooked vegetable salad miso ai (miso dressing). 191b. Tomato sauce with miso. Amasake cookies. 197. Onion cream miso soup. 199. Soybean soup. 220. Tofu, snow peas and white rice miso soup. 229. Cucumber with miso. 233. Fresh corn tortillas with scallion and oily miso. 236. Toasted rice balls with soy sauce or miso. 244. Barley miso soup. 245. Tekka [miso]. 251. Pan-fried eggplant with lemon-miso sauce. 257. Green pepper with sauteed miso. 259. Tofu with mustard sauce. 261. Goma tofu (made from sesame butter and a little tamari soy sauce). 263a. Parsley miso pickles. 263b. Miso pickles. 266. Amasake wedding cake. 274. Shingiku miso soup. 290. Tofu with kuzu sauce. 294. Soybean nitsuke. 304. Kombu, dried tofu, age nitsuke. 305a. Millet and soybean soup. 329. Amasake crescent cookies. 333. Tofu-egg clear soup with watercress.

The Acknowledgments section begins: “After the French Meadows Summer Camp sponsored by the George Ohsawa Macrobiotic Foundation in 1972, I looked over the menus of the meals I served at camp. In revising them, I had the idea to keep a one-year record of menus. I thought this would be a practical, everyday help for those people beginning to cook...

“Since then, seven years passed.” Address: Oroville, California.

2174. Aoki, Hiroshi; Ito, Kiyoe. 1979. *Chôri to daizu* [Cooking and soybeans]. Gakken Shoin K.K., Tokyo. 173 p. Illust. Index. 22 cm. [151 ref. Jap]

• **Summary:** Contents. I. Cooking and soybeans. II. Soybean molecules and soybean protein. III. Cooking and traditional soy protein foods. 1. Cooked whole soybeans (nimame), green vegetable soybeans (yude-mame, edamame), soy sprouts. 2. Roasted soy flour (kinako). 3. Tofu. 4. Deep-fried tofu pouches and tofu burgers (aburaage and ganmodoki). 5. Dried frozen tofu (kori-dofu). 6. Yuba. 7. Natto. 8. Tempeh. 9. Soymilk. 10. Miso (Miso soup, miso-ni, ae-mono). 11. Shoyu. IV. Cooking and new soy protein products. Address: 1. Prof., Otsuma Joshi Daigaku; 2. Prof., Tokyo Gaku Gei Dai.

2175. Barer-Stein, Thelma. 1979. *You eat what you are: A study of ethnic food traditions*. Canada: McClelland & Stewart, Ltd. xii + 13-624 p. Index. 23 cm. [550+* ref]

• **Summary:** This is largely a compilation of information from many other books and articles. On the cover is a color painting of *The Gardener* (or *Vertumnus*), from his series, *The Four Seasons*, c. 1590, by Giuseppe Arcimboldo (or Arcimboldi) of Milano.

In Chapter 12, on China, the section titled “Meats and alternates” (p. 110-13) notes that the soybean is called the “Chinese Cow” [sic, “Cow of China”] because of its versatility. Soybeans are used as whole dry beans and as sprouts, or they can be made into a firm white curd called “Chinese cheese” [sic], which can be used in many different ways. Soybean milk may be used in much the same way that westerners use cow’s milk. They are fermented to make the favourite condiment, soy sauce, or “fermented bean curd that is packed in jars and sold as red bean sauce or white bean sauce,…” Cantonese names from soy products are: Mien chiang: A syrup-like sweet bean paste. Dow-foo (tofu). Foo yu (fermented tofu). Tiem jook (dried yuba, broken into pieces). Wow doo [Wu dou]. Black soybeans. Dow see [doushi, soy nuggets]: Salted, fermented black soybeans.

In Chapter 30, on Japan, the section titled “Meats and alternates” (p. 336-37) notes that products made from soybeans include: (1) “Shoyu, a sweetish soy sauce made from wheat and barley [sic], soybeans, salt, and water.” (2) Miso, or “fermented soybean paste,” used mostly for flavouring soups [miso soup]. (3) Tofu, or soybean curd, is a staple in Japanese cookery. “Its smooth, custard-like texture and bland flavour make it an ideal ingredient. It is extremely versatile and readily absorbs other flavours. Many “restaurants in Japan take great pride in their tofu dishes.”

In Chapter 31, on Korea, the section titled “Fruits and vegetables” (p. 350-51) discusses soybeans and their products at length. Soy sauce is used to season *kim* (nori) and other edible seaweeds. Soy sauce is an ingredient in

“hot pepper mash” [*kochu jang*]. Soybeans are used to make “soybean mash” [*doen jang*]. Dry soybeans are roasted in an iron pot, then ground, and the roasted soy flour is used as a garnish over rice cakes or plain cooked rice; children enjoy eating the coarser roasted bits that are sifted out of roasted flour or meal. Soybeans sprouts are eaten lightly cooked as a vegetable. Soybeans are also made into tofu (*tu bu*); a brief description of the process is given, in which the drained curds are left in their hemp bag to form a firm cake, which may be cut, dipped into soy sauce, or fried in sesame oil. “Oil can also be made from the soybeans, but it is not commonly used or prepared.”

Although commercial soy sauce, made in factories, is now widely available, many Korean households still prepare their own soy sauce each fall. Boiled soybeans are pounded, molded into a cone shape, and set to dry until hard. They are then wrapped with rice straw, hung from eaves, rafters or ceilings, and allowed to ferment for several weeks [until they become *meju*]. During the winter, these fermented cones may be stored in huge rice-straw bags kept in a cool place.

In the spring, break the cone into small pieces and place in a large earthenware jar, nearly filled with water. Add salt, spices, red peppers, and a few charcoal lumps. Leave this in the sun for a few days [sic, 30-60 days] until the molded soybean chunks float to the top and the resulting liquid turns black. Ladle out and filter the black liquid, then boil it to make soy sauce. The solids remaining in the jar are used as soybean mash [after the charcoal is removed].

A portrait photo of the author, with a brief biography, appear on the rear cover and in the Introduction. Address: Ph.D. student, Ontario Inst. for Studies in Education, Toronto, Ontario, Canada.

2176. Colbin, Annemarie. 1979. *The book of whole meals: A seasonal guide to assembling balanced vegetarian breakfasts, lunches and dinners.* Brookline, Massachusetts: Autumn Press. Distributed by Random House. 232 p. Illust. Index. 28 cm. Reissued in Feb. 1983 by Ballantine Books, NY. 28 cm. [88 ref]

• **Summary:** In this macrobiotic cookbook, note (despite the subtitle) that fish are used in some recipes, so it is not actually a vegetarian cookbook. The term “shoyu (natural soy sauce)” is used throughout. Contents: Part I: Theory: A kitchen philosophy. Where we are now. Choosing our food. Balance. Menu planning: General guidelines, food categories. In the kitchen: Cooking: why and how, setting up the kitchen, buying, storing, and preserving food, cutting vegetables. Special situations: Eating away from home, if you live alone, entertaining, the art of eating.

Part II: The practice. Using this book. Fall meals. Winter meals. Spring meals. Summer meals. Basic beverage recipes. Homemade bread. Appendix. Bibliography (24 cookbooks, 65 reference books and others).

Soy-related recipes include: Miso soup (with tofu, p. 69), Hiziki [Hijiki] with mushrooms and tofu (p. 74), Tofu-ginger dressing (p. 93), Miso-tahini spread I (p. 94), Oden stew (with fried tofu, p. 112), Fried tofu (p. 113), Miso-tahini spread II (p. 118), Tofu-miso spread (p. 127), Daikon with miso (p. 139), Cold tofu with garnish (p. 144), Tofu-sprout spread on toast (with alfalfa sprouts, p. 146), Tofu cream pie (p. 156), Scrambled tofu (p. 158), Noodles with tofu and bean sprouts (p. 165; the type of “bean sprouts” is not specified), Miso-dill dressing (p. 172), Tofu mayonnaise (p. 182-83), Lemon-miso soup (p. 185), Peanut-apple-miso spread (p. 190), Tofu pickle spread (p. 191), Miso-dill dressing with tahini (p. 195), Miso-vinegar dressing (p. 204), Baked tomatoes with miso (p. 207), Tofu dip (p. 208), Miso dip (p. 209), Tahini-tofu dressing (p. 209), Tofu-mustard dressing (p. 213). Address: 365 West End Ave., New York City, NY 10024. Phone: 212-580-7121.

2177. Doyle, Rodger P. 1979. *The vegetarian handbook: A guide to vegetarian nutrition and foods.* New York, NY: Crown Publishers. x + 182 p. Illust. Index. 24 cm. [20+ ref]

• **Summary:** Table 3, “Daily food guide for vegan adults” (p. 30) recommends soy milk and tofu. The section titled “Weaning infants on vegan diets” (p. 40-44) also discusses soy milk and The Farm in Tennessee. Soy milk is also recommended for pregnant and lactating women (p. 54-55).

Chapter 9, titled “A pair of unusual diets,” discusses macrobiotic diets and fruitarian diets. The author is quite critical of a number of macrobiotic practices and teachings: Studies have shown nutritional deficiencies. Restricted intake of liquids may lead to kidney stones and kidney failure. “The greatest danger of a macrobiotic diet is not to adults but to newly weaned infants... Don’t wean infants on Kokoh... Wean them instead on either milk or fortified soy milk.”

Page 93 states: “Soybeans are among the most valuable of vegetarian foods, not only because of their high-quality protein but because they can be made into soy milk and tofu (soybean curd)... Two other soy products that are widely used in the United States are soy sauce and miso.” Pages 96-97 discuss soy milk and textured vegetable protein (TVP).

2178. Haines, Stephen; Schreiber, Jim; Phillip, Janice; Stein, Ellin. eds. 1979. *Whole foods—Natural foods guide: What happens to natural food products from farm to consumer?* Berkeley, California: And/Or Press. 301 p. *

• **Summary:** Contains thirty articles compiled from the pages of *Whole Foods* magazine. On pages 129-30 are sections on miso and koji, including praise for the “wonderfully comprehensive” *Book of Miso* by Shurtleff and Aoyagi. Address: Berkeley, California.

2179. Lau, Dim Cheuk. 1979. *Confucius: The analects*. New York, NY: Penguin. 249 p. 19 cm. *

2180. L'Aurore. 1979. *La cuisine au tofu: Un art Japonais [Tofu cuisine: A Japanese art]*. Quebec, Canada: L'Aurore. 192 p. Illust. No index. 14 x 22 cm. [Fre]

• **Summary:** Contents: I. Introduction: Table of derivatives of soybeans. Some numbers [statistics]. II. Tofu: Utensils, coagulants, method of preparation of tofu, method of preparation of kinugoshi tofu. Other preparations: Soymilk. Soymilk yoghurt [yogurt]. III. Getting started: Fundamental ingredients, tools of the art, techniques for preparing foods. Fundamental recipes: Bouillons, sauces to accompany basic soy sauce, preparations to accompany basic miso, basic sauces, rice, noodles, sesame salt, grilled soybeans, kofu [wheat gluten]. Recipes using gô, okara, tofu, soymilk, kinugoshi tofu, yuba. Glossary. Useful addresses. Bibliography.

Note: This book is largely based on and pirated from *The Book of Tofu* by Shurtleff and Aoyagi (1975). Address: Quebec, Canada.

2181. Nakano, Masahiro. 1979. *Tezukuri no kenkô shokuhin: Hakkô riyô no subete [Handmade healthy fermented foods]*. Tokyo: Nosan Gyoson Bunka Kyokai. 227 p. Illust. 18 cm. [Jap; eng+]

• **Summary:** Describes how to prepare homemade soymilk cheese (p. 139-42), soymilk yogurt (p. 155), tempeh, and miso (16-39, 84-91). Address: Tokyo, Japan.

2182. National Academy of Sciences, National Research Council, Board of Science and Technology for International Development, Commission on International Relations, Advisory Committee on Technology Innovation. 1979. *Microbial processes: Promising technologies for developing countries*. Washington, DC. xii + 198 p. Illust. No index. 23 cm.

• **Summary:** Soy-related chapters include: 1. Raw materials for microbial processes. In 1977 an estimated 13,842,000 metric tons of soybeans were grown in developing countries. Soybeans were number 15 on a list of 22 major food crops grown in developing countries, and accounted for 1.59% of the total production. The largest crops produced were paddy/rice (21.36% of total), cassava (11.87%), wheat (10.90%), maize/corn (8.41%), and banana/plantain (6.33%). 2. Food and animal feed. Discusses production of meatlike flavors using miso and shoyu, the koji method of producing enzymes, and Indonesian tempeh.

3. Soil microbes in plant health and nutrition. "Mycorrhizal fungi: Most plants, both wild and cultivated, have roots infected with fungi that increase nutrient and water uptake and may also protect the root from certain diseases. These infected roots are called mycorrhizae.

Although the mycorrhizal fungi probably increase uptake of all the essential elements, they are usually most important in improving phosphorus nutrition. Phosphate is generally present in the soil in low concentrations and it is also highly immobile. Strands of fungal hyphae grow out from mycorrhizae and greatly increase the volume of soil from which phosphorus is obtained. So mycorrhizal plants, in general, can grow and thrive in soils much lower in phosphate and other essential nutrients than a comparable nonmycorrhizal plant. Many plants are so dependent on mycorrhizal fungi for nutrient uptake that they may starve if these fungi are absent. There are a number of types of mycorrhizae. The two that occur on the most economically important crops, the endomycorrhizae and the ectomycorrhizae, are discussed."

4. Nitrogen fixation. "Air is four-fifths nitrogen, yet it is the absence of this particular element that most commonly limits food production. Neither man, animals, nor higher plants can use elemental nitrogen; it must first be 'fixed,' that is, combined with other elements such as hydrogen, carbon, or oxygen before it can be assimilated.

"Certain bacteria and algae have the ability to utilize (fix) gaseous nitrogen from the air. Some microorganisms work symbiotically in nodules on the roots of plants, with the plant providing food and energy for the bacteria, which, in turn, fix nitrogen from the air for their host..."

"Bacteria that fix nitrogen in nodules on the roots of leguminous plants are called rhizobia..."

"Leguminous plants have been known for centuries to enrich soils, but the reason was not understood until 1886 when two German scientists, Hellriegel and Wilfarth, found that the bacteria in the nodules on the leguminous root brought about nitrogen fixation. Nitrogen-fixing microorganisms fix an estimated 175 million metric tons of nitrogen annually, or about 70% of our total supply. The remainder is produced in chemical fertilizer factories." The nitrogen fixed by the soybean-rhizobium association is about 60-80 kg/ha/year. 5. Microbial insect control agents. Green cloverworm on soybeans can be controlled by *Bacillus thuringiensis*. 10. Pure cultures for microbial processes. Discusses world culture collections. Address: Washington, DC; Peoria, Illinois.

2183. Padilla, Jean. 1979. *Les recettes végétariennes de l'Auberge "in" [The vegetarian recipes of the Auberge "Inn"]*. Paris: Editions Robert Laffont. 142 p. Illust. No index. 22 cm. [Fre]

• **Summary:** The Auberge "Inn" is apparently a restaurant in France. In French, the word *Auberge* refers to an inn, public house, hostel, or tavern. Soy-related recipes include: Macao salad (with soy sprouts, p. 113). Tropical salad (with soy sprouts, p. 116). Macrobiotic pâté (with soy flour, sesame butter, etc., p. 125). Miso pâté (with miso [soja fermenté em pâté], chickpea flour, Chinese-style tofu [pâte de soja =

fromage de soja], and soy sprouts, p. 126). Shallot sauce (with tamari, p. 127). Clafoutis Auberge "In" (with soy flour, p. 137). Address: Paris, France.

2184. Peppler, Henry J.; Perlman, D. eds. 1979. Microbial technology. 2nd ed. Vol. 1. Microbial processes. Vol. 2. Fermentation technology. New York, NY: Academic Press. Vol. 1, 544 p. Vol. 2, 536 p. Subject index.

• **Summary:** Contents of Vol. 1: 1. Beer brewing. 2. Cheese. 3. Distilled beverages. 4. Mold modified foods, by Hwa L. Wang and C.W. Hesseltine (p. 95-129, cited separately; incl. soy sauce, miso, hamanatto, sufu, tempeh). 5. Wine. 6. Vinegar. 7. Ketogenic fermentation processes. 8. Mushroom fermentation. 9. Inocula for blue-veined cheese and blue cheese flavor. 10. Microorganisms for waste treatment. 11. Elementary principles of microbial reaction engineering. 12. Microbial culture selection. 13. Methods for laboratory fermentations. 14. Instrumentation of fermentation systems. 15. Computer applications in fermentation technology. 16. General procedures for isolation of fermentation products. 17. Use of immobilized cell systems to prepare fine chemicals. 18. Economics of fermentation processes. 19. Fermentation processes and products: Problems in patenting. Address: 1. Universal Foods Corp., Milwaukee, Wisconsin; 2. School of Pharmacy, Univ. of Wisconsin, Madison.

2185. Rattazzi, Ilaria; Rivetti, Franz. 1979. La soia. Semi e germogli: come coltivarli, prepararli e cuocerli. Gli abbinamenti con carne e verdure. Come preparare il go, il latte di soia e il tofu [Soybeans. Seeds and sprouts: how to grow, prepare, and cook them. Combining with meat and vegetables. How to prepare fresh soy puree (gô), soymilk, and tofu]. Milano, Italy: Sonzogno. 127 p. [73 ref. Ita]

• **Summary:** Contains many recipes. Address: Italy.

2186. Riker, Tom; Roberts, Richard. 1979. Directory of natural and health foods: A sourcebook for dietary revolution. New York, NY: Putnam (A Paragon Book). 320 p. Index. 37 cm.

• **Summary:** The first part of this book (p. 7-49) consists of essays on natural foods and nutrition (some reprinted). Part two is a commercial catalog/directory of natural foods available in 1979; it lists and describes (with many photos and labels) products from most of the major U.S. natural foods manufacturers. An Index (p. 293-308) lists participating companies alphabetically.

Soy-related products include: Hain Super-E Soy Oil and Crude [unrefined] Soy Oil (Los Angeles, California, p. 55). Health Valley Soy Moo (Montebello, California, p. 56). Edward & Sons Miso-Cup (Union, New Jersey, p. 57). Family Orchards Fruit & Nut mixes, incl. Back Packer+*, Hi-Fiber Mix+, Hi-Iron Mix+, Hi-Protein Mix+*, Hiker's Helper, Mixed Nuts*, Mountain Munchies*, Tamari Mixed

Nuts* (+ = contains Soy Nuts; * = contains Tamari Peanuts) (Berkeley, California, p. 60-61). Niblack Tamari Pumpkin Seeds (Pepitas), Tamari Roasted Sunflower Seeds, Liquid Lecithin, Granular Lecithin (Rochester, New York, p. 72-73). Arrowhead Mills Unrefined Soybean Oil (Hereford, Texas, p. 75). Good Morning New England Granola incl. Cashew-Raisin Bran-ola (with okara soy fiber), Happy Trails Mix (with roasted soynuts) (Amherst, Massachusetts, p. 79). Elam's Soy Flour (Broadview, Illinois, p. 81).

A long section on Erewhon and its products (p. 84-108) is probably the reproduction of an Erewhon catalog. Erewhon is now located at 3 East Street, Cambridge, MA 02141. Following several pages about the company and its philosophy and standards, each of its major products is discussed in detail, often with nutritional analyses. A label for Soy Flour (organically-grown stone-ground, 24 oz.) is shown; the main recommended use is for making soy milk! A major part of the presentation is titled "Japanese food guide." Products described include: Umeboshi (2 pages): Plums pickled in brine (umeboshi). Umeboshi paste. Plum concentrate (*bainiku ekisu*). Miso (2 pages): Hatcho, waka-Hatcho, soybean, barley, brown rice, rice, and natto miso varieties. Tekka (made with Hatcho miso). Sweets made from mizu ame [rice syrup]. Nigari. Gomashio. Koji starters for various types of miso or shoyu. Goma-muso (60% barley miso and 40% whole sesame seed butter). *Gomamiso furikake* (with barley miso, whole roasted sesame seeds, and shredded nori seaweed). Kombu candy. Kokkoh. Dried tofu (*Kohya-dofu*). Brown rice sake. Mirin. Gluten cakes (*Kuruma-fu*). Seitan (Gluten cooked in shoyu). Rice crackers seasoned with tamari soy sauce. Kuzu (3 pages). Tamari and shoyu (4 pages; Johsen Shoyu is made in Sendai and tamari is made by San-jirushi Co.). Seaweeds (4 pages): Kanten, arame, hijiki, kombu, ne-kombu, nori, seasoned nori, kanten, kanten flakes, wakame, and mekabu.

Good Food brand Soy-Millet Bread (Austin, Texas, p. 120). Arrowhead Mills Bulgur-Soy Grits (p. 121). Erewhon Morning Cereal, and Infant Cereal (each containing soy beans). Chico-San Black Soybeans (imported), and Azuki Beans (Dainagon imported small red), and Lima Soy Sauce (Chico, California, p. 126-27). Arrowhead Mills 7 Grain Cereal, and Deaf Smith Crunch (granola-type cold cereal) (each contains soybeans, p. 130).

The section on pages 188-197 is titled "Soy." It lists Farm Foods Tempeh Kit, Tempeh Starter, Natural Nigari for Curding Tofu, Soyflour, Whole Cleaned Soybeans, Good for Ya Textured Vegetable Protein (Summertown, Tennessee, p. 189). New England Soy Dairy Tofu (with many tofu recipes, Greenfield, Massachusetts, p. 192-96).

The Redwood Sprouter Co. sprouter containing Soy Sprouts (1976, Austin, Texas, p. 202-04). Worthington Foods (a photo shows their line of 38 products). Millstone Burger-Like (with soy flour and TVP), Wheat Fries (with wheat gluten), Tender Cuts (with wheat protein and soy flour) (Penryn, California, p. 222-23). Sunrise Health Products Lecithin Granules (p. 274-75).

2187. Smith, Elizabeth Bernice. 1979. Vegetarian meal-planing guide: A lacto-ovo-vegetarian diet. Winnipeg,

Manitoba, Canada: Hyperion Press Ltd. 104 p. Illust. (some color). 21 x 22 cm. [57+ ref]

• **Summary:** At head of title: “Dr. Elizabeth Smith’s New World of Eating.” Table 5e (p. 25) lists calories for meat alternates group. Soybean sprouts, miso, soybean curd (tofu), soybean milk, and TVP are moderate calorie, while soybeans and soy grits are high calorie.

Page 47 notes: “Generally speaking, legumes are moderately deficient in methionine. Soybeans are an exception, as are their by-products, tempeh (fermented), tofu (the curd formed for soya), and soybean milk. All these are roughly equivalent in quality to cow’s milk.

Page 49 notes that when breast feeding is not possible, soyamilk may be formulated as a very satisfactory substitute; vitamin B-12 must supplement it in pill form. “An infant who cannot tolerate cow’s milk because of allergy and cannot be breast fed may accept a soybean formula until 3 to 4 months of age. At weaning, according to Fomon, the child should continue to receive by cup either soybean formula or soybean milk fortified with vitamin B-12.

Pages 54-56 describe in detail how to sprout soybeans at home, and how to prepare homemade soymilk and tofu (soybean curd). It is advised that fermented soybean products such as miso and tempeh not be produced at home “as the control of the fermentation process by specific micro-organisms is too difficult to achieve without specialized training and equipment.”

Soy-related recipes include: American soybean loaf (with soaked, ground soybeans, p. 76). Soybeans printanier (with cooked soybeans). Soya sesame loaf. Soya cheese balls (with cooked, seasoned soybeans). Soybean casserole (p. 77). Sprouted soybean Creole. Sprouted soybeans au gratin. Bean sprout chop suey (with tofu, p. 77). Skillet soya sprouts and beans (p. 78). Soybean stroganov (p. 78). Address: Winnipeg, Manitoba, Canada.

2188. Wang, Hwa L.; Hesseltine, C.W. 1979. Mold-modified foods. In: H.J. Pepler and D. Perlman, eds. 1979. Microbial Technology. 2nd ed. Vol. 2. Fermentation Technology. New York: Academic Press. See Vol. 1, p. 95-129. [90 ref]

• **Summary:** Volume 1. Microbial processes. Volume 2. Fermentation technology. Contents: 1. Introduction. 2. Soy sauce. 3. Miso. 4. Hamanatto. 5. Sufu [fermented tofu]. 6. Tempeh. 7. Ang-kak (red rice, used as a color agent). 8. Absence of mycotoxins in fermented foods. 9. Conclusions.

For each food is given: General description, method of preparation, composition [chemical / nutritional]. In addition for tempeh is given: Tempeh-like products, biochemistry and physiology of *Rhizopus oligosporus*, changes occurring during fermentation, nutritional value.

“Soy sauce “is known as chiang-yu on China, shoyu in Japan, kecap in Indonesia, kanjang in Korea, toyo in the

Philippines, and see-iew in Thailand. In the Western World the product is often referred to as soy sauce.” Japan is the leader worldwide in sauce production; it has the largest fermentation plant and uses the most advanced technology.

Hamanatto: Products similar to Japan’s hamanatto are known as tou-shih in China, tao-si in the Philippines, and tao-tjo [sic] in the East Indies [Indonesia]. A typical process for making hamanatto in Japan, based on information supplied by Dr. T. Kaneko of Nagoya Univ., Japan, is as follows: Wash soybeans, then soak, steam until soft, drain, and cool. Mix with parched wheat flour in the ratio of 2 parts soybeans to 1 part flour. Inoculate the soybeans with a short- or medium-stalked strain of *Aspergillus oryzae*. Incubate for 1-2 days until the beans are covered with a fragrant mycelium and have become soybean koji. Pack the soybeans in a container [wooden keg] with (for example) 2.5 kg soybean koji, 650 gm salt, 3.6 liters water and some freshly sliced gingerroot. Cover the container tightly and age under pressure for 6-12 months. Remove beans from liquid and dry them in the sun to give hamanatto. The composition of the brine may differ among manufacturers.; thus the finished hamanatto differs somewhat in taste and appearance. “Japanese hamanatto is rather soft, having a high moisture content. Chinese tou-shih has a much lower moisture content... and therefore is not so soft. Tao-tjo tends to have a sweet taste because sugar is often added to the brine.”

Shoyu in Japan: Although there are more than 4,000 shoyu makers in Japan, the largest 4-5 companies produce about 50% of the total. Address: NRRC, Peoria, Illinois.

2189. Wedhastri, Sri. 1979. Perubahan kimia pada beberapa komponen selama fermentasi miso [Chemical changes on several components during miso fermentation]. BSc Thesis (Skripsi Sarjana Muda), Fakultas Pertanian Universitas Gadjah Mada, Yogyakarta, Indonesia. 13 p. [Ind]* Address: Yogyakarta, Indonesia.

2190. *Manna Bulletin*. 1979—. Serial/periodical. Meeuwenlaan 70, 1012 JK Amsterdam, Netherlands. Editor: Sjon Welters. Illust. 21 cm. [Dut]

• **Summary:** This is a magazine about natural foods, macrobiotics, and alternative lifestyles. Soyfoods Center owns Vol. 3, No. 2 (June 1979), and Vol. 4, No. 3 (autumn 1982). In the former issue, the advisors are Adelbert Nelissen and Willem de Ridder. The editors are Hans den Hoed, Wieke Nelissen, etc. The latter issue contains one article titled “Macrobiotic Economics and the Practice of Manna” (a photo shows Adelbert Nelissen, Manna director), and another titled “Fermented products, an essential supplement to a vegetarian (*plantaardig*) diet.” Page 12 shows an ad for Witte Wonder Products (2 Riemerstraat 186, 2513 EZ Den Haag), producers of tofu and seitan. Talk with Sjon Welters. 1994. April 4. He was once the editor of

this publication. He thinks it stopped being published in about 1984-1985. Address: Amsterdam, Netherlands.

SOYINFO CENTER

2191. Leonard, Thom. 1980. Re: Thom and Dick Kluding are parting ways at Ohio Miso Co. Letter to Christian Elwell at South River Farm, Conway, Massachusetts, Jan. 6. 2 p. Typed, with signature.

• **Summary:** This letter, typewritten with almost no capital letters, begins: “Elwell friends: i want you to [be] among the first to know that dick and i are parting ways; not sure what that will mean for ohio miso, though neither want to see good miso cease to be made.” Dick may decide to make miso himself but Thom doubts it. Or Thom may rent the building from him and continue, making about 30,000 lbs/year. “OR perhaps the elwell family of south river farm, conway, massachusetts will make dick an offer he can’t refuse.” The equipment is probably worth about \$10,000. Thom will continue production this season, either until the vats are full or “you allow dick to bow out. the unassembled vats will be much easier to transport.” Address: Ohio Miso Co., Route 2, Monroeville, Ohio 44827.

2192. Earle, Stephen J. 1980. Re: Starting a new plant to manufacture real tamari in Virginia, and looking for apprentices. Letter to Richard Leviton, editor of Soykraft magazine, 158 Main St. No. 3, Greenfield, MA 01301, Jan. 7. 2 p. Typed, with signature on letterhead.

• **Summary:** Sanjirushi is a well reputed manufacturer of genuine tamari soy sauce and soybean miso. “We have a subsidiary company called San-Jirushi International located in Virginia and plan to establish a manufacturing facility for tamari in the U.S. within one or two years time.”

The company is looking for American personnel to assist in the eventual operation of the U.S. plant. “We would ask for an apprenticeship of about two years with a commitment of at least two more years to our employ after returning to the U.S. San-Jirushi would provide room, board, and a basic salary, plus return transportation to the U.S. upon completion of the training.”

Note: This is the earliest English-language document seen (July 2006) that contains the term “genuine tamari” or “genuine tamari soy sauce.” Address: Sanjirushi Jyozou Co. Ltd., 1 chome Meiseidouri, Kuwana-city, Mie-pref., Japan. Phone: (0594) 22-3333.

2193. Carr, Bob, Jr. 1980. Miso (Made in the U.S.A.). *East West Journal*. Jan. p. 68-69.

• **Summary:** The Ohio Miso Company, run by Thom Leonard and Dick Kluding, supplies over 40,000 pounds of miso a year from their 26 acre farm. Thom explained that one of the benefits of including miso in one’s diet came from the microflora it contained. He discovered that much of the natural foods miso available in this country has been heat-treated to prevent excessive fermentation and package swelling. “This pasteurization process destroys most, if not all, of the lactic acid bacteria, yeast, and enzymes present in

the unheated miso. Making our own miso, we could be sure it is not subjected to damaging processes.”

The key to making good miso lies in using good koji as the starter. The koji is usually made by soaking over 100 pounds of grain, which is then steamed in a stainless steel kettle for 1.5-2 hours in a room that smells like a heavenly bakery. Through past experience, Thom has learned to trust in the koji’s ability to communicate its needs in times of danger.

The Ohio miso is aged at room temperatures. The rhythmic changes from hot to cold give the miso a living, adaptive pulse. The 300-gallon cypress fermentation vats are made to Ohio Miso’s specifications in Buffalo, New York, shipped to the shop broken down, and assembled on site.

A large photo shows Thom Leonard ladling koji from a deep koji box into koji trays. Many koji trays are stagger-stacked behind him.

2194. **Product Name:** Natural Instant Miso-Cup (Miso Soup) [Rich Red with Seaweed].

Manufacturer’s Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer’s Address: Box 271, Union, NJ 07083.

Date of Introduction: 1980. January.

Ingredients: Soybeans, rice, sea salt, seaweed, onions, parsley.

Wt/Vol., Packaging, Price: Twelve 8-oz. servings in six flavor-tight envelopes. Each envelope weighs 18 gm.

How Stored: Shelf stable.

New Product–Documentation: Spot in Whole Foods.

1980. Jan. “Soup’s on. Rich Red Miso-Cup with Seaweed has been added to the Miso-Cup line of instant soups by Edward & Sons.” Note: The flavor of the company’s original pioneering product, launched in the fall of 1978, is now called “Original Golden Light.”

Article by Richard Leviton in *Soyfoods*. 1982. Summer. p. 34-35. Joel and Diondra Dee of Edward & Sons live in Saluda, North Carolina. Their instant Miso Cup, made of freeze-dried miso and vegetables, was launched in 1978. “They hitched their mobile home to the back of a Chevy van and toured the Northeast, reportedly for two years, handing out samples of *Miso-Cup* and collecting business cards and orders. In 1980 they added a second flavor (with seaweed) while a third is planned for late 1982.”

“*Miso-Cup* is a vegetarian, natural foods version of Lipton’s *Cup-A-Soup*. A photo shows Joel Dee. Spot in *Soyfoods*. 1982. Summer. p. 55. “Miso Soup in Seconds.” Sold in golden light and rich savory with seaweed flavors. Label, box. Reprinted in *Soyfoods Marketing*. Lafayette, CA: Soyfoods Center. “Pure Vegetarian Soup in Seconds.”

Ad in *East West*. 1988. Feb. p. 27. “Warm up with an ‘old friend’ Miso-Cup.” Address is now 1115 Lousons Rd., Union, New Jersey 07083.

Talk with Joel Dee. 1994. July 4. Miso Cup is the flagship of his product line. The miso is freeze dried. Because of the falling value of the U.S. dollar against the Japanese yen, importing Miso Cup from Japan is increasingly expensive, so Joel is now looking for a way to have this “instant savory soup or seasoning” made entirely in America.

2195. Ohio Miso Co. 1980. Brown Rice & Barley Miso (Ad). *East West Journal*. Jan. p. 69.

• **Summary:** This one-sixth page ad states: “Transforming organically grown grain and beans into quality miso since 1979. Distributor inquiries welcome.” At the bottom is the company name, address, and logo, a handsome illustration of a wooden miso vat with stones on top. Address: Route 2, Monroeville, Ohio 44847.

2196. Shurtleff, William; Aoyagi, Akiko. 1980. Miso production: The book of miso volume II. Rev. 2nd ed. Lafayette, California: New-Age Foods Study Center (Renamed Soyfoods Center in Sept. 1980). 80 p. Jan. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [82 ref]

• **Summary:** This book describes how to start and run a commercial shop making miso on any of three scales. Contents: Introduction. 1. Setting up a traditional shop: Tools and ingredients. 2. Making red miso in a traditional shop. 3. Making red miso in a semi-traditional shop. 4. Making Hacho and Mellow white miso in semi-traditional shops. 5. Making koji starter in a semi-traditional or modern shop. 6. Making light yellow miso in a modern factory. Appendix A: Resources; People and institutions connected with miso production. Bibliography. Measures, weights & equivalents. The Soyfoods Center. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2197. Ebine, Hideo. 1980. Re: Answers to questions about miso, especially spray dried and freeze-dried miso. Letter to William Shurtleff at Soyfoods Center, Feb. 19—in reply to inquiry. 2 p.

• **Summary:** Discusses: How to spray dry and to freeze dry miso; advantages and disadvantages of each. Of the roughly 200,000 tons of fresh miso made in Japan, less than 3-4% of the total is dehydrated. Thus, about 10,000 tons. Of this, an estimated 80% is freeze-fried and 20% spray dried. Dehydrated miso is used mainly in instant miso soups. The biggest maker of freeze-dried miso in Japan is Yamajirushi Miso in Nagano prefecture.

New developments with miso in Japan: Stricter sanitary codes for manufacturers. Less use of food additives. Sorbic acid-K (*Sorubin-san K*) is mostly phased out. Sulphite used to bleach soybeans is no longer used. Miso consumption in Japan is no longer increasing. More Japan-grown soybeans and rice are used in miso, which greatly improves the

quality. Address: Applied Microbiology Div., National Food Research Inst., Ministry of Agriculture, Forestry and Fisheries, Yatabe, Ibaraki-ken, Japan.

2198. Leviton, Richard; Shurtleff, William. 1980. Estimates of production and sales of tofu and other soyfoods in the USA and Canada (News release). Soycrafters Assoc. of North America, 305 Wells St., Greenfield, Massachusetts 01301. 1 p. Feb.

• **Summary:** Early statistics compiled on the U.S. soyfoods industry: 188 tofu companies, employing 680 people, used 13,500,000 lb of soybeans to produce 33,750,000 pounds of tofu that retailed for \$33,750,000.

Other soyfood manufacturers (including 27 tempeh companies and 5 miso companies), employing 225 people, used 4,500,000 lb of soybeans to produce 11,250,000 pounds of other soyfoods that retailed for \$11,250,000. The figures were compiled largely by Shurtleff, who gave Soycrafters Assoc. permission to use them. On 8 Feb. 1980 Leviton also sent a letter to Linda Madl, Soybean Bluebook, American Soybean Assoc. with a request to publish these statistics; she never did. Address: 1. Sunrise Farm, Heath Rd., Colrain, Massachusetts 01340; 2. New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2199. **Product Name:** Marusan’s Instant Miso Soup [Red, or White].

Manufacturer’s Name: Marusan, Inc. (Importer). Made in Japan.

Manufacturer’s Address: 297 Galvan Place, Box 507, Bergenfield, NJ 07621. Or 8780 E. Valley Blvd., Rosemead, CA 91770.

Date of Introduction: 1980. February.

New Product–Documentation: Ad in *Whole Foods*. 1980. Feb. p. 5. “Instant Energy in a Bowl. Marusan introduces naturally delicious Instant Miso Soups.” Ad in *Macroscope*. 1980. May. p. 2. “Marusan makes quality a natural.” Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239, 259. The product was advertised with full-page color ads in trade magazines.

2200. Marusan, Inc. 1980. Instant energy in a bowl. Marusan introduces naturally delicious instant miso soups (Ad). *Whole Foods (Berkeley, California)*. Feb. p. 5.

• **Summary:** The top half of this full-page color ad is a photo showing yellow boxes and foil packets of this instant miso soup, and two bowls of the miso soup. The text begins: “Marusan Instant Miso Soup is an ideal pick-me-up for those who want a quick and convenient meal supplement at home, on the job, or when travelling.” The products are imported by offices in New Jersey and Rosemead, California. Address: P.O. Box 507, Bergenfield, New Jersey 07621. Phone: (201) 385-5367.

2201. McGregor, Otis. 1980. Report from Ontario [Soya-Bean Growers' Marketing Board]. *Soycraft (Colrain, Massachusetts)* 1(2):10-11. Winter.

• **Summary:** "The Ontario Soya-Bean Grower's Marketing Board is a growers' board. In 1949, soybean growers in Ontario petitioned the Agriculture Department to establish a marketing plan and soybeans were declared as a regulatory commodity under the Ontario Farm Products Act. Soybean production in Ontario started in tests plots at the Ontario Agricultural College, Guelph, in 1893. By 1927, O.A.C. evaluated over 100 varieties. The Harrow Research Station began soybean plots in 1923 and later produced such varieties as Harman, Hardome, Harasoy, Harlan, Harcor, Harwood.

"Soybean acreage in Ontario competes with field corn."

Soybean production in Canada is 98% of Ontario origin. Ontario is deficient in production to meet the needs of the three crushing plants which now possess a daily production capacity of 3,550 tons. To be self-sufficient, production would require 1.2 million acres. Last crop year, the Ontario crushers purchased 13 million bushels from the U.S. which enter Canada tariff-free.

"In 1954, the Board, endeavoring to achieve greater competition in the marketplace, exported soybeans to Europe. In 1974, with the variety Harwood, the Board entered the human consumption market in Japan. Harwood, having a greater water-soluble protein, soon became distinguished in that market for tofu and miso.

"The Board negotiates on behalf of its 16,000 growers, the terms and condition of sales from the farm-gate to dealers and processors."

"Editor's Note: Soybeans that the Board markets, suitable for tofu-making, include Hodgson, Wells, Harasoy 63, Harcor, Amsoy 71, Maple Arrow, and Evans." Address: Secretary-Manager OSBGMB, Box 1199, Chatham, ONT Canada N7M 5L8, Canada.

2202. Belleme, Jan. 1980. Re: Studying miso-making with the Onozaki family in Yaita, Japan (Letter to the editor). In: Edward Esko and Wendy Esko. 1980. *Macrobiotic Cooking for Everyone*. Tokyo: Japan Publications, Inc. 272 p. See p. 138-39. Nov.

• **Summary:** "John and I arrived in Tokyo late in October. After a few days there, we visited the Sendai Miso-Shoyu (Soy Sauce) Company and then went to Yaita (about halfway between Tokyo and Sendai) to meet our miso teacher. This experience has surpassed our wildest dreams. We are living with this family in their 300-year old grass-roofed house in a very traditional part of rural Japan. This family has been on this land for over 500 years.

"The miso shop is perfect for our study. It's fairly small and very traditional—most of the work is done by hand, with the aid of just a few simple machines. The Onozakis make no compromises in terms of quality. They make a 1½ year

come [rice] miso aged in huge cedar vats held together with braided bamboo. This miso, very mellow, delicious, and unpasteurized, can be eaten every day without becoming tired of it. We work alongside the Onozakis 6½ days a week, so we have gotten a great deal of experience. For the whole month of March, Mr. Onozaki has put John in charge of making the *koji*, which is the most important and difficult part of making miso. He is to make all the decisions regarding temperature, seeding, and ventilation, so by the time we leave we should feel confident enough to do it on our own.

"The family consists of a 78-year-old grandmother, her son and his wife, and three daughters. They are a very hard-working, thoughtful, and humble family of samurai descent. The women in the area, and Mrs. Onozaki in particular, are just unbelievable. Mrs. Onozaki does the work of three people and doesn't even know it. She (and most women around here) know everything they need to know, from childcare to gardening, cooking, pickling, natural remedies (both foods and herbs), sewing, flower-arranging, and keeping their husbands happy. I have so much to learn from her. I have never seen her angry, in fact she is usually smiling and has a great sense of humor.

"Our schedule is intense. Before breakfast, I must wash our clothes in ice-cold mountain water (they have no hot running water), clean our room, and steam the rice. After a simply breakfast we begin work at 8:00. The work is hard and long and the conditions over the past 2½ months have been either extreme cold or extreme hot (cold in the shop, hot in the *koji* room). After work we have dinner, wash up, and retire to our room for a few hours of studying, writing, taking notes on what we learned during the day, etc.

"For the past 2 months the average morning temperature in the house has been 0°C (35°F.). The only heat is provided by the *kotatsu*, or the small table with a built-in heating unit."

"The old people are our favorites—we love to listen to their stories. They're incredibly strong and hard-working; many working well into their 70's and even 80's. For just one of several examples, there's a 79-year old man working here now. He's doing the plaster work on the Onozaki's new storage building. Every morning he's up at 6, eats breakfast, packs a light lunch and takes off on his 10-speed for the bitter-cold 5-mile ride to work. He works out there by himself all day, every day. I could go on and on about the old folks—there's the 70 year-old barrel-maker who came to repair 3 of Mr. Onozaki's miso vats; the 69 year-old 'traveling saleslady' who walks from house to house with a huge pack of wares on her back; the 85 year-old man who came bicycling up on his day off to buy some miso; the 78 year old grandmother we live with, etc., etc. They are such an inspiration to us.

"We are the only foreigners living for miles around and the only Americans most of these people have ever talked

to, so of course we attract a great deal of attention. Recently we have attracted the attention of the media. It all started when a local newspaper came to interview us and take our picture. This was followed by a magazine story, then Japan's leading national newspaper, the *Asahi*, came. This resulted in one live radio interview, another magazine story and two fifteen minute TV stories on 2 national networks. All of this interest took us very much by surprise. They are mostly interested in our views on American foods as opposed to traditional foods, our ideas on Japanese tradition, and the relationship between food, health, and tradition. So, as you can see, this has been a most rewarding experience..." Address: Yaita, Japan.

2203. Daizu Kyokyu Antei Kyokai. 1980. Gaiyo [About the Japan Soybean Supply Stabilization Association]. Tokyo: DKAK. 12 p. March 31. 26 cm. [Jap]

• **Summary:** Name of organization with diacritics is: Daizu Kyôkyû Antei Kyôkai. This association was founded on 26 Dec. 1974, following the U.S. soybean embargo in 1973. It has 8 member associations, including the Japanese national tofu, dried-frozen tofu, natto, miso, shoyu, oil, oil importer, and coarse grain associations. The name and address of each is given. Address: #2 Makoto Bldg. 5F, 1-4-4 Toranomon, Minato-ku, Tokyo 105, Japan. Phone: 03-591-3879.

2204. Fenner, Louise. 1980. Salt shakes some of us up. *FDA Consumer*. March. p. 3-7. Reprinted in *Sourcebook on Food and Nutrition*, 3rd ed. 1982. p. 128-31.

2205. Nikkuni, Sayuki; Itoh, Hiroshi; Takagi, Hitoshi; Suzuki, Tadano; Ebine, Hideo. 1980. [Utilization of soybean cooking drain]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 36. p. 163-70. March. [30 ref. Jap; eng]

• **Summary:** A study of how to use the water left over after cooking soybeans at miso factories—and typically run down the drain. Address: 1-2, 4-5. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3. Kojiya Sanzaemon Co., Ltd., Toyohashi-shi, Aichi-ken.

2206. Taira, Harue; Taira, Hirokadzu; Kokubu, Yoshijiro; Otake, Shigeto. 1980. [Suitability for food processing of purple specked soybean seeds caused by *Cercospora kikuchii*]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 36. p. 14-20. March. [7 ref. Jap; eng]

Address: National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

2207. Spencer, Colin. 1980. Food: Black marks. *Guardian (England)*. April 18. p. 10.

• **Summary:** Chinese stores stock most of the flavourings [and seasonings] used in restaurants and for home cooking, such as "satay, five spices powder, sesame paste, yellow bean paste, black bean paste," or hoisin sauce.

2208. Belleme, John. 1980. Making miso in Japan. *GOMF News (Oroville, California)*. April. p. 2.

• **Summary:** This is a letter sent by John Belleme, the last manager of the Oak Feed Store (a macrobiotic food shop at 3030 Grand Avenue, Coconut Grove, Florida), to Jim Kenney, current manager at Oak Feed. John and his wife, Jan, are presently in rural northern Japan studying miso making from a "traditional clan called the Onozaki." John starts: "This is our 11th day at the Onozaki koji-ten. We've settled into a daily pattern now. Our schedule is very, very intense. However, like the Onozakis, we never seem to get tired. It is obvious to us already that the energy in this fine miso originates in our garden, is transformed in the kitchen and transmuted in our bodies. We then work this energy into the miso with our hands." John then describes in detail how the miso is made by hand there. It is aged for about 18 months. After 6 months, and again after 12 months the entire contents of the vat is turned upside down, by shoveling. "Mr. Onozaki gets up at 4 a.m. after sleeping no more than five hours and I've never seen him a bit tired..." Address: Northern Japan [10 miles north of Yaita city, Tochigi prefecture].

2209. **Product Name:** Brown Rice Miso.

Manufacturer's Name: Shin-Mei-Do Miso Co.

Manufacturer's Address: 5 Wren Road, Denman Island, BC, Canada V0R 1T0. Phone: 604-335-0253.

Date of Introduction: 1980. April.

Ingredients: Brown rice koji (only a little bran removed), soybeans, sea salt, water.

Wt/Vol., Packaging, Price: 450 gm plastic tub.

New Product-Documentation: Talk with Yasuo Yoshihara. 1996. March 22. Their third miso, introduced in April 1980, was Brown Rice Miso. They put the brown rice through a rice polisher to remove a just little bit of the bran; this is necessary so the koji culture can grow. This miso is sold only to natural- and health food stores.

2210. **Product Name:** Yuba Rolls, and Stuffed Agé Pouches.

Manufacturer's Name: Soy Plant (The).

Manufacturer's Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.

Date of Introduction: 1980. April.

New Product-Documentation: Talk with Steve Fiering. 1988. June 10. These were developed by Jura McDowell, who was a good cook. The yuba rolls were about 5 inches long and a little less than 1 inch in diameter. He made the yuba (but it was never sold as such) then use it as an outer

wrapping around a filling with ground tempeh and soyusage. The Agé Pouches were made by deep-frying tofu to make pouches, then opening and stuffing them with a delicious mixture of ground tempeh, and perhaps soyusage, nuts, and sweet white miso. They were sold fresh in the deli, and they sold very well.

2211. Yoneda, Soei. 1980. Shōjin ryōri, osōzai: Take-no-Gosho fū [Zen vegetarian cookery, side dishes: Kyoto Take-no-Gosho style]. *Kurashi no Sekkei (Designs for Living)* No. 131. 196 p. April. Illust. 30 cm. (Tokyo: Chuo Koronsha). [Jap]

• **Summary:** Filled with hundreds of lovely color photos of prepared dishes, steps in preparation, Zen temples and their art treasures, gardens, and buildings. Many of the recipes include soyfoods, especially tofu, miso, shoyu, and okara. Includes a color portrait of Soei Yoneda (p. 5) and the story of her life and work (p. 165-67). Address: Abbess, Sanko-in Zen temple, Honcho 3-1-36, Koganei-shi, West Tokyo (Musashi Koganei Station).

2212. Anderson, Gene. 1980. Re: Thanks for and comments on *The Book of Miso*. Letter to William Shurtleff at Soyfoods Center, May 7. 2 p. Typed, with signature on letterhead. [1 ref]

• **Summary:** “A million thanks and blessings for *The Book of Miso*. It is the most impressive single book on food that I have ever seen in a lifetime of rooting around in this literature... I am getting more and more willing to attribute near-miraculous powers to ferments. This is partly because of one recent discovery you haven’t picked up: soybeans are about the riches common source of phytic acid, or phytate (ion), which picks up mineral nutrients (specifically active metals: iron, zinc, calcium, copper...) and renders them unavailable in the diet, and also niacin. (Hence the pellagra in corn-eating areas, since corn also has a lot, though nothing like soybeans.) Well, as you would expect, fermentation organisms handle the phytate, metabolizing it away. So soybeans by themselves are dangerous, but all the fermentation products are perfectly fine. Tofu is also OK, since the phytate goes off in the whey.” Address: Dep. of Anthropology, Univ. of California, Riverside, CA 92521.

2213. *Boston Globe*. 1980. Ask the Globe. May 7.

• **Summary:** “Q. What is Tassajara Cooking?—S.C., Haverhill.”

“A. The first Zen Buddhist Mountain Center in the United States was set up in a mountain valley in Monterey County, Calif. by the Zen Center of California [sic, San Francisco] in 1966. It has been a resort and healthy center for many years... The center welcomed visitors, and its diet, based on traditional Buddhist vegetarianism, consisted of grains, vegetables, fruits and brown rice. For guests, milk,

cheese, eggs and occasionally meat [sic], were added—miso soup and brown rice not being staples of the American diet.

“Recipes grew out of this life style and diet, and eventually a book” titled *Tassajara Cooking*, by Ed Brown, was published in Oct. 1973. Address: Massachusetts.

2214. *Food Product Development*. 1980. Oriental specialty miso expands market horizons. 14(5):26. May.

• **Summary:** About Kikkoman Instant Miso-Shiru Soy Bean Soup Mix, available in red (aka) and white (shiro).

“Following the lead of its soybean cousin tofu, miso is beginning to break away from its limited market in gourmet, ethnic, and health food stores and filter into select supermarkets.” A photo shows the front of the two packages, written in both Japanese and English.

2215. **Product Name:** Miso Pastes (Mame Miso, Mugi Miso, Kome Miso).

Manufacturer’s Name: Marusan, Inc. (Importer). The Mame Miso is Made in Japan by Marusan.

Manufacturer’s Address: 297 Galvan Place, Box 507, Bergenfield, NJ 07621. Or 8780 E. Valley Blvd., Rosemead, CA 91770. Phone: 201-385-5367.

Date of Introduction: 1980. May.

New Product—Documentation: Ad in *Macroscope* (New York, NY). 1980. May. p. 2. “Marusan makes quality a natural. Miso pastes—Prize winners in Japan, nutrition boosters for you—they’re more than soups, they’re all-purpose high-protein seasonings that are the pride of the Sanshu region where Miso production was born!” Company logo reads: “Health food all over the world.”

2216. Mori, H. 1980. Shōwa 54 nendo ni okeru shōyu, miso no kenkyū gyōseki [Review of annual achievements in shoyu and miso research]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 75:384-410. [625 ref. Jap]

• **Summary:** This important Japanese-language article, published each year in the May issue of this periodical, has two parts: (1) A review of the past year’s major discoveries and developments in the fields of miso and soy sauce in Japan. (2) A bibliography related to those discoveries and developments. Address: Noda Sangyo Kagaku Kenkyusho.

2217. Stuttman, Leonard; Stuttman, Irene. 1980. Mid-Michigan Soy to the World Day (Leaflet). East Lansing, Michigan. 1 p. Single sided. 14 x 22 cm.

• **Summary:** “Save money and eat well. Free! Everyone is welcome. Free! Featuring William Shurtleff and Akiko Aoyagi, authors of: *Book of Tofu*, *Book of Tempeh*, *Book of Miso*. * slides * good nutrition * recipes * excellent cuisine for pennies! Taste and enjoy delicious soy food samples! June 2, 1980, 7:30 p.m. at U.M.H.E. [United Ministries in Higher Education], 1118 S. Harrison Ave., W. Lansing,

Michigan (right behind the Trowbridge Spartan shopping center * park in the rear of the Church).”

Printed with black ink on pink paper. Illustrations show a soybean plant growing (upper right) and a wok on a wok stand with a spatula in it (lower left). This huge and very successful dinner was organized by Leonard and Irene Stuttmann of INARI Ltd.

Note: This is the earliest document seen (Sept. 1998) that contains the phrase “Soy to the World,” which was coined by Len and Irene Stuttmann. Talk with Len and Irene Stuttmann. 1998. Sept. 5. Documents show that Len and Irene coined this phrase for this event and later that year used it for marketing his company’s gift packs of soynuts. Address: East Lansing, Michigan.

2218. **Product Name:** [Tofu, and Miso].

Foreign Name: Tofu, Miso.

Manufacturer’s Name: Weg Der Natur.

Manufacturer’s Address: A-2380 Perchtoldsdorf, Merzger 34, Austria.

Date of Introduction: 1980. May.

New Product–Documentation: Letter from Lawrence Dreyer of Weg der Natur. 1982. April 27. “The Way of Nature (Weg der Natur), a foundation, was established in Austria with the express purpose of disseminating information about macrobiotics, food, and their relationship to our health... The foundation has, for the past two years been linked to a Natural Food Shop and has been, for this period, producing tofu and miso.

Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255. Lawrence Dreyer, proprietor. Note: This city is just southwest of Vienna.

Soyfoods Center Computerized Mailing List. 1983. Jan. 17. Owner: Lawrence Dreyer. Soyfoods Center Computerized Mailing List. 1983. June 20. The address has now changed to Helmgasse 75/2, A-8070 Graz, Austria.

Talk with Guenter Ebner of Sojarei Ebner-Prosl. 1990. May 28. This company is now the same as SoyVita and they get their tofu from SoyVita.

2219. Westbrae Natural Foods. 1980. Wholesale food catalog: Spring 1980. Emeryville, California: Westbrae. 23 p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in dark blue and dark red on a tan background. Contents: Westbrae juices. Honey butters. Unsweetened spreads. Preserves. Applesauce. Nut butters (Almond butter roasted, cashew butter roasted, cashew butter raw, cashew-peanut-date butter, raw sesame tahini, toasted sesame tahini, peanut butter crunchy, peanut butter smooth, peanut butter crunchy salted, organically grown Valencia peanut butter crunchy). Cereals (mostly granola, incl. cashew granola, maple almond granola).

Trail mixes: Bay to Breakers trail mix (with sunflower seeds and Valencia peanuts, both roasted and coated with shoyu), Chisholm trail mix (with sunflower seeds, cashew pieces, and almonds, each roasted and coated with shoyu).

Roasted nuts (bulk, 12-25 lb; * = 9 oz package also available): Tamari almonds*, Tamari cashews*, Tamari Chisholm mix*, Tamari Valencia peanuts, Tamari pepitas (pumpkin seeds), Tamari sunflower seeds*, Tamari nutroaster’s mix*, Deluxe tamari nut mix, roasted Spanish [peanuts] splits for butter stock, roasted Valencia peanuts. Packaged nuts.

Wholegrain pasta (incl. Soy linguini). Westbrae miso (imported from Japan): Red miso, brown rice miso, barley miso, Hatcho miso, soybean miso, natto miso. Cold Mountain miso (made in Los Angeles): Light yellow, mellow white, red. Sea vegetables: Kombu, hijiki, arame, wakame, nori. Atlantic Mariculture dulse.

Westbrae tamari and other Asian foods: Johsen shoyu-tamari, Traditional (true) tamari–wheat free, White tiger tofu sauce, natural nigari, agar flakes and sticks, umeboshi salt plums, rice wine vinegar, brown rice wine vinegar, ramen with soup stock.

Helpful tools (incl. Learning Tree tofu kit, wok, vegetable steamers, vegetable brush, utility knife).

Informational pamphlets: What is miso? What is tofu?

Miscellaneous (incl. falafel mix, tabouleh mix, Ak Mak crackers, sea salt, mayonnaise, black spiced olives, kosher dill pickles). Oils. Sweeteners. Bakery products. Dried fruit. Beans (incl. azuki beans, soybeans). Grains. Nuts and seeds. Non edible (drums, jars, and bottles). Glossary of manufactured products showing ingredients. Address: 4240 Hollis St., Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2220. Gevaert, Pierre. 1980. Re: Early work with tamari and miso in Europe. Letter to William Shurtleff at Soyfoods Center, June 11–in reply to inquiry. 1 p.

• **Summary:** “Your note about the misuse of the term ‘tamari’ is correct.” Lima started producing tamari in 1968. It first appeared on the market in 1961, under the name “tamari.” Production continued until 1966. “Our shoyu, called and registered as ‘tamari’ at George Ohsawa’s request, was a dark, rather thick liquid very similar to real tamari even though our product was made from 5% soybeans and 50% wheat. I think this was because we aged the product for at least 3 years, and some of it was even older because we could sell only a small part of the production. In 1967 we had such large stocks of miso and tamari that we stopped their production and cured our weak financial situation by selling off these stocks. We still remember the good Lima Tamari, and when we started to import from Japan, we always mixed at least 1/3 of Japanese tamari to approach our own quality.

“This month we will produce a good quality of miso in our French artisanal factory running on water energy.”
Address: P.V.B.A. Lima, Edgar Gevaertdreef 10, 9830 Sint-Martens-Latem, Belgium. Phone: (09) 82.41.76.

2221. *Consumer Reports*. 1980. Soybeans—the “meat” that grows on vines. 45(6):360. June.

• **Summary:** This sidebar to the article “Vegetarianism: Can you get by without meat?” gives a brief description of the soybean and its food uses. “Roasted soybeans [soynuts] can be a delicious snack food.” A small amount of soy flour added to bread or pasta dough appreciably increases those foods’ protein content. Sprouted soybeans can be eaten cooked or as a salad vegetable and are a good source of vitamin C.

“Soybeans can be made into a milk that, when fortified, can supply nutrients usually obtained from cow’s milk. That’s important for total vegetarians or those allergic to milk protein. Soy milk can be made into a cheese: soybean curd, or tofu, familiar to many as the little white cubes floating in the soup at a Chinese restaurant.” Also mentions soy sauce, miso, tempeh, and meat extenders or meat analogs.

2222. Darby, William J. 1980. Why salt? How much? *Contemporary Nutrition (General Mills, Minneapolis, Minnesota)* 5(6):1-2. June. Reprinted in *Sourcebook on Food and Nutrition*, 3rd ed. 1982. p. 132-34. [11 ref]

• **Summary:** Contents: Salt and its history. Physiological salt requirements. Appetite for salt. Estimates of salt intake. Acute salt depletion. Toxicity of excessive salt. Dietary salt and hypertension. Controversy on salt intake limitation. Summary. Address: President, The Nutrition Foundation, 489 Fifth Ave., New York, NY 10017.

2223. **Product Name:** Living Tempeh Starter [Kit Size 15 x 60 mm Petri dish, or Professional Size 15 x 100 mm Petri dish], Koji Starter for Miso (40 gm) [Light Rice, Red Rice, Barley, or Soybean Koji], Shoyu Koji Starter (60 gm), Natural Nigari (Tofu Coagulant).

Manufacturer’s Name: GEM Cultures.

Manufacturer’s Address: 30301 Sherwood Rd., Fort Bragg, CA 95437. Phone: 707-964-2922.

Date of Introduction: 1980. June.

New Product–Documentation: Spot and ad in *Soyfoods*. 1980. Summer. p. 4-5. “New Source of Tempeh Starter.” “Gordon McBride, PhD, former manager of the Living Culture Department at Ann Arbor Biological Center [Inc. in Michigan], and his wife, Betty Stechmeyer, B.S., announced the formation of GEM Cultures, which will provide high-quality tempeh starter cultures at reasonable prices.”

Letter and catalog from GEM Cultures to Tempeh producers. 1980. July. Offers a free sample of professional

size Living Tempeh Starter (a pure culture of *Rhizopus oligosporus*).

Shurtleff & Aoyagi. 1985. *History of Tempeh*. p. 55. This starter, sold live, was grown on agar in petri dishes.

Letter from Betty L. Stechmeyer of GEM Cultures. 1991. Oct. 18. These four basic products were introduced in June 1980. For a while, they tried to import commercial shoyu and miso cultures from Nihon Jozo Kogyo but it never worked, so they ended up ordering via Mitoku.

2224. Hesseltine, C.W.; Wang, H.L. 1980. The importance of traditional fermented foods. *BioScience* 30(6):402-04. June. [12 ref]

• **Summary:** Table 1 gives, for each food, the name, area or country, microorganism used, substrate, nature and uses. The following soy-related foods are included: Soy sauce (chiang-yu, shoyu, toyo, kanjang, kecap, see-ieu), miso (chiang, doenjang, soybean paste, tauco), Hamanatto (toushih, tao-si, tao-tjo [sic, tao-tjo = tauco is Indonesian-style miso]), sufu (fu-ru, fu-ju, tou-fu-ju, bean cake, Chinese cheese), tempeh, bongkrek, ontjom (oncom), natto. Address: NRRC, Peoria, Illinois.

2225. Soycrafters Assoc. of North America. 1980. Estimated soyfoods industry statistics (News release). Sunrise Farm, Heath Rd., Colrain, MA 01340. 1 p. June.

• **Summary:** Raw soybean usage, number of companies, employees, food production, wholesale value, and retail value are given for tofu, other soyfoods (mainly tempeh and miso), and total. Based in part on statistics gathered by Soyfoods Center. Address: Colrain, Massachusetts.

2226. Steinkraus, Keith H. 1980. Introduction: Food from microbes. *BioScience* 30(6):384-86. June. [12 ref]

• **Summary:** Contents: Meat analogs. The role of plants. Microbe production. Fermented foods: Tempeh, miso, soy sauce. Address: New York State Agric. Exp. Station, Geneva, NY 14456.

2227. Higa, Wm. 1980. Re: History of miso companies in Hawaii. Letter to William Shurtleff at Soyfoods Center, July 9. 1 p.

• **Summary:** An outline history, packed with interesting historical information. Kaneda Miso Factory. Honolulu. Founded 1920 by Mr. Takejiro Kanda. Presently dissolved.

Takei Miso Factory. Maui. Founded 1921 by Mr. Shuji Takei. Presently dissolved.

Ueno Miso Factory. Honolulu. Founded ?? by Mr. Yuichi Ueno. Presently dissolved.

Fukuda Miso Factory. Honolulu. Founded ?? by Mr. Fukuda. Presently dissolved.

Yamaju Miso Factory. Honolulu. Founded 1936 by Mr. George Higa. Presently dissolved. Purchased from Mr. Fukuda.

American Hawaiian Soy Co., Ltd. Honolulu. Founded 1941 by Mr. George Higa, Seiyu Inamine, Kiko Yogi, Moshu Morita—using saké brand name Maru Fuku. Presently dissolved.

Fuji Miso Factory. Honolulu. Founded about 1941. Dissolved in 1954.

Honolulu Miso Factory. Honolulu. Founded about 1942 by Mr. Shigeo Yamada. Dissolved in 1950.

Kokusui Miso Factory. Hilo, Hawaii. Founded (?); Presently dissolved.

American Hawaiian Soy Co., Ltd. Honolulu. Run by Mr. Kiko Yogi and Mr. Morita. Business active.

Hawaiian Miso & Soy Co., Ltd. Honolulu. Founded 1947. George Higa (deceased), Wm. Higa, George Higa's brother, Hisako Higa (wife), Alvin Higa. Business active. Address: Hawaiian Miso & Soy Co., Honolulu, Hawaii.

2228. American Dietetic Association. 1980. Position paper on the vegetarian approach to eating. *J. of the American Dietetic Assoc.* 77(1):61-70. July. [54 ref]

• **Summary:** This position paper is surprisingly supportive of a lacto-ovo vegetarian diet, although the ADA continues to feel that combining proteins is important. It states that “a growing body of scientific evidence supports a positive relationship between the consumption of a plant-based diet and the prevention of certain diseases,” including coronary heart disease, osteoporosis, and gastrointestinal and reproductive cancers.

Contents: Introduction. Definition of terms: Vegetarian, vegetarianism, traditional vegetarians, total vegetarians or vegans, lacto-vegetarians, semi-vegetarians or partial vegetarians, new vegetarians (since 1960, incl. yogic vegetarians, Hare Krishnas or Krishnas, Sufis, Sikhs, Macrobiotics), fruitarians, raw food eaters, individualistic vegetarians, alternative life style diet. Other terms which relate to vegetarianism: Natural foods, organic foods, unrefined foods, unprocessed foods, health foods, meat analogs (look and taste like meat), nutritional or food yeast, milk substitute (alternate) (usually based on soy. “Calcium, zinc, vitamins A, B-12, D, and K, and thiamin are all substantially lower (or missing) in these home-made products than in breast milk or other proprietary formulas”), fermented foods (incl. soy sauce, miso, tempeh—may contain some vitamin B-12), seaweeds and algae.

Vegetarianism past and present: Historical perspectives (omnivorous diets), vegetarianism in the U.S. today (it is more popular than at any time in the nation's history). Nutrition issues: Proteins, energy, carbohydrates and fats, vitamins and minerals (vitamins B-12 and D, calcium and riboflavin, iron and phytic acid, zinc and phytates). Groups with special physiologic risks: Pregnant and lactating women, infants and children (lacto-ovo- and lacto-vegetarian diets, vegan diets—the use of properly fortified soy milk is strongly recommended, vitamins and minerals),

adults with special health problems (lactose intolerance, diabetes mellitus). Implications of vegetarian diets for health promotion and prevention and treatment of disease: Coronary heart disease, cancer, obesity, dental caries, osteoporosis. Menu planning guidelines for vegetarians. Meat analogs. Summary. The President's page: Esther A. Winterfeldt, PhD, RD, on “Position papers.”

“Macrobiotics—persons who consume vegan or vegetarian diets which involve extensive non-animal food avoidances, use of unprocessed, unrefined, ‘natural’, and ‘organic’ foods; and also, in some forms, fluid restriction. Tamari, miso, and various seaweeds are used extensively and are believed to be endowed with special properties.

“Vegetarianism—past and present: The American Dietetic Association recognizes that most of mankind for much of human history has subsisted on near-vegetarian diets. The vast majority of the population of the world today continues to eat vegetarian or semi-vegetarian diets for economic, philosophical, religious, cultural, or other reasons. The matter of motivation is crucial, because it affects the diet adopted, adherence to it, and other characteristics of life style.”

“Nutrition issues: The American Dietetic Association affirms that a well planned diet, consisting of a variety of largely unrefined plant foods supplemented with some milk and eggs (lacto-ovo vegetarian diet) meets all known nutrient needs. Furthermore, a total plant dietary can be made adequate by careful planning, giving proper attention to specific nutrients which may be in a less available form or in lower concentration or absent in plant foods.”

Note: This is the earliest English-language document seen (June 2002) that uses the term “plant-based diet” to refer to one that contains no animal products.

2229. Leviton, Richard. 1980. Nurturing the craft of miso making: The Ohio Miso Company. The discipline of miso making takes root in America in the country's first Caucasian shop. *Soyfoods* 1(3):26-31, 63-68. Summer. [6 ref]

• **Summary:** The best article seen to date on this new miso company, which opened on 13 March 1979. Leviton gives a detailed, step by step, description of their process for making koji and miso by hand. Photos show: (1) A wooden paddle. (2) Thom Leonard examining steamed short-grain brown rice in the stainless steel steamer. (3) After the koji trays are scrubbed, the koji crib is lined with thick cloth. (4) After the cooked rice is inoculated and sifted, Thom ladles it into the crib. (5) After the rice koji has incubated for a day, Thom stirs it with a wooden paddle in its crib. (6) Thom ladles the half-finished koji into koji trays. (7) Thom stacks the filled koji trays in the koji incubation room, where the koji will finish. (8) Thom, wearing a mouth mask, inspects the finished koji. (9) Cooked soybeans are ground by a Hobart meat grinder into spaghetti-like strands, which are

run into plastic buckets. (10) Thom mixes koji, salt, and liquid in a mixing trough. (11) He empties the mixed miso ingredients into 350 gallon wooden vats to ferment and age for a year or two. Thom buys the unassembled 300-gallon cedar vats, which are designed and cut to order, from the Arrow Tank Company (16 Barret Street, Buffalo, New York, 14125) for approximately \$500 each. Thom has already made over 30,000 lb of miso, but he is unable to enjoy it. "I have such a *yang* constitution," he says, "that I can't handle much salt."

Dick Kluding operates the Good Earth Natural Foods store in nearby Norwalk, Ohio. He and Thom met for the first time early in September 1978, and by the last week in October they were building the miso shop on Dick's land.

Editor's note at end of article: "Since this article was written, Thom Leonard left Monroeville for Conway, Massachusetts. He and Christian Elwell will re-establish the Ohio Miso Company on Mr. Elwell's farm in Conway. Richard Kluding, who assumed full-time miso-making responsibilities following Thom's departure, will complete the miso season and then turn the business over—literally... everything except the building, to Mr. Elwell, new principal owner, and Thom Leonard, miso maker and consultant. Elwell and Leonard expect to have their new miso shop completed by autumn [1980] and begin miso production again in early winter." Address: Colrain, Massachusetts.

2230. Mandoe, Bonnie. 1980. Make way for miso. *Bestways*. July. p. 89, 91.

2231. New-Age Foods. 1980. Calling all soycrafters... Start your own soyfoods business. Tofu, soymilk, tempeh, miso. Here are the books that show you how! (Ad). *Soyfoods* 1(3):45. Summer. Address: New-Age Foods, P.O. Box 234, Lafayette, California.

2232. Shurtleff, William; Aoyagi, Akiko. 1980. Das Miso-Buch: Nahrung fuer alle Band 1 [The book of miso: Food for mankind. Vol. 1]. Soyen, West Germany: Ahorn Verlag. 266 p. July. Illust. by Akiko Aoyagi Shurtleff. Index. 23 cm. A co-production of Ost-West Bund e.V. and Ahorn Verlag. Translated from English by Rainer Bosch and Gudrun Klein. [43 ref. Ger]

• **Summary:** Contents: What is miso? Foreword. Acknowledgments. Part I. Miso: Nutritional value and varieties. 1. Soybeans, protein and the world food crisis. 2. Miso as a food. 3. The miracle of fermentation. 4. The varieties of miso.

Part II. Cooking with Miso (400 recipes). 5. Getting started—principles, kitchen utensils, preparation. 6. Recipes from East and West. Part III. The Preparation of Miso.

Part III. The production of miso. 7. Making miso at home and in communities. 8. Japanese farmhouse miso. 9.

The traditional miso shop. 10. The modern miso factory. Appendixes: A. The history of chiang, miso, and shoyu, and their historical significance. B. The chemistry and microbiology of miso fermentation. C. Miso additives. D. Miso with seafoods, chicken, and meat. E. When you want to study miso in Japan. F. People and institutions worldwide connected with miso. G. Natural food stores in German-speaking countries. Bibliography. Glossary. About the authors and their work (autobiographical).

Published in both hardcover and paperback editions. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

2233. *Soyfoods*. 1980. Soyfoods to the American taste: An interview with Drs. Clifford Hesseltine and Hwa L. Wang. 1(3):58-62. Summer. [1 ref] Address: NRRC, Peoria, Illinois.

2234. **Product Name:** Miso-Garlic Dressing. **Manufacturer's Name:** Soyplant Co-op Inc. (The). **Manufacturer's Address:** 711 Airport Blvd., Suite 1, Ann Arbor, MI 48104. Phone: 313-663-8638.

Date of Introduction: 1980. July.

Ingredients: A rich, smooth blend of miso (fermented soybeans and rice), safflower, shoyu sauce, garlic, onion, cider vinegar, water, lemon oil.

Wt/Vol., Packaging, Price: 16 oz.

How Stored: Refrigerated.

New Product—Documentation: Label in Soy Plant scrapbook from about 1980. 2½ by 2½ inches. Black on white. 16 oz. Sold in a plastic tub.

2235. Switzer, Larry. 1980. Spirulina: The whole food revolution. Proteus Corp., 2000 Center St., Suite 1221, Berkeley, CA 94704. 94 p. Illust. by Akiko Aoyagi Shurtleff. 22 cm. [78* ref]

• **Summary:** Contents: Acknowledgements. Preface. Earthrise 1969. 1. Introduction to microalgae. 2. History of spirulina. 3. Cultivating around the world. 4. Farming and processing. 5. Nutritional value. 6. How to use spirulina. 7. Recipes. 8. Spirulina as a world food. 9. Global impact of microalgae. New earthrise 2001. References.

Soy-related recipes include: Aquamole dip or dressing (with tofu and tamari soy sauce, p. 64). Pro-miso soup (p. 65). Pro-miso canape (p. 69).

The Preface notes that Larry Switzer, who used to be a filmmaker, first learned about spirulina in the winter of 1974 from a small article in *Solar Energy Digest*. Earlier that year he had formed a partnership with Dr. William J. Oswald, a University of California prof. of public health and engineering, and a recognized world expert on the mass cultivation of microalgae. Proteus is being financed by a far-sighted philanthropist, David Donneley, a wonderful guy. Proteus was incorporated in California in late 1975. In

1975-76 extensive laboratory and pilot scale experiments were conducted in Concord, California. Robert Henrickson and Dr. Alan Jassby joined Proteus in 1976. Small ponds were constructed in the Imperial Valley of Southern California, and by 1979 larger farms were in operation there. In 1978 Proteus began importing spirulina from Sosa Texcoco, S.A., of Mexico, the major world producer. Address: Founder and President, Proteus Corp.

2236. Yoshihara, Lulu. 1980. Shinmei-do Miso Company. *Soyfoods* 1(3):10. Summer.

• **Summary:** In this letter, the author tells of the founding, activities, products, and production process of this small miso company. Her husband and co-worker, Yoshi, is Japanese. They have the capacity to make 80 gallons/week of miso but are operating below capacity for lack of space and firewood. Their main miso variety is rice (kome) miso. Barley miso will be ready in early 1981 and brown rice miso will be ready in the fall of 1981. "Our markets are the Japanese food coops and natural food stores. We started in spring 1979 and have just sold our first miso. Our first experimental batch was made in February 1977." Address: Shinmei-do Miso Co., Wren Rd., Denman Island, BC, Canada, V0R 1T0.

2237. *Journal Star (Peoria, Illinois)*. 1980. Tempeh, tofu, miso may replace hot dog. Aug. 11.

• **Summary:** At a recent national conference held at the University of Illinois, William Shurtleff discussed the potential and possible future of these three foods. His remarks were supported by those of Dr. Clifford Hesseltine, a microbiologist at the USDA's research laboratory in Peoria, Illinois. Hesseltine added that the use of tempeh is growing "at a phenomenal rate."

2238. Huey, Pamela J. 1980. Conference sees future for tofu, tempeh, miso. *Hartford Courant (Connecticut)*. Aug. 13. p. 1A. *

2239. Westbrae Natural Foods. 1980. Distributor food catalog: Summer 1980. Emeryville, California: Westbrae. 12 p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in dark blue and dark red on a tan background. Address: 4240 Hollis St., Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2240. Ferretti, Fred. 1980. Brown rice and whole grain at Amherst. *New York Times*. Sept. 3. p. C1.

2241. Sass, Lorna J. 1980. A couple on a tofu mission in the West. *New York Times*. Sept. 24. p. C3. Reprinted in the San Francisco Chronicle. Nov. 12. p. 22.

• **Summary:** About William Shurtleff and Akiko Aoyagi, authors of *The Book of Tofu*, with a photo of each person. In 1975 they founded the New-Age Foods Study Center, with offices in Tokyo and Lafayette. Their center has published three volumes: *Tofu and Soymilk Production* (\$17.95), *Tempeh Production* (\$15.95), and *Miso Production* (\$17.95). These books are directed at people interested in manufacturing "soy foods." In 1978 they helped to found the Soy Crafters Association of North America. Last July the association held its third annual conference. Lorna Sass is also the "general editor of the forthcoming reprint series of significant historical cook books." Address: Culinary historian, New York.

2242. Belleme, John. 1980. Re: Building a miso factory in North Carolina. Pasteurizing miso and selling dry koji. Letter to William Shurtleff at Soyfoods Center, Sept. 29. 2 p. Typed, without signature or letterhead.

• **Summary:** "Our miso project is going quite well. This summer I located the remaining equipment in New Jersey and ordered our vats from Arrow Tank Co. in Buffalo [New York]. The owner is stone deaf; it was an interesting afternoon.

"We are now leveling the site for the miso factory. It's going to be one of those metal Butler buildings, about 4,000-sq-feet. Besides the miso project, we are working on other projects such as building a structure for summer camps, shiitake mushroom farming, and preparing our land for growing soybeans. There's just Jan. and I, so our hands are full."

While in Japan, John noticed that Mr. Onozaki's wife and most older traditional people never boil their miso soup. "People go out of their way to buy Mr. Onozaki's unpasteurized miso. These people believe that there is a very beneficial bacteria in miso which is killed by heat. More specifically, old people in rural Japan strongly feel that if you smoke, it is best to drink unpasteurized miso every day.

"On the other hand, the people at Sendai [Miso Shoyu Co.] and Michio [Kushi] believe this is nonsense. I have great faith in the wisdom of tradition. People that live close to the earth do not waste their time if not for good reason. Also, the people at Sendai pasteurize all exported miso, much of which is sold by Erewhon." John asks Shurtleff's opinion on these matters.

John would like to sell some of the koji he makes as dry koji. He asks how to dry it and the effect of drying on the enzyme activity of the koji. "Finally, do you know anything about the nutritional benefits of koji in making amasake or pickles?"

Talk with John Belleme. 1980. Oct. 3. The rebuilt cypress vats are 7 feet tall and 5 feet in diameter. Each costs \$1,000 with stainless steel hoops. John is deeply interested

in macrobiotics. Address: Route 3, Box 541, Rutherfordton, North Carolina. Phone: (704) 287-2940.

2243. Aihara, Cornelia. 1980. Cornelian's corner: Tamari. *GOMF News (Oroville, California)*. Sept. p. 3-4.

• **Summary:** George Ohsawa called his soy sauce 'Ohsawa Soy Sauce,' when he started teaching macrobiotics in Europe around 1957. He made a Frenchman the sole distributing agent for macrobiotic foods imported from Japan. This agent later began to import cheap, poor quality soy sauce from Japan under the name 'Ohsawa Soy Sauce.' As a result, Ohsawa had to import traditional natural soy sauce from Japan once again. He could no longer use the name 'Ohsawa Soy Sauce' because the other importer had copyrighted the name. Ohsawa therefore called the traditional natural soy sauce imported from Japan 'tamari'—even though, in the strict sense of the word, it was not tamari.

"Tamari sauce was a historical precursor to soy sauce and is available today in very limited quantities. It is a by-product of a particular type of miso that is made with only salt and soybeans (with a bit of koji enzyme). Its flavor and taste-enhancing qualities are not as distinctive as natural traditional soy sauce.

"*The Calendar Cookbook* was published last year but was written in 1972 when I was using natural soy sauce; in this as well as in *Macrobiotic Child Care* (1979) I called it 'tamari.' This was a mistake. I meant natural soy sauce, not tamari. Really, tamari means the liquid that comes to the bottom of the barrel under stone pressure when making miso... Making 100 pounds of miso, only one or two cups of tamari come. But I don't like to take this tamari off—I mix it up with the miso. If you remove it, the miso is less sweet... I never used tamari in my cooking.

"Last summer in Japan, Mr. Murata of Ohsawa Japan introduced us to the Yamaki factory. They are using good quality salt, not commercial government salt." Address: GOMF, 1544 Oak St., Oroville, California 95965.

2244. Hesseltine, C.W.; Wang, Hwa L. 1980. Fermented foods. *Food Trade Review* 50(9):473-79. Sept.; 50(10):543-45. Oct. [4 ref]

• **Summary:** Discusses shoyu, tempeh, wheat soya tempeh, sufu, natto, koji, miso, ragi, and soy yogurt. Address: USDA NRRC, Peoria, Illinois.

2245. Stechmeyer, Betty. 1980. Re: Detailed comments on and suggestions for corrections in *The Book of Miso*, by Shurtleff and Aoyagi. Letter to William Shurtleff at Soyfoods Center, Oct. 6. 2 p. Typed, with signature. [2 ref]

• **Summary:** Betty is a trained microbiologist. Almost all of her excellent suggestions were followed in the revised edition of *The Book of Miso*. Address: GEM Cultures,

30301 Sherwood Rd., Fort Bragg, California 95437. Phone: 707-964-2922.

2246. Hodgson, Moira. 1980. Restaurants: Sushi and more and new Italian. *New York Times*. Oct. 10. p. C22.

• **Summary:** A review of Sushiko, a small Japanese restaurant in New York City between Broadway and Eighth Avenue, which has a "sushi bar." Inexpensive side orders include: "Natto, mustard-colored fermented soybeans, gooey and unusual, were seasoned with mustard, chopped scallions and soy sauce, and had an extraordinary and subtle flavor, tasting slightly smoky, resembling food that has been cooked over charcoal. Bean curd came in large moist squares in a bowl of water, accompanied by a sauce of dried tuna [sic, bonito] flakes and scallions mixed with soy."

Paper-thin yakinori (toasted nori) could be used as a wrap for natto. Spectacular nasu shigiyaki was an eggplant sliced in half, covered with miso sauce, and grilled. Misoshiru [miso soup] is a rich brown soybean soup. Tofu is added to a tossed American-style salad.

2247. Ostmann, Barbara Gibbs. 1980. Shurtleff's sermon: Soy to the world. *Post-Dispatch (St. Louis, Missouri)*. Oct. 22. p. 1B. Food section.

• **Summary:** "The guru of tofu made a brief stop in St. Louis recently, to address a full house—composed of soybean farmers, vegetarians, Oriental food enthusiasts and just plain curious cooks—about the wonders of the soybean and its many forms, in particular tofu or soybean curd." A color photo shows Shurtleff and Aoyagi holding tofu and miso dishes that they served to the audience. Address: Post-Dispatch Food Editor.

2248. Westbrae Natural Foods. 1980. Distributor price list with price corrections: November 1. Emeryville, California: Westbrae. 7 p. 22 by 28 cm.

• **Summary:** Black on white (photocopied). Address: 4240 Hollis St., Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2249. Westbrae Natural Foods. 1980. Overseas distributor price list with price corrections: November 1. Emeryville, California: Westbrae. 7 p. 22 by 28 cm.

• **Summary:** Black on white (photocopied). The prices are F.O.B. Emeryville. Address: 4240 Hollis St., Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2250. Westbrae Natural Foods. 1980. Distributor pricelist delivered to New York City Metro Area; Boston, MA; Springfield, MA; Albany, NY, with price corrections:

November 1. Emeryville, California: Westbrae. 7 p. 22 by 28 cm.

• **Summary:** Black on white (photocopied). Address: 4240 Hollis St., Emeryville, California 94608; 4841 Eastern Ave., City of Bell, CA 90201 (10 miles southeast of Los Angeles). Phone: (415) 658-7518 (orders).

2251. Business Trend Analysts, Inc. 1980. The health and natural food market: An analysis of current performance & future prospects. Dix Hills, New York. viii + 234 p. Oct. No index. 28 cm. Spiral bound. Project director: Amadee Bender. [9 ref]

• **Summary:** Section 12 (p. 85-113) of this study is titled "Soyfoods & Other Soy Products." It consists largely of statistics compiled by the Soyfoods Center and Soycrafters Association of North America. On pages 95-110 is published, without permission, complete lists of all U.S. tofu shops, tempeh shops, and miso and koji manufacturers from books copyrighted by Shurtleff and Aoyagi. Acknowledgement of the source of all this information is given only at the bottom of tables, on the last page of the plagiarized list of manufacturers, and in Appendix 6, page 234. No permission was obtained from the Soyfoods Center to use any of this material.

On page 113 is a table on U.S. lecithin production from 1976 to 1979, based partly on U.S. Census figures. Production averaged about 60 million lb/year, worth \$19 to \$23 million. The estimated percentage consumed for health purposes rose from a estimated 2.5% worth \$500,000 in 1976 to an estimated 5.5% worth \$1.3 million in 1979.

Page 232 lists the largest health food wholesalers in the USA: Balanced Foods Inc. (Ridgefield, New Jersey), Landstrom Distributing (San Francisco, California), Erewhon, Inc. (Cambridge, Massachusetts), Health Foods Inc. (Des Plaines, Illinois), Kahan & Lessin Co. (Compton, California), Nature's Best (Torrance, California), and Tree of Life Inc. (St. Augustine, Florida). Address: Dix Hills, New York.

2252. *Kushi Institute Newsletter (Brookline, Massachusetts)*. 1980. Foods of the ancient world: Miso. 2(1):1-3. Oct.

• **Summary:** States that hacho miso is generally considered the top quality. The Kushi Institute was established in 1978 to provide the education necessary to achieve the common goal of a healthy and peaceful world.

2253. Mochizuki, Tsutomu. 1980. Re: Bacteria found in the greatest numbers in traditional Japanese miso. Letter to William Shurtleff at Soyfoods Center, Oct.—in reply to inquiry. 1 p.

• **Summary:** The most abundant bacterium in traditional Japanese miso is *Pediococcus halophilus*, a lactic acid bacterium. No other prevalent species are found. Note: Dr.

Mochizuki, an expert on miso, retired in 1982. Address: Shinshu-Miso Research Inst., Nagano city, Japan.

2254. *Nutrition News (Pomona, California)*. 1980. Soyfoods from the magic bean. 3(10):1-4.

• **Summary:** Discusses the nutritional value of soybeans, meat analogs, tofu, tempeh, miso, soy sauce, and TVP.

2255. Wang, H.L.; Swain, E.W.; Hesseltine, C.W. 1980. Phytase of molds used in Oriental food fermentation. *J. of Food Science* 45(5):1262-66. Sept/Oct. [26 ref]

• **Summary:** "Except for *Mucor dispersus* NRRL 3103 and *Actinomyces elegans* NRRL 3104, all the other molds tested produced both extra- and intracellular phytase." Molds were tested that make the following fermented foods: Sufu, tempeh, Lao-chao, soy sauce, and miso. Address: NRRC, Peoria, Illinois.

2256. Oka, H.; Itoga, K.; Mochizuki, T. Assignors to Nagano Miso Company. 1980. Muen kôtanpaku shokuhin genryô no seizô-hô [Salt-free miso]. *Japanese Patent* 55-44587. Nov. 13. 12 p. [12 ref. Jap]

• **Summary:** The patent for the world's first salt-free miso. Note: A similar patent was granted on 28 May 1981. Japanese Patent 1,048,853. Address: Chuo 5-6-2, Ueda-shi, Japan.

2257. Andoh, Elizabeth. 1980. At home with Japanese cooking. New York, NY: Alfred A. Knopf. 254 p. Illust. by Michiko Fujiwara. Index. 25 x 22 cm.

• **Summary:** A beautiful, intimate and very useful book, approachable and suffused with a unique tranquility and charm. The illustrations (line drawings) are exquisite.

Contents: Acknowledgments. Introduction. A note about the romanization of the Japanese language (Hepburn system). In the Japanese kitchen: Techniques and equipment—Grilling, broiling, steaming, braising and simmering, frying, dry roasting, grinding, crushing and mixing, using knives (four types, and how to hold and use them), skewering, straining and mashing, grating, pots and pans, miscellaneous equipment (chopsticks, rice paddle, rice tub, flat fan, bamboo mats, bamboo trays, metal mold, etc.). Meals and menu planning. The recipes: Soups, rice, noodles, braised and simmered foods, grilled and skillet-grilled foods, deep-fried foods, steamed foods, mixed, sauced and tossed foods, pickles, sweet things and beverages. In the Japanese kitchen: Foodstuffs. Suggestions for ordering Japanese foodstuffs, A glossary of Japanese terms.

The very helpful glossary includes (soy related): Abura agé: fried bean curd [tofu]. Aka miso: dark bean paste [miso]. Daizu: dried soybeans. Eda mamé: fresh soybeans. Kikkoman: brand name of soy sauce. Kinako: soy flour [roasted]. Marukomé miso: brand name of medium

fermented bean paste. Miso: fermented bean paste. Miso shiru: soup thickened with fermented bean paste. Natto: fermented sticky soy beans. Okara: by-product of fresh tofu-making. Saikyô miso: light bean paste, a brand and regional name. Sendai miso: dark bean paste, a brand and a regional name. Shinshû Ichi miso: medium bean paste, a brand and regional name. Shiro miso: white (or light) bean paste. Shôyu: soy sauce. Teri yaki: glaze grilling. Tôfu: bean curd. Usu kuchi shôyu: thin or light soy sauce. Yuba: thin brittle sheets of soy milk (by-product of tôfu-making).

Also includes: Each of the basic sea vegetables / sea greens used for food in Japan (ao nori, hijiki, konbu, nori, wakamé, etc.). Umé-boshi: pickled plums.

The book contains excellent recipes and descriptions (see the index) using bean curd [tofu] (7 recipes), eda mamé (1), fried bean curd (*abura agé*) (5), grilled bean curd (*yaki-dôfu*) (3), miso (17), and soybeans, dried (1); natto is not mentioned.

Elizabeth concludes the Introduction by explaining: "What I've tried to write here is the very book I wish I'd had with me when I started out fourteen years ago."

About the author (last page and with portrait photo on inside rear dust jacket): Elizabeth, who was raised in New York and graduated from the University of Michigan, traveled to Japan in 1966 to study Japanese, lived with the Andoh family on the island of Shikoku, and married into that family two years later. Shortly after her marriage, she enrolled in a class at the Yanagihara School of Classical Japanese Cooking, where she studied for six years. She has a daughter, Rena, to whom this book is dedicated.

The copyright page states: "Many of the recipes which appear here were originally printed in slightly different form in *Gourmet* magazine, 1975, as part of a 6-part series entitled 'The Seasonal Japanese Kitchen,' by Elizabeth Andoh." Address: Tokyo, Japan.

2258. ASEAN Sub-Committee on Protein. ed. 1980. Report on the Second ASEAN Workshop on Solid Substrate Fermentation. Kuala Lumpur, Malaysia. 415 p. Held 27-29 Nov. 1980 at Kuala Lumpur, Malaysia. 29 cm. [100+ ref]

• **Summary:** This the 10th workshop organized by the ASEAN Sub-Committee on Protein and the second workshop in the series on solid substrate fermentation. The first was held in May 1978 at Bandung, Indonesia. The protein project, which has a newsletter and is directed toward the development of small industries, has been active since 1974. Members of the Main Organising Committee include Prof. Ho Coy Choke (Chairman), Dr. Ahmad Zaharudin Idrus, and Ms. Yeoh Quee Lan. At the back is a directory of participants (p. 411-15). Address: Malaysia.

2259. Esko, Edward; Esko, Wendy. 1980. Macrobiotic cooking for everyone. Tokyo: Japan Publications, Inc. 272

p. Nov. Foreword by William Tara, Director, Community Health Foundation, London, England. 26 cm. [50 ref]

• **Summary:** The authors studied in Japan (mostly Kyoto), from Sept. 1978 to May 1979, at which time they returned to Boston. In the summer of 1979 "more than 100 delegates from various regional centers throughout the United States and Canada met in Boston for the first North American Congress of Macrobiotics." Part I of this book discusses the theory of macrobiotics and Part II gives recipes. Unfortunately, the book has no index, and the bibliography gives no years of publication. There are chapters on: Seitan, fu, and noodles (incl. soba), and Sea vegetables.

Soy-related recipes include: Brown rice and soybeans (p. 90). Miso soft rice (p. 96). Somen with deep-fried tofu (p. 118). Kenchin soup (with deep-fried tofu cubes and tamari, p. 130). Okara soup (p. 132). Miso soups (p. 137-143; 12 recipes are given plus a long letter from Jan Belleme, about how she and her husband, John, who arrived in Japan in late October 1979, are now living with the Onozaki family and studying miso-making there—p. 138-39). Sauteed cucumbers and miso (p. 154). Boiled cabbage, sweet corn, and tofu (p. 155). Udon-vegetable bane (with deep-fried tofu, p. 159). Steamed kale and tofu (p. 161). How to make sprouts (incl. soybean sprouts, p. 177).

Chapter 5 is titled "Bean dishes, including tofu and natto." It states (p. 178-79, without citing the source) that "In China and Japan there is a proverb, 'A man who eats too many beans becomes a fool.' ... Lima beans and soybeans are both very yin, and require thorough chewing. They should be eaten only on occasion and in small quantities... Kombu can be placed on the bottom of the pot when cooking chickpeas, soybeans, lima beans or kidney, pinto and navy beans. I have found that kombu definitely improves their flavor, and because of its high mineral content, creates a very balanced dish." To pressure cook soybeans so that they do not clog the steam escape valve, first boil them for 30 minutes. Skim the foam off the top as it rises, and when no more foam rises to the surface you may place them in a pressure cooker and continue cooking until done. Recipes include: Japanese black beans (black soybeans). Soybeans with kombu and burdock. Soybeans with lotus root and salmon. Following a long discussion of tofu, Homemade tofu. Tofu with scallions. Tofu with bonito flake broth. Baked tofu with miso/lemon sauce. Broiled tofu. Tofu loaf. Steamed tofu rolls. Deep-fried tofu cakes. Aburage (Age or deep-fried tofu). Stuffed age pouches. Okara. Okara croquettes. Sautéed natto. Natto rice or noodles. Natto tempura. Dried natto.

Hijiki with soybeans (p. 193). Hijiki and deep-fried tofu (p. 194). Tempuraed tofu-nori rolls (p. 198). Koi-koku (Carp miso soup, p. 220). Daikon and tamari. Scallion miso. Green peppers and miso (p. 224). Miso condiments (p. 226). Tamari. Moromi (p. 227). Rutabaga-tamari pickles (p. 233). Quick miso pickles (p. 234). Tofu tamari dressing (p. 236).

Tofu-sesame dressing. Shiro-miso-tofu dressing. Miso dressing (p. 237). Tamari-lemon dressing. Tamari-rice vinegar dressing. Miso-tahini dressing (p. 238). Miso-rice vinegar dressing. Miso walnut dressing. Miso-tahini spread. Sesame miso spread. Miso-nut spread (p. 239). Lentil-miso spread. Lima bean miso spread (p. 240). Tofu dip (p. 243). Amazake (p. 247-48). Clear broth soup with tofu & scallions (p. 253). The glossary lists many soy products plus azuki beans, sea vegetables (many types), gluten, koji, kuzu, mochi, natto, nigari, okara, seitan, tekka, tempeh, umeboshi, unohana (okara), and yuba.

Macrobiotic periodicals include: *East West Journal* (Brookline, Massachusetts). *Kushi Institute Study Guide and Kushi Inst. Newsletter* (Brookline, MA). *The Order of the Universe* (East West Foundation, Brookline, MA). *The Macrobiotic Review* (East West Foundation, Baltimore, Maryland). *Spiral* (Community Health Foundation, London). *Le Compas* (Paris). Note: The date each periodical began publication is not given.

The lengthy section on seitan (p. 110-13) gives a detailed recipe for making seitan at home using the short method and 3½ lb hard spring wheat flour or hard red winter wheat flour. The broth is made with kombu and tamari. Seitan recipes include: Seitan stew. Seitan fried rice. Stuffed mushrooms (with sauce). Stuffed squash or Hokkaido pumpkin. Address: Boston, Massachusetts.

2260. Flegel, T.W.; Bhumiratana, A. 1980. Studies on *Aspergillus flavus* var. *columnaris* in soy sauce koji. In: ASEAN Sub-Committee on Protein, ed. 1980. Report on the Second ASEAN Workshop on Solid Substrate Fermentation. Kuala Lumpur, Malaysia. 415 p. See p. 106-20. [6 ref]

• **Summary:** Reviews attempts to improve the quality of soy sauce and tao chieo [miso] in Thailand by the introduction of *Aspergillus flavus* var. *columnaris* inoculum (found to produce the most protease) for the koji stage of production. Two major proteases were isolated and characterized. A low-cost, easy, and reliable method is described for the production of koji inoculum by factory personnel using plastic bag incubators.

Good quality soy sauce should have a high soluble nitrogen and a high reducing sugar content in the final product. To obtain this, one must optimize production of protease and amylase during the koji stage. Factory owners all prefer green koji (made in cool weather, dominated by *Aspergillus* species) to black koji (resulting from hot weather and dominated by Zygomycetous molds such as *Rhizopus*, *Syncephal*, *Mucor*, *Absidia*, etc.). In the moromi stage, factory owners say that the total salt content of the moromi and final soy sauce should not fall below 18% (w/v = weight to volume) lest the soy sauce spoil, nor exceed 22% (w/v) lest it be too salty. Koji usually takes 5-7 days to make. The optimum growth temperature for the koji mold, determined by radial growth on agar, was found to be 30°C.

When tao chieo was made by the new method, white crystals of pure tyrosine appeared' since they were not harmful, they were accepted by factory owners. An increase in soluble nitrogen leads to a darkening of color caused by the complexing of glucose with amino acids such as lysine. Address: Microbiology Dep., Faculty of Science, Mahidol Univ., Rama VI Road, Bangkok, Thailand.

2261. Karim, Mohamad Ismail Abdul. 1980. The role of microorganisms in food fermentation with special reference to Malaysian fermented foods. In: ASEAN Sub-Committee on Protein, ed. 1980. Report on the Second ASEAN Workshop on Solid Substrate Fermentation. Kuala Lumpur, Malaysia. 415 p. See p. 31-64. [27 ref. Eng]

• **Summary:** Traditional Malaysian fermented soyfoods include kicap (soy sauce), tempeh, and taucu (Malaysian miso). Fermentation is considered by most small-scale processors as more of an art than a science. The secrets of the processes have been passed down in the family from one generation to another. Much of the flavor of fermented soy products comes from fatty acids (glutamic acid, propionic acid, butyric acid, etc.), ammonia, and amines.

In Malaysia, the manufacture of soy sauce is normally done by small establishments using traditional methods. Boiled soybeans are cooled then mixed with 40-50% by weight of wheat flour. The mixture is spread onto large shallow bamboo trays (90 cm diameter and 5 cm deep) to a depth of 5 cm. The trays, which are used repeatedly, harbor many useful microorganisms. The trays are then stacked in tiers 15-30 cm apart on wooden racks for 7-10 days. The mixture is broken up and turned every 2 days to allow aeration. At the end of the fermentation, the white mycelium-impregnated mass, with its spores turning yellow and greenish yellow, is filled into earthenware jars (190 liters capacity) and covered with brine solution of 15-20% concentration. The jars are exposed to the sun and covered with lids at night or whenever it rains. The brine mixture is allowed to ferment for 2 to 24 months depending on the quality of the sauce needed. At the end of the fermentation period, the resulting dark liquid (soy sauce) is removed by siphoning or straining through a cheese cloth or suitable strainer. The sauce is then bottled. Sometimes sugar or benzoic acid (a preservative) is added to the sauce before bottling. A sauce could also be cooked and thickened with caramel (up to 80%) and bottled as thick sauce for sale. The production of thin sauce requires a short fermentation (1½-6 months) whereas thick sauce requires a longer fermentation (6-24 months). The extraction process could be repeated 4 to 6 times by topping the remaining mash with brine solution (10-14%) after each extraction.

Soybean paste or taucu is made in essentially the same way as soy sauce except that broken soybeans are used and the liquid is not removed. The final product is reddish brown. Most Malaysian taucu is not sun-dried, but is packed

into wide-mouth jars in its moist paste form. Address: Jakatan Sains dan Teknologi Makanan, Universiti Pertanian Malaysia, Serdang, Selangor, Malaysia.

2262. *Mother Earth News*. 1980. Has-bean souper snack. Nov. p. 138. *

2263. Soriano, M.R.; Navarro, N.S.; Parel, S.O. 1980. Solid substrate food fermentation technology in the Philippines. In: ASEAN Sub-Committee on Protein, ed. 1980. Report on the Second ASEAN Workshop on Solid Substrate Fermentation. Kuala Lumpur, Malaysia. 415 p. See p. 198-223. 29 cm. [45 ref]

• **Summary:** This paper gives a brief history of the development of food fermentation technology in the Philippines, including fermented soy products such as toyo (soy sauce), tausi (or tao-si [soy nuggets], called “taousih” by the Chinese and “tao tjo” [sic] by the East Indians), tahuri (fermented tofu, sufu, or Chinese cheese. Cubes of tofu are inoculated with an *Actinomucor* mold; angkak is often used to impart a red color), and miso (called chiang in China). A related product is angkak, or “red rice,” made by fermenting rice with the red mold *Monascus purpureus* Went for coloring and flavoring. The science of fermentation can be said to have dawned in the mid-1800s when Louis Pasteur discovered that every fermentation process was associated with a corresponding organism. Before World War II the use of microorganisms for the processing of foods was an unexplained field of study in the Philippines. The four pioneering studies from 1934 to 1937 included one by Yenko and Baens in 1940 the use of rice as a source of carbohydrate in the production of soy sauce. The first scientific investigation (1934, with nata) was done in the University of the Philippines, College of Agriculture in Los Baños, Laguna, and the last three studies were pursued in the former Bureau of Science, now the National Institute of Science & Technology (NIST).

There are no local written reports or scientific investigations of tausi, tahuri, or miso. Their manufacture is dominated by Chinese in the Philippines. Much attention, however, has been given to the production of soy sauce (toyo). Reviews of studies conducted in the Philippines have been given by Soriano (1975) and Soriano and Pardo (1977). Work is presently being done at NIST on the replacement of soy beans with local beans, and wheat with rice, cassava or banana flour in the production of soy sauce. Address: National Inst. of Science and Nutrition, Manila.

2264. Tang, Charles Chang Chiu. 1980. Studies of solid substrate fermentation in Singapore. In: ASEAN Sub-Committee on Protein, ed. 1980. Report on the Second ASEAN Workshop on Solid Substrate Fermentation. Kuala Lumpur, Malaysia. 415 p. See p. 225-233. [5 ref] Address: Dep. of Scientific, Outram Road, Singapore 0316.

2265. Anderson, Eugene N. 1980. Re: Soybeans, tofu, and tempeh. Letter to William Shurtleff at Soyfoods Center, Dec. 12—in reply to inquiry. 2 p. Typed, with signature on letterhead. [4 ref]

• **Summary:** A sinophile, he is collaborating with Dr. Paul Buell (an historian at Western Washington University, Bellingham, WA) on various books on Chinese agriculture, including an economic botany. “We are currently working on the soybean article for this and drawing heavily on your books. He is an inveterate tofu maker who lives by your books.”

The spices in real curry are fascinating and much different from those in the “nauseating and disgusting ‘curry powder’ of commerce.”

He is aware of some spectacularly fine Chinese books on vegetarian soyfoods cookery, written by Buddhist religious groups. “Most of the Chinese cookbooks in English are obscene and should be banned as pornography.”

It is now known that the old Shen Nung Herbal is from ca. 100 A.D.

“Tempe I assume to be an application to soybeans of earlier technology used on coconut. Incidentally the soybean was introduced to the Malay world by people from the Fujian-Guangdong border between Xinmen (Amoy) and Swatow (Shandou), as shown by the distinctive dialect words borrowed into Malay (*bahasa Indonesia, bahasa Malaysia*)—*taohu, taugé, taucho, tausi*, etc. These are also in Indonesian and Filipino—though tausi could be from Cantonese. These are direct borrowings of precisely the dialect forms of the border area, the southern dialects of the Southern Min or Hokkien language. Tauhu, for instance, is their pronunciation of tofu (doufu in standard Chinese). One word I can’t explain is *kecap* (formerly spelled *ketjap* and so pronounced), the Malay word for soy sauce. It seems to have referred earlier to quite a different, local brew. It has nothing whatever to do with ketchup.

“The latest soy news is yet another proof that peasant techniques have their reasons. It now appears that soybeans have a huge amount of phytate, amounting to up to several percent of the bean. Phytate (the distinctive ion of phytic acid) takes up calcium, zinc magnesium, niacin and other chemically active items in food and makes chemical compounds that humans can’t digest effectively. Thus the calcium, niacin, etc., of food is lost. This leads to calcium deficiency, zinc deficiency (as with whole-grain wheat bread eaters in the Near East), or worst of all, pellagra (corn is classically associated with pellagra because it’s high in phytate and low in niacin). But of course if you add calcium or magnesium or the like to your food, it takes up the phytate and you’re OK. Heat also destroys some of it. Micro-organisms such as yeasts and *Aspergillus* can also destroy it, having appropriate enzymes. Thus processing soybeans with gypsum, nigari or fungal fermentation wipes

out this danger.” Address: Dep. of Anthropology, Univ. of California, Riverside, CA 92521.

2266. Sheraton, Mimi. 1980. Restaurants: Sushi and East Side Italian. *New York Times*. Dec. 26. p. C26.

• **Summary:** This is a review of Takezushi, a Japanese sushi restaurant with two branches in New York City: 11 East 48th St. and 101 West 45th St, at the Avenue of the Americas. Three basic types of sushi are offered: nigiri sushi, nori sushi, and chirashi sushi. Takezushi offers an earthy miso soup. “The 45th Street branch offers a few additional specialties that must be requested—natto, a mix of fermented soy beans, egg yolk and scallions;...”

2267. Akizuki, Tatsuichiro. 1980. How we survived Nagasaki. *East West Journal*. Dec. p. 10, 12-13.

• **Summary:** Describes the use of brown rice and miso in saving victims of the atomic bomb blast.

2268. Bau, H.M.; Debry, G. 1980. L’art de l’utilisation du soja: Habitudes et traditions [The art of soya utilization: Customs and traditions]. *Cahiers de Nutrition et de Dietetique* 15(4):277-84. Oct/Dec. [40 ref. Fre; eng]

• **Summary:** “For many centuries, soybeans have meant meat, milk, cheese, bread, and oil to the people of Asia. Because of their great food value, they not only have long had a definite place in the oriental diet but now belong in the diet of America and of the entire world. In Europe, the use of soybean products in the quotidian diet is still limited, however it is sure that they will be an important factor in the balanced diet of the future.”

Note 1. Soyfoods Center has a 16-page English-language translation of this article.

Note 2. *Webster’s Dictionary* defines quotidian (derived from the French *quot* = as many as + *dies* = day) as “occurring every day.” Address: University of Nancy, France.

2269. Cheryan, Munir. 1980. Phytic acid interactions in food systems. *CRC Critical Reviews in Food Science and Nutrition* 13(4):297-335. Dec. [202 ref]

• **Summary:** Phytic acid limits the bioavailability of the minerals present in many plant-derived foods, including soybeans. Address: Dep. of Food Science, Univ. of Illinois.

2270. Elwell, Christian. 1980. Re: Ohio Miso Co. has become South River Miso Co. One year barley miso available. Letter to customers of Ohio Miso Co., Dec. 1980. 1 p. Handwritten form letter, with signature.

• **Summary:** “Dear Friends, old and new,
“The Ohio Miso Company has changed ownership. As of November, 1980, the Elwell family has purchased and moved the equipment and present stock of miso to South River Farm in Conway, Massachusetts. Conway is nestled in

the eastern slopes of the Berkshire Mountains on the banks of the South River. With our new location, we have a new name: the South River Miso Company.

“We are dedicated to continuing the fine craftsmanship begun in Ohio, using only organically grown ingredients, unrefined sea salt, and pure mountain spring water. Eventually we want to follow a full cycle by growing the grains and beans on our own farmland.

“We plan to have our new shop ready for the fall season of 1981. Production methods will continue along the lines of a traditional family cottage industry. Cooking will be done in cauldrons over a wood fire.

“At present we have available a one year Barley Miso in both 5 gallon (45 pound) and 2 gallon (18 pound) buckets. A price schedule with shipping information is enclosed.

“We are excited with the adventure of bringing the fine tradition of miso making to American soil; and, as always, we welcome your comments, criticism, suggestions and support.

“With best wishes, Christian Elwell.” Address: South River Miso Co., South River Farm, Conway, Massachusetts 01341.

2271. Lowe, Marion. 1980. Miso—Another soy food. *Chimo (Canada)*. Dec. p. 46-47.

• **Summary:** An introduction to miso, with two recipes (Mushroom Miso Sautee, and Miso Stew), based on *The Book of Miso* by Shurtleff & Aoyagi. A photo shows a 500 gm jar of Macro-Bio Soya Bean Puree / Puree de Feve de Soja (Miso), sold by Nu-Life Nutrition Ltd. in Vancouver, British Columbia, Canada.

2272. **Product Name:** [Macro-Bio Soya Bean Puree (Miso)].

Foreign Name: Macro-Bio Puree de Feve de Soja (Miso).

Manufacturer’s Name: Nu-Life Nutrition, Ltd.

(Importer). Made in Japan.

Manufacturer’s Address: Vancouver, BC, Canada.

Date of Introduction: 1980. December.

Wt/Vol., Packaging, Price: 500 gm jar.

New Product—Documentation: Photo of jar and label in Chimo. 1980. Dec. p. 47. “Miso—Another soy food.” At top of label: “Authentic Japanese Foods.”

2273. Miyako Oriental Foods, Inc. 1980. Information [Company founding and sales by brand]. 404 Towne Ave., Los Angeles, CA 90013. 1 p. Unpublished manuscript.

• **Summary:** The company was founded on 21 Jan. 1976 and started actual business on June 1. Brands and their share of total company sales are Yamajirushi 60%, Kanemasa 20%, Yamaizumi 10%, Cold Mountain 10%, Private 3%. Markets: Western 85% (California 80%), Eastern 13%, Other 2%. Address: Los Angeles, California.

2274. Muramoto, Noboru. 1980. Miso, and making koji. *Asunaro News* (Glen Ellen, California)

• **Summary:** On the unnumbered pages of this undated newsletter, section we read: "V. Miso—This month's feature article is taken from Mr. Muramoto's lecture-demonstration of the miso-making process. This is made available to the members who could not attend the Institute with the hope that they can be helped to make the foods covered in the lectures by themselves." Describes the benefits of miso and lists the ingredients for making 80 lb of rice miso, using 18 lb dry soybeans and 18 lb dry koji.

"VI. Making koji," gives detailed instructions, starting with 18 lb dry rice. Address: Asunaro Inst., 4600 Cavedale Rd., Glen Ellen, California. Phone: (707) 938-9846.

2275. **Product Name:** [Shree Akita Miso, Akadashi Miso, Soya Sauce (Koikuchi Shoyu)].

Manufacturer's Name: Nepal Soya Industries.

Manufacturer's Address: 9/374 Bhedashing, Jamguthi, Kathmandu, Nepal. Phone: 229130.

Date of Introduction: 1980.

Ingredients: Akita miso: Soybean, rice, koji starter, water, salt.

Wt/Vol., Packaging, Price: Miso: 1 kg.

New Product—Documentation: Letter from Mr. Achutananda Vaidya of Nepal Soya Industries. 1992. Dec. 26. He started making tofu in Kathmandu in 1974. "In 1979-80 I was invited to Japan for 9 months training at the Akita Prefecture Brewing Laboratory. During that time I also learned in detail the processes for making soy sauce, miso, and soyamilk. During that period I also got a chance to read *The Book of Tofu*, *The Book of Miso*, *Miso Production*, and *The Book of Tempeh* all of which helped me very much. I still have all those books. In 1985 I was invited by the Rotarians of Akita-Aomori to return to Japan for 1 month to receive further technical training in making tofu, miso, soy sauce, soyamilk, moyashi (sprouts), koji, fruit fermentations for wine, etc. Today I produce tofu, soy sauce, and miso in my small factory in Kathmandu." His business card notes: "Food Technology in Brewing from Japan. Products & Suppliers: Tofu (Vita), Soyamilk (Vitabean milk), Soya Curd, Soya Sauce, & Miso."

2276. Slamet, Dewi Sabita; Tarwotjo, Ignatius. 1980. Komposisi zat gizi makanan Indonesia [The nutritional composition of Indonesian foods]. *Penelitian Gizi dan Makanan (Research on Food and Nutrition)* 4:21-36. [4 ref. Ind]

2277. **Product Name:** Tofu Salad.

Manufacturer's Name: Solar Winds.

Manufacturer's Address: Ojai, California.

Date of Introduction: 1980.

Ingredients: Tofu, fresh mixed vegetables, miso, safflower oil, vinegar, natural herbs & spices.

Wt/Vol., Packaging, Price: 6 oz.

How Stored: Refrigerated.

New Product—Documentation: Label. 1982. 3 by 2 inch oval. Self adhesive. Yellow, brown on orange. Shurtleff & Aoyagi. 1980. List of soyfoods products.

2278. Aihara, Herman. 1980. Learning from salmon. Oroville, California: George Ohsawa Macrobiotic Foundation. xiii + 156 p. Illust. No index. 22 cm.

• **Summary:** This is a collection of Herman Aihara's writings, over the past 20 years, compiled by Sandy Rothman, editor of GOMF. Each article or essay is dated. Contains a good early history of macrobiotics in the USA, and of Chico-San (p. 26-35).

Herman was born Nobuo Nishiyama in 1920 in Arita, Kyushu, Japan. George Ohsawa's teaching was about how to understand and acquire infinite freedom, absolute justice, and eternal love. He inspired his students greatly, and told them it was their own fault if they were not happy. The food you eat is one of the most important factors that influences a person's health and happiness.

Herman landed in San Francisco in 1952 at age 32 to start a new life. His wife was sick, and two of their babies died.

Before March of 1961 Ohsawa visited Europe and saw many beautiful macrobiotic restaurants and clinics in Belgium, France, Italy, Germany, Switzerland, and England. The Lima factory in Belgium produces macrobiotic foods. Macrobiotic restaurants include Au Riz Dore, and Longue Vie.

Like the salmon, Ohsawa took his most adventurous trip late in his life. He held his first American macrobiotic lectures in 1960 on Long Island, New York. They lasted for 2 months. At that time Herman was manager of the first macrobiotic food store in the USA, in New York City [Named Ginza, it had been started by Herman in 1960.] In 1960 Herman went to Europe to solve visa problems, then in about late 1960 he returned to New York and started publication of *Macrobiotic News*, a magazine that contained mostly Ohsawa's lectures. In 1961 Ohsawa returned to New York for a summer camp in the Catskill Mountains. After the camp he said that followers of macrobiotics should leave New York because nuclear war was immanent. 36 people, including 15 families, decided to move to Chico, California, which they had calculated was the safest place from nuclear fallout. Arriving in Sept. 1961, they soon founded Chico-San, which was the first macrobiotic food production and distribution company in the USA. The first store was in the basement of a small shop. Herman began to import miso, tamari, and other traditional, natural foods from Japan.

Some followers of macrobiotics stayed in New York to keep up the Ohsawa Foundation and food store. One

customer got sick and died [Beth Ann Simon died in Nov. 1965]. The FDA came in and closed the store. Bob Kennedy became president of Chico-San and soon began America's first successful production of Rice Cakes.

Herman moved to San Francisco in 1971. At the end of 1970, John Deming Jr. had given him some land in Mendocino. In Sept. 1972 a fire, started by a rice-cake machine, burned down the Chico-San factory and most of its inventories of food. Chico-San started making money in about 1978.

Western medicine is interested only in treating symptoms. Medical professionals are largely ignorant of the influence of diet on health, and even block the development of the dietary approach to healing. Address: Oroville, California.

2279. Akizuki, Tatsuichiro (Shinichiro). 1980. *Taishitsu to shokumotsu: Kenkô e no michi* [Physical constitution and food: The way to health]. Tokyo: Kuriei Shuppan-bu. 61 p. [Jap]

• **Summary:** Author's first name is given as Tatsuichiro. Kawamura says this is mistaken.

2280. Bhumiratana, Amaret. 1980. *Traditional fermented foods in Thailand*. In: *Proceedings of the Oriental Fermented Foods*. Food Industry Research and Development Institute, P.O. Box 246, Hsinchu, (300) Taiwan. iv + 229 p. See p. 58-70. [19 ref]

• **Summary:** Tao-jeow is Thai miso. Sufu is fermented tofu. The author uses the terms tao-nou and thuo-nao instead of thua-nao throughout; he even misspells it when citing Sundhagul 1970. It is sold as a paste or chips. Soy sauce (the Chinese type), soy paste and fermented soybean curd are commonly available throughout the country although they are more common in the Chinese community. Tao-nou, however, is the product which is popular in the northern part of the country. Flowcharts show the processes for producing soy sauce and tao jeow, tofu and sufu, and thuo-nao. Address: Dep. of Microbiology, Faculty of Science, Mahidol Univ., Rama VI Rd., Bangkok 4, Thailand.

2281. Binding, G.J. 1980. *About soya beans: Wonder source of protein and energy*. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. and New York: Pyramid Books. 64 p. 18 cm. 1st ed. 1970. About series, no. 35.

• **Summary:** Contents: 1. Beans in general. 2. History of the soya bean. 3. Content of soya beans. 4. About lecithin—vital for retaining youth. 5. The soya bean in the Far East. 6. American influence on the soya bean. 7. Industrial uses in America. 8. The soya bean and world food shortage. 9. Soya bean recipes.

A section titled "Wonder food—God's gift to man" (p. 10) states: "For over 5,000 years this tiny seed has been the staple food of certain parts of the East, including North

China, Japan, Korea, and some areas of India. The ancient Yogis, who were among the world's first vegetarians, placed great faith in the soya bean as a supplement to their meatless diet." On the cover is a color photo showing TVP, lecithin, soymilk, soy sauce, miso, soya bean oil, soya flour, and soya sprouts.

Note 1. The copyright page states: "First published 1970. Second impression 1971. Third impression 1977. Second Edition, revised and reset 1980." Note 2. This book has no preface by Carlson Wade. Address: F.R.H.S., England.

2282. Bloodroot Collective; Beaven, Betsey; Giordano, Noel; Miriam, Selma; Shea, Pat. eds. 1980. *The political palate: A feminist vegetarian cookbook*. Sanguinaria Publishing, 85 Ferris St., Bridgeport, CT 06605. xxiii + 325 p. Illust. Index. 23 cm. [39 ref]

• **Summary:** This feminist collective and restaurant is named Bloodroot for an eastern woodland wildflower, *Sanguinaria canadensis*. They "found something symbolic in its slow spreading rhizomatous root system and the way each piece of root throws up its own grey-green leaf furled protectively around the eight-petaled white flower. Any part of the root, stem, or leaf 'bleeds' a red juice." The cookbook is largely vegetarian (though 8 recipes which use fish are included), seasonal, and ethnic/regional. The introduction praises the books on tofu, tempeh, and miso written by Shurtleff and Aoyagi as "truly political books." Their favorite vegetarian cookbook is Julie Jordan's *Wings of Life* (Crossing Press). The book is interspersed with feminist quotations and has a separate lengthy feminist bibliography.

Soy-related recipes include: Harvest vegetable platter with miso gravy (p. 17-19). Winter miso soup (with soybeans, p. 80-81). Kasha platter (with miso gravy, p. 91-92). Indonesian tempeh dinner (p. 96-97). Uراب: Indonesian steamed vegetable salad (with tofu, p. 98). Sea vegetable salad (with tofu dressing and wakame, p. 134-35). Grilled Ma-Po tofu and rice (p. 169-70). Hot and sour soup with wild daylily buds (and tofu, p. 188-89). Snow pea salad with tofu sauce (p. 196). Omelet grandmere (with miso gravy, p. 280-82). Address: Bridgeport, Connecticut.

2283. Brotonegoro, Soetarjo; Sudjana, M.; Saono, S. 1980. *Preservation of economically important cultures by freeze drying*. Paper presented at the Second ASEAN Workshop on Solid Substrate Fermentation. Held 27-29 Nov. 1980 at Kuala Lumpur, Malaysia. *

• **Summary:** The author isolated, identified, and preserved the microorganisms in some traditional Indonesian foods such as tempe, tauco (Indonesian miso), and kecap (soya sauce). Address: Malang Research Inst. for Food Crops (MARIF).

2284. Dent, Der-Feng. 1980. Mechanism of fermentation of brewing yeast in high salt concentration. In: Proceedings of the Oriental Fermented Foods. Food Industry Research and Development Institute, P.O. Box 246, Hsinchu, (300) Taiwan. iv + 229 p. See p. 112-25. Held 10-14 Dec. 1979 in Taipei, Taiwan. 6 tables. [8 ref]

• **Summary:** Discusses the use of salt-tolerant yeasts in making fermented soy sauce and miso or chiang. Address: Dep. of Food Science, Provincial Ping-tung Inst. of Agriculture, Pingtung, Taiwan.

2285. Doi, Tadao; Takeshi, Morita; Chonan, Minoru. 1980. Hôyaku Nippo jisho [Vocabulary of the language of Japan]. Tokyo: Iwanami Shoten. xxxiv + 862 p. 27 cm. [Jap; Por]

• **Summary:** This is a Japanese-language translation of the original 1603 edition, *Vocabulario da Lingua de Iapam*, the second earliest dictionary of the Japanese language compiled by Europeans. Soy-related terms in this dictionary, which are translated from the original hard-to-read Portuguese into modern Japanese, are described in detail at the reference for the original 1603 dictionary, which see.

In the Forward, the author notes that this is the entire translation of the Nagasaki edition of the Japanese Portuguese Dictionary. The original title is *Vocabulario da Lingoa de Iapam com a declacaração em Portugues* (Japanese dictionary with explanation in Portuguese), published in 1603 by the Japanese Society of Jesus (Nihon Iezuzu-kai). In 1604 a second dictionary was published, titled *Arte da Lingoa de Iapam Composta Pello Padre Iaa Rodriguez* (1604-1608).

Christian priests traveled by boat to Japan to teach the Japanese Christianity. As a result, they left many historical documents. Francis Xavier first arrived in Japan in 1549 and only 54 years later his group published this remarkable Japanese dictionary. The year 1603 was also the year that Tokugawa Ieyasu became the shogun (Seiitaishogun, or highest ranking samurai), founding the Tokugawa Shogunate or Edo period. In Japanese history it was the turning point at which the country changed from the medieval period to the modern one. This dictionary is a very unique mirror which reflects this period and is regarded as an important document that raises many questions in Japanese cultural history. The dictionary is indispensable in Japanese linguistic history since it contains many Japanese words of the period with explanations in Portuguese. In those days the Japanese had dictionaries that focused on Chinese characters (kanji) and simple dictionaries for waka and renka poems. This dictionary picked up a wide range of words from daily conversation, organizing and defining them in modern dictionary form. The original edition was stored in a secret place in Europe, inaccessible to Japanese, who therefore had to largely depend on a 19th century French translation by Leon Pajes. A rotogravure edition of the book stored at Oxford University entered Japan during

the Taisho period (1912-1926) and was studied. Only recently was a facsimile copy of the original edition published, and it is being used increasingly.

This dictionary was produced by the Japanese Society of Jesus [Jesuits] to further their goal of spreading Christianity. The 1603 dictionary was developed to help the priests understand dialects, lower-class speech, and the confessions of the local common people. The 1604 dictionary focused on the speech of the upper classes and more educated people. Thus the 1603 dictionary collected words the priests needed to understand, while the 1604 dictionary collected those that they wanted to use.

2286. Easterday, Kate Cusick. 1980. The peaceable kitchen cookbook: Recipes for personal and global well-being. New York, NY, Toronto, Canada: Paulist Press. 313 p. Illust. by Ragna Tischler Goddard. 21 cm. [28 ref]

• **Summary:** A vegetarian cookbook. Page 45 describes how to sprout various seeds and beans, including soybeans. The section titled "Soybeans Simplified" (p. 66-75) begins by asking "Why are soybeans so highly praised?" then gives recipes for: Basic cook soybeans. Soyburgers (from cooked, mashed soybeans). How to make soy milk (12 cups, using soy flour or soybeans). Soy "coffee." Tofu (soybean curd). Tofu sandwich spread. How to roast soybeans (dry). The last page of the section, titled "Soybean Terminology" gives 1-2 line descriptions of: Soy grits, soy meal, soy granules, soy flour, soy powder (extra fine soy flour, used to make soy milk), soya (implies that the product has been toasted), roasted soybeans, tofu, miso, tamari.

Other soy-related recipes include: Wheat-soy pancakes (with soy flour, p. 169). Soy fritters (with mashed soybeans, p. 222). Simple soy bean loaf (p. 228). Vegetarian sukiyaki (with tofu and soy sauce, p. 231). Soy cheesecake (with tofu, p. 291). Address: Illinois.

2287. Fessler, Stella Lau. 1980. Chinese meatless cooking. New York, NY and Scarborough, Ontario, Canada: New American Library. 298 p. Illust. by Janet Nelson. Index. 20 cm.

• **Summary:** This vegetarian cookbook, which contains more than 180 recipes, demonstrates vividly how much Chinese vegetarian cookery depends on soyfoods—especially tofu (bean curd). The glossary includes excellent descriptions of bean curd—fermented red (*nan-ru*), bean curd—fermented white (*tofu-ru*), bean curd—pressed threads or noodles, bean curd sheets (*tofu-pi [yuba]*), bean curd sheets (*er-ju*), bean curd sheets—pressed or hundred-leaf (*bai-yeh*), bean curd sticks (folded bean curd sheets), brown bean paste or brown bean sauce, bean paste—Szechuan hot bean or spicy soy, bean sprouts—soy or yellow, fermented or salted black beans, Hoisin sauce, Oyster sauce (with soy), soy sauce, soy sauce—light or thin.

The chapter on soups stocks notes that soybeans or soybean sprouts have a delicate flavor and are most suitable for making stock. Soy sprouts, which are much larger than mung bean sprouts, have a more chewy texture and a very sweet, delicate taste; they are often used to strengthen the flavor of a dish (see recipe p. 90).

Soy-related recipes (each with the name written in Chinese characters) include: Mixed pressed bean curd threads (p. 68). Spinach and deep-fried bean curd puff salad (p. 70). Soybean sprout salad (p. 73). Pressed bean curd salad (p. 76). Monks in a storm of wind and snow (Asparagus and bean curd salad, p. 82). Soybean sprout stock (p. 90). Deep-fried bean curd and mung bean noodle soup (p. 93). Spinach and bean curd soup (p. 98). Seaweed and bean curd soup (p. 99). Soybean soup (p. 100). Soybean with fried gluten soup (p. 101). Asparagus and bean curd soup (p. 106). Goddess of Mercy (Kuan-yin) soup (With bean curd and tiger lily bulbs, p. 112-13).

One long chapter (p. 118-160) is titled "Bean curd dishes, mock meat dishes, and mock fish dishes." It gives good definitions of and home-scale recipes for: Bean curd. Deep-fried bean curd puffs. Plain pressed bean curd cakes. Five-spice pressed bean curd cakes. Braised deep-fried bean curd puffs. Bean curd with oyster sauce (not vegetarian). Braised bean curd. Spicy bean curd. Steamed bean curd with spicy bean paste sauce. Bean curd with tomatoes. Bean curd with fresh mushrooms. Cold bean curd. Stubborn stones' obeisance (Fried bean curd with vegetables). Braised frozen bean curd with chives. Braised Fukien [Fujian] bean curd. Stir-fried Chinese chives with pressed bean curd. Stir-fried pressed bean curd with carrots and bamboo shoots. Mock lion's head (with five-spice pressed bean curd). Stir-fried green peppers with mock meat (pressed bean curd). Mock moo goo gai pan (Stir-fried pressed bean curd with vegetables). Mock roast duck (with dried bean curd sheets and soy sauce). Mock soy sauce chicken (with fresh or frozen hundred-leaf bean curd sheets). Mock velvet chicken (fried bean curd with egg whites). Spicy mock chicken (with mock soy sauce chicken). Mock ham (with dried bean curd sheets). Bock abalone (braised gluten balls). Mock mu-shu pork (with five-spice pressed bean curd, shredded). Fried mock squab (with chopped pressed bean curd). Mock twice-cooked pork (with five spice pressed bean curd). Bean curd with thousand-year eggs.

Other interesting recipes include: Wheat gluten (homemade mein jin or vegetable steak, p. 165-66; At Chinese grocery stores, wheat gluten is sold in various forms—fried, dried, steamed, boiled, canned, and frozen). Fried gluten balls. Boiled gluten. Lo Han vegetable dish (with fried wheat gluten balls, p. 169-70). Chinese mustard greens in black bean sauce (p. 173-74). Stir-fried leeks with bean curd (p. 186). Fresh soybeans stir-fried with fresh mushrooms (p. 187). Boiled fresh soybeans in their pods (p. 188). Bean sprouts stir fried with wheat gluten (p. 190).

Stir-fried soybean sprouts with bean curd puffs (p. 191). Cauliflower and bean curd sticks (p. 192). Winter melon with red fermented bean curd sauce (p. 195). Stir-fried asparagus with fermented bean curd (p. 197). Stir-fried lettuce with white fermented bean curd sauce (p. 198). Sweet and sour fried gluten and cabbage (p. 208). Two immortals in the apricot garden (fried gluten with vegetables and almonds, p. 209). Braised eggs with bean curd sticks (p. 213-14). Scrambled eggs with fermented bean curd (p. 214). Bean curd with salted eggs (p. 216-17). Wonton soup (with fresh bean curd, p. 233-34). Fried wontons (filled with five-spice pressed bean curd, coarsely chopped). Soybean milk, sweet soybean milk, and salty soybean milk (p. 247-48). Deep-fried crullers (*yu chiao*; sometimes served in hot soymilk, p. 249-50). Noodles with spicy bean paste sauce (and five-spice pressed bean curd, p. 258-59). Address: Cornell Univ., Ithaca, New York.

2288. Fukushima, Danji; Hashimoto, Hikotaka. 1980. Oriental soybean foods. In: F.T. Corbin, ed. 1980. World Soybean Research Conference II: Proceedings. Boulder, Colorado: Westview Press. xv + 897 p. See p. 729-743. [7 ref]

• **Summary:** Contents: Fermented soybean foods. Non-fermented soybean food. Conclusion. References.

The following statistics show the amount (tons) of whole soybeans/ defatted soybean grits/ total of whole and grits consumed for various soybean foods and feeds in Japan in 1976.

Fermented soyfoods: Shoyu (soy sauce) 10,000/ 165,000/ 175,000, miso 190,500/ 5,000/ 195,500. Natto 69,000/ 0/ 69,000.

Non-fermented soyfoods: tofu and aburage (fried tofu pouches) 411,500, 55,000/ 466,500. Kori-tofu (dried-frozen tofu) 29,000/ 0/ 29,000. Others 16,000/ 75,000/ 91,000.

Animal feeds: 30,000/ 1,950,000/ 1,980,000. Thus total use for foods and feeds is whole soybeans 756,000. Defatted soybean grits 2,250,000, total of both 3,006,000. By type of use, animal feeds account for 65.9% of total Japanese usage of whole soybeans and defatted grits, non-fermented soyfoods account for 19.5%, and fermented soyfoods account for 14.6%. The top three food users are tofu (466,500 tons, 45.5% of all food uses), miso (195,500), and shoyu (175,000). There are 35,000 tofu plants in Japan.

Fermented soybean foods described are shoyu (soy sauce; 5 types), miso (3 basic types, 6 varieties), sufu (Chinese soybean cheese), tempeh (fermented soybean cake), natto (fermented whole soybeans; itohiki-natto and hama-natto), and fermented soymilk (recently a new fermented soybean product appeared on the market in Japan. It is a soy milk drink fermented by lactic acid bacteria).

Non-fermented soybean foods described are tofu (soy milk curd), aburage (fried tofu pouches), kori-tofu (dried-

frozen tofu), yuba (coagulant film of soy milk), kinako (roasted soybean powder), moyashi (soybean sprouts), and soybeans. Production, chemical composition, and use of each of these foods is discussed. Address: Kikkoman Foods Inc., P.O. Box 69, Walworth, Wisconsin 53184.

2289. Gay, Martin; Gay, Kathlyn. 1980. Eating what grows naturally. South Bend, Indiana: And Books. 137 p. Illust. by Brian "Woodie" Byrn. 21 cm. [75 ref]

• **Summary:** A book about natural foods, with some vegetarian recipes. Martin was born in 1950. Pages 79-80 give ten menus based on Shelton's food-combining principles, including (5) Stir-fried vegetables and tofu cubes, and (9) Tofu-vegetable casserole with green salad. Page 106 gives definitions of miso, tamari, tempeh, and tofu. Soy-related recipes include: Soy burgers (with ground, cooked soybeans, p. 108), and tofu casserole (p. 109).

2290. Hanssen, Maurice. 1980. Country kitchen recipes with soya beans. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 32 p. Illust. 14 cm. * Address: Northamptonshire, England.

2291. Himalayan International Institute. 1980. The Yoga way cookbook: Natural vegetarian recipes. 4th ed. Honesdale, Pennsylvania: Himalayan International Institute of Yoga Science and Philosophy. 249 p. Illust. Index. 22 cm. 1st ed. as 1974.

• **Summary:** A vegetarian and natural foods cookbook. Pages 8-9 describe in detail how to make tofu at home. A list of special ingredients includes soybeans, soy granules, grits, and flour, miso, tamari, and tofu. Soy-related recipes include: Tofu spinach pie (p. 18). Soybean tacos (p. 32). Soy burgers (p. 36). Tofu burgers (p. 40). Tofu rice with vegetables (p. 47). Soybean rice (p. 49). Soy-potato soup (with soy granules, p. 105). Miso soup (p. 116). Tamari soup (p. 117). Tofu salad dressing (p. 127). Scrambled tofu (p. 228). Tofu-avocado supersandwich (p. 233). "Short order" tofu luncheon.

2292. Hu, Shiu-ying; Kong, Y.C.; But, Paul P.H. comp. 1980. An enumeration of Chinese materia medica. Hong Kong: The Chinese University Press. xxiv + 287 p. Illust. Index. 17 x 24 cm. [40+ ref. Eng; chi]

• **Summary:** A dictionary, arranged alphabetically. Part of the growing interest in ethnopharmacology. Dr. Hu is a woman. Contents: Dedication. Foreword, by Richard Evans Schultes (Director, Botanical Museum, Harvard Univ.). Preface by E. John Staba (College of Pharmacy, Univ. of Minnesota). Acknowledgments. Introduction: Selection, structure, appendices, literature cited. Part I: An alphabetical list (numbered) of Chinese medicines, with their Chinese names (transliteration and characters), botanical names, and their equivalents in English and pharmaceutical usage (p. 1-

188). Part II: A systematic arrangement: Plants, animals, minerals, and miscellaneous preparations (p. 191-229). Appendices: I-A. A guide to the Wade system of romanization. I-B. A table for the conversion of Pinyin to the Wade system. II. Alphabetic lists of families and general of plants. III. The conversion of simplified Chinese characters into classical form. IV. An index of Chinese names.

Soy-related items in Part I. #800, p. 65: "Lu-tou-p'i (Tou-i). Soybean husk. Testa Glycines.

"#1425, p. 115: Ta-tou huang-chuan. Young [yellow] soybean sprouts. Plantula Glycines.

"#1477, p. 119: Tan-tou shih (shih as in fermented black soybeans). Glycine soja [wild soybean], *Morus alba* [white mulberry], plus *Artemisia apiacea* [member of the daisy family, Asteraceae]. English: Tantoushih. Pharmaceutical: Mistura Glycines, Mori, et *Artemisiae Fermentata*.

"#1651, p. 134: Tou-fu (Tou-chiang, Tou-fu cha [= dregs], Tou-yu). Tofu (Soybean jiang, okara, soy oil). Soybean products. Effectus Glycines.

"#1653, p. 134: Tou-huang. Bean + yellow. Glycine soja. Black soybean (cooked and mold yellow). Touhuang.

"#1661, p. 135: Tou-shih (Hêh-tou shih). Black + bean + fermented soybeans. Glycine soja. Black soybean (medicated). Semen Sojae Praeparatus.

"#2105, p. 172: Yeh liao tou. Glycine soja. Wild soybean. Semen Glycines Soja.

"#2129, p. 175: Yeh ta-tou t'êng. Glycine soja. Wild soybean. Herba et Radix Glycines Soja." Address: PhD, Botanist.

2293. Hymowitz, T.; Newell, Christine A. 1980. Taxonomy, speciation, domestication, dissemination, germplasm resources, and variation in the genus *Glycine*. In: R.J. Summerfield and A.H. Bunting, eds. 1980. Advances in Legume Science. Royal Botanic Gardens, Kew, Richmond, Surrey, England. xvi + 668 p. See p. 251-64. [91 ref]

• **Summary:** Contents: Abstract. Taxonomy of *Glycine*. *Glycine* species [*G. soja*, *canescens*, *clandestina*, *falcata*, *latrobeana*, *tabacina*, *tomentella*]. Domestication and dissemination of the soybean. Germplasm resources. Variation. Address: Univ. of Illinois at Urbana-Champaign, Champaign, USA.

2294. Iwamoto, H. 1980. General aspects of Japanese fermented foods. In: Proceedings of the Oriental Fermented Foods. Food Industry Research and Development Institute, P.O. Box 246, Hsinchu, (300) Taiwan. iv + 229 p. See p. 31-45. Held 10-14 Dec. 1979 in Taipei, Taiwan. 15 tables. 2 figs.

• **Summary:** The fermented foods indigenous to Japan which are made from protein-rich materials can be grouped into two types: the soybean group and the fish group. The former, which includes miso, shoyu, and natto, is the more

popular and production is very large. The author presents an early history and genealogy of miso, shoyu, and natto based on the Japanese-language writings of Prof. K. Sakaguchi and Prof. M. Nakano. Shi [soy nuggets] were recently found in an ancient Chinese tomb of the 2nd century B.C. “The word *shoyu* or *chiang-yu* never appeared in any old Chinese manuscripts. Nevertheless I wonder if the origin of Japanese shoyu might be the Chinese *chiang* in the Ming dynasty or an earlier period. Anyhow, the question is still: When did the Chinese start making koji from a mixture of soybean and wheat? And when and where was filtration of soybean *chiang* successfully commenced. As for the later, it is quite possible that the filtration was started in Japan.”

In 1977 the following amounts of fermented soyfoods were produced in Japan: miso 620,902 tonnes (using 190,000 tonnes of whole soybeans and 1,579 tonnes of defatted soybean meal), shoyu 1,228,244 tonnes (using 11,788 tonnes of whole soybeans and 180,000 tonnes of defatted soybean meal), and natto 120,000 (using 71,000 tonnes of whole soybeans).

Table 2 shows soybean production in Japan and the USA every 5 years from 1930 to 1978. Production in Japan was 388,600 tonnes in 1930, reaching a peak of 507,100 in 1955, falling to a low of 109,500 in 1976, then rising slightly to 187,900 in 1978. The first year for which imports are shown is 1970, when 3,243,790 tonnes were imported, 91% of which from the USA. In 1978 4,260,041 tonnes were imported, 97% from the USA.

Table 6 shows miso production in Japan from 1967 to 1976. Factory production grew from 535,000 tonnes in 1967 to a peak of 650,000 tonnes in 1973, down slightly to 630,000 tonnes in 1976. Farmer (household) production decreased steadily from 207,000 tonnes in 1967 (39% of factory production and 26% of total production) to 67,000 tonnes in 1976 (11% of factory production and 10% of total production). Total production and annual per capita consumption decreased from a peak of 789,000 tonnes in 1967 (7.8 kg/capita) to a low of 697,000 tonnes in 1976 (6.5 kg/capita).

Table 7 shows the number and capacity of miso factories in Japan and their production in 1959, 1968, and 1977. The number of factories decreased dramatically during this 18-year period (to from 2,987 to 1,996), but the total amount of miso produced increased 503,000 tonnes to 621,000 tonnes, and the percentage of all miso made by large factories (those making 3,751 tonnes/year or more) rose from 15% to 52%, while the percentage of all miso made by small factories (those making 1-375 tonnes/year) decreased from 29% to 14%.

Table 8 shows the materials used in making shoyu in Japan from 1968 to 1977. The amount of whole soybeans decreased from 15,000 tonnes to 9,000 tonnes, the amount of defatted soybean meal increased from 147,000 tonnes to 176,000 tonnes, the amount of wheat increased from

127,000 to 178,000 tonnes, and the amount of salt from 170,000 tonnes to 204,000 tonnes. The amount of amino liquor (HVP) decreased from 140,000 tonnes to 89,000 tonnes.

Table 9 shows shoyu production in Japan from 1967 to 1976. Factory production grew from 1,201 kiloliters (kl) in 1967 to a peak of 1,403 kl in 1973, down slightly to 1,349 kl in 1976. Farmer (household) production decreased steadily from 20 kl in 1967 (1.67% of factory production 1.63% of total production) to 9 kl 1976 (0.66% of factory production and 0.66% of total production). Total production and annual per capita consumption increased from 1,221 kl 1967 (12.0 liters/year) to a high of 1,411 kl in 1973 (12.6 liters/year), then down slightly to 1,355 kl in 1976 (11.9 liters/year). Table 10 shows that in 1977 there were 3,135 shoyu factories in Japan. Of these, 2,654 (85% of the total) were in the smallest scale, having 10 or fewer employees, while 5 had 201-300 employees, and 8 had 301 or more employees.

Fig. 2 shows the percentage of shoyu that is distributed through various channels as it moves from the factory to large or small consumers. Address: College of Agriculture, Meiji Univ., Ikuta, Tama-ku, Kawasaki-shi, Japan.

2295. Lu, Gwei-Djen; Needham, Joseph. 1980. *Celestial lancets: A history and rationale of acupuncture and moxa*. Cambridge, London, New York, New Rochelle, Melbourne, Sydney: Cambridge University Press. xxi + 427 p. Illust. Index. 26 cm. [300+* ref]

• **Summary:** Contents: List of illustrations. List of tables. List of abbreviations. Authors' foreword. 1. Introduction. 2. The *ching-lo* system and its classical theory. 3. Historical growth of the system. 4. Moxibustion. 5. Therapy and analgesia; physiological interpretations. 6. Influences on other cultures. 7. The lore of vital spots. 9. Conclusions. Bibliographies.

This is a wonderful, scholarly study of two of the most ancient therapeutic techniques of Chinese medicine. “Acupuncture is the implantation of very thin needles into subcutaneous connective tissue and muscle at a great number of different points on the body's surface: moxibustion is the burning of *Artemisia tinder* (moxa) either directly on the skin or just above it. For 2500 years the Chinese have used both techniques to relieve pain and to heal a wide variety of illnesses and malfunctions.

“Dr. Lu and Dr. Needham, in this preview of an important section of *Science and Civilisation in China*, give a full historical account of acupuncture and moxibustion in the theoretical structure of Chinese medicine, and combine this with a rationale of the two techniques in the light of modern scientific knowledge. The book is in no sense a clinical manual: rather is it a contribution, judicious and enlightened, to that oecumenical medicine which will

eventually combine all the true powers discovered in China and Europe.”

Authors' Foreword: “Many conclusions which had formerly to based on philological arguments about the dating of texts, have now received dazzling confirmation from archaeological discoveries, as for example the four manuscripts on silk which contain descriptions of the acupuncts and were recovered only very recently from the Han tombs of the -2nd century at Ma-wang-tui. These scrolls reveal a development of acupuncture a good deal earlier than the *Nei Ching*. And from that same -2nd century there are the acupuncture needles found among the grave-goods of the Prince of Chung-shan, Liu Shêng. Or one could instance the acupuncture texts intended to accompany those life-size bronze figures demonstrating acu-points which were introduced first in the +11th century, texts which were later discovered inscribed on stone tablets that had been buried in the gate bastions of a city wall. It is to be expected that future archaeological finds will throw much further light on the development of Chinese medicine as a whole.”

“The *Huang Ti Nei Ching* (Yellow Emperor's Manual of Corporeal Medicine) is the oldest and most famous of the Chinese medical classics... We date the *Su Wên* part of it (Questions (and Answers) about Living Matter) in the -2nd century, and the *Ling Shu* (Vital Axis) in the -1st.” Acupuncture is first discussed in this remarkable book.

Concerning moxa, page 171 states that it was often desired to apply the stimulus of a heat treatment only, without actual cautery. This was called *wên chiu* (warming moxibustion) or “moxa that left no scar on the skin. The classical way of doing this was to use a layer of some vegetable substance between the skin and the burning incense-like cone. One technique was to have it burn down on a layer of soya-bean paste (*tou chiang chiu*); or else a slice of garlic, or a slice of ginger could be interposed.”

Note: This is the earliest English-language document seen (March 2009) that uses the term “soya-bean paste” to refer to miso—in this case *tou chiang / doujiang* (Chinese-style miso).

Pages 268-69 state: “It was throughout the second half of the +17th century that information about acupuncture began to attract the attention of Europeans. The very first writer, so far as we can see, who spoke about acupuncture was the Dane Jacob de Bondt (1598-1631) who in his capacity as surgeon-general for the Dutch East Indian Company at Batavia had come into contact with Chinese and Japanese physicians.” The first illustrations (four) of the acu-points in the Western world appeared in Willem ten Rhijne's book of +1683. Andreas Cleyer in his *Specimen Medicinae Sinicae* (1682) gave detailed illustrations of acupuncture (p. 276-83). The German naturalist Englebert Kaempfer (1651-1716) gave the clearest account to date of acupuncture which he observed among the Japanese (p.

287-92). Address: 1. Assoc. Director; 2. Director. Both: East Asian History of Science Library, Cambridge, England.

2296. McConnaughey, Evelyn. 1980. Sea vegetable recipes from the Oregon coast. Oregon Inst. of Marine Biology, Charleston, OR 97420. 32 p. Illust. by Lynn Rudy. No index. 22 cm. [8 ref]
Address: Oregon.

2297. McConnaughey, Evelyn. 1980. More sea vegetable recipes from the Oregon coast. Plus seaweeds from the Orient. 1653 Fairmount Blvd., Eugene, OR 97403. 41 p. Illust. by Catherine Vignaux. No index. 22 cm. [8 ref]
Address: Oregon.

2298. Nagahori, Takashi; Motai, H.; Okuhara, A. 1980. Shôyu no N-nitroso amin seisei yokusei busshitsu [On the substances in shoyu to suppress the nitrosation of dimethylamine]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 33(3):151-60. [39 ref. Jap]

• **Summary:** Amino acids in shoyu competitively inhibit formation of nitrosamines from nitrite and amines. Shoyu, miso, and protein hydrolysates suppress nitrosation by 60-70%, by means of Van Slyke reactions between amino acids in the soyfoods and nitrites. Rates of suppression are: regular (*koikuchi*) shoyu 62-65%, tamari shoyu 69-79%, and rice miso 71-77%. Address: Central Research Labs., Kikkoman Shoyu Co. Ltd., Noda, Japan.

2299. Null, Gary. 1980. The new vegetarian cookbook. New York, NY: Macmillan Publishing Co., Inc.; London: Collier Macmillan Publishers. x + 310 p. Recipe index. 24 cm.

• **Summary:** One chapter (p. 52-60) titled “Soybeans and Soybean Products” discusses: “Whole, raw soybeans” [green vegetable soybeans], dried soybeans, soybean milk soy flour, soy grits, soy flakes, tempeh, tamari, miso, and tofu. The long section on tofu begins: “As a high-quality source of complete protein, tofu (soybean curd, usually called bean curd) is hard to beat, not to mention inexpensive, low in calories and versatile.” It ends: “As you become more familiar with tofu, you'll come up with many of your own innovations. But no matter how you choose to serve this natural, high-protein food, serve it often and savor its benefits!”

Page 78, under “Bean Sprouts,” states that “Soybeans make the most delicious sprouts, but are a little more difficult to grow” than mung bean sprouts. Page 88 notes that tamari and miso are good alternatives to salt.

Soy-related recipes include: Miso tofu soup (p. 132-33). The section titled “Tofu Dishes” (p. 199-208) includes: Butternut tofu. Tofu cauliflower casserole. Herby tofu croquettes. Mushroom and tofu sautéed in miso. Tofu Orleans. Red and green peppers with tofu. Soba tofu dinner. Tofu eggplant Parmesan. Yogurt tofu casserole [with cow's

milk yogurt]. Tomato tofu and kidney beans. Bulghur, lentil and tofu casserole. Tofu à la king. Sesame tofu (Tofu plus sesame seeds). Hot breakfast for two (tofu with oatmeal, raisins, and walnuts).

Soy-enriched wheat berry bread (p. 242). Page 304 contains a list of food suppliers, including Chico San, East West Journal Mail Order, and Walnut Acres (Penns Creek, Pennsylvania). Address: New York City, NY.

2300. Pennington, Jean A.T.; Church, Helen Nichols. eds. 1980. *Bowes and Church's food values of portions commonly used*. 13th ed. Philadelphia, Pennsylvania: J.B. Lippincott Co. xvii + 186 p. Index. 28 cm. 1st ed. was 1937. 2nd ed. was 1939. 10th ed. was 1966. [62 ref]

• **Summary:** The index contains entries for: Beans (but no soy). Cheese and cheese food (but alternatives). Cheez-its, Chili-vegetarian. Float, Dairy Queen. Flour. French fried potatoes (Arthur Treachers, Burger Chef, Burger King, Dairy Queen, Long John Silver's, McDonald's, Wendys). Ice cream bars. Infant formulas (Isomil-Ross Labs, L-Soyalac-Loma Linda, Neomullsoy-Syntex, Nursoy, ProSobee-Mead Johnson, Soyalac-Loma Linda). Irishmoss [Irish moss]. Milk (goat, human, Indian buffalo, reindeer, sheep, soybean, whole). Miso. Natto. Oils. Soyamaise dressing (p. 122). Soyamel. Soybeans, fermented. Soybean curd. Soybean flour. Soybean milk. Soybean nuts. Soybean oil. Soybean protein. Soysauce. Teriyaki sauce. Tigers Milk Bar. Tofu. Tom Collins. Veg Skalops. Veja-Links. Vegeburger. Vegetarian products made mostly by Worthington Foods and Loma Linda (p. 22-23): Beef style roll, Chicken style, Chic-Ketts, Chili, Corned beef style, Croquettes, Dinner cuts, Fry Sticks, Gran Burger, Meatloaf mix, Nuteena, Prosage, Proteena, Rediburger, Smoked beef style, Stakelets, Stripples, Tasteecuts, Turkey Style-Smoked, Vega-links, Vegeburger, Veg Skalops, Vegetarian Burger, Vitaburger, Wham. Yogurt.

Aluminum is not among the lists of trace minerals in foods in the back. The book *does* list the following as trace minerals: chromium, cobalt, fluoride, iodine, molybdenum, nickel, selenium, and tin. Address: 1. Formerly Instructor of Nutrition, City College of San Francisco, San Francisco, California [Now with U.S. Food and Drug Administration, Washington, DC]. Phone: 202-245-1064.

2301. *Quadernos de Natura (Editorial Posada, Mexico)*. 1980. La alimentacion macrobiotica [The macrobiotic diet]. No. 10. 88 p. [10 ref. Spa]

• **Summary:** Includes information on miso, natto, tamari, tekka miso, and sea vegetables.

2302. Redfield, Linda. 1980. *Vegetarian cooking with tofu*. Davis, California: Printed by the author. 9 p. 21 cm.

• **Summary:** This typewritten booklet of vegetarian tofu recipes has the Chinese characters for "tofu" written on the

brown cover. It was reproduced by photocopying and bound with four staples (saddle stitched). Contents: Nutritional information. A simplified method of preparing tofu from soybeans. Sauces (incl. Miso spread, Dipping sauce with tamari, Tofu marinade with tamari, Teriyaki marinade with tamari). Tofu salads. Chinese recipes. Mexican recipes. Recipes using sliced tofu. Italian recipes. Tofu desserts and fruit whips.

Talk with Linda Redfield. 2002. Sept. 23. She developed this booklet in about 1980 in Davis—before she went to Arcata, where she now lives. Her business is now named Holistic Self Healing. She does nutritional and wellness counseling, whole foods meal service, cooking and nutrition classes, and energy therapies. After her name are the following title abbreviations: D.C. (Diet Counselor), N.E. (Nutrition Educator), W.C. (Wellness Consultant). She is like a wholistic dietitian. Address: Davis, California.

2303. Shandler, Nina; Shandler, Michael. 1980. *How to make all the "meat" you eat out of wheat: International gluten wheat "meat" cookbook*. New York, NY: Rawson, Wade Publishers, Inc. xiv + 241 p. Index. 24 cm. [10 ref]

• **Summary:** How to make and use wheat gluten in a vegetarian diet, with 250 American and international recipes. Contents: Acknowledgements. Author's note. Part I. Introducing wheat "meat": 1. The cost of the meat-centered diet: How meat consumption affects ecology, economy and health, food economy, fuel conservation, water reserves and pollution, heart disease, cancer and meat eating, premature aging, chemical residues in meat, medical costs. 2. Introducing wheat "meat": a low-cost, homemade alternative to meat (gluten meats cost about \$0.15 per serving). 3. How to make "meat" from wheat: Preparing raw gluten (from 7 cups whole wheat flour), seven varieties of wheat "meat," cutlets (a veal substitute), steak (a mock beef steak), ground gluten (a hamburger taste-alike), spiced links (an alternative to sausage), roast with a beef flavor, seawheat (a clam alternative), poultry pieces (chicken-flavored wheat "meat), using the reserved starch, bran and germ: Gluten-free crackers, and cold crunchy cereal.

Part II. Hundreds of international ways to serve wheat "meat": 4. All-American wheat meat recipes. 5. Mexican wheat "meat" food. 6. Latin American. 7. British. 8. French. 9. Spanish. 10. Italian. 11. Austrian. 12. Greek. 13. African. 14. Indian (from India). 15. Chinese. 16. Japanese wheat "meat" cooking.

Note 1. Tamari soy sauce and miso are used to flavor a number of recipes in this book. Other soy-related recipes include: Spiced bean curd and cutlet (with tofu, p. 212). Spares with black beans (mock spare ribs with Chinese soy nuggets, p. 216). Family-style bean curd (with tofu, p. 219). Poultry with orange-flavored soy sauce (p. 228-29). Seawheat in soy and ginger sauce (p. 229). Seawheat with bean curd and vegetables in casseroles (p. 230). Seawheat

with vinegared miso (p. 231). Note 2. This book does not mention “seitan,” but a Japanese recipe titled “Seawheat in Soy and Ginger Sauce” is quite similar; It uses tamari soy sauce and grated gingerroot, and kombu is used in making Seawheat, a clam alternative. A photo on the inside back dust jacket shows Nina and Michael Shandler.

Talk with Michael Shandler in Amherst, Massachusetts. 1992. Jan. 14. He and Nina became vegetarians in 1969. They were first introduced to wheat gluten in about 1970; at that time they were served gluten steaks by a friend, Jayanti Peterson, in Santa Cruz, California. At the time their book was published, they were probably not aware of “seitan.” They did not know of any other books on gluten when they were writing their book—which is why no gluten books are listed in their bibliography. The book sold about 2,000 copies in hardcover and 5,000 to 6,000 in quality paperback; it went out of print 6-7 years ago. They have had many requests for the book since it went out of print. He is an organization development consultant and Nina is a child psychologist. Food is their hobby. Their best-selling book is *The Complete Guide and Cookbook for Raising your Child as a Vegetarian* which has sold over 50,000 copies (Shocken & Ballantine). Address: Amherst, Massachusetts. Phone: 413-549-1671.

2304. Su, Yuan-Chi. 1980. Traditional fermented foods in Taiwan. In: Proceedings of the Oriental Fermented Foods. Food Industry Research and Development Institute, P.O. Box 246, Hsinchu, (300) Taiwan. iv + 229 p. See p. 15-30. Held 10-14 Dec. 1979 in Taipei, Taiwan. 8 tables. 9 figs.
 • **Summary:** Contents: Introduction. Bean sauce: Soy sauce, black bean sauce (in-yu [inyu]), in-si or tou-si (made from the dried mash of black bean sauce). Fermented jam: Tou-chiang (Taiwanese miso), tou-pan-chiang (made from sprouted broad beans; soy is not used), tien-mien-chiang (made with wheat flour; no soy). Fermented tou-fu: Tou-fu-ju (also named sufu, soybean cheese, or Chinese cheese), chou-tou-fu (also named fetid bean curd). Anka (also called ang-kak or red koji, made by growing a *Monascus* mold on rice). Discussion. Color photos are given of *in-si* (*tou-si*) and the pehtze of fermented tofu overgrown with *Mucor* mold species. A flowchart is given describing the production of most of these foods.

In 1978 there were 433 soy sauce plants in Taiwan (39 produced a class-A product, and 12 produced class B; most were unclassified) with an annual production capacity of 160,000 kiloliters. This is equivalent to an annual consumption of 9 liters per capita. The 8 largest manufacturers control 45% of the Taiwanese market. 25% of the soy sauce is 100% fermented, 5% is HVP chemical soy sauce, and 70% is a blend of the two. “Originally, whole soybean was used as the protein source. Now it is replaced by defatted soybean [meal], and the whole soybean is used only when high quality soy sauce is desired. The Chinese

National Standards (CNS) for soy sauce were established in 1954 and have since been revised several times. On 24 Oct. 1971 the CNS 423 was established. Grade A soy sauce must have the following composition in gm/100 ml: Pure solid matter excluding NaCl > 12, total nitrogen > 1.3, formol nitrogen > 0.56, and pH from 4.5 to 5.3. The corresponding figures for grade B are: Pure solid matter excluding NaCl > 9, total nitrogen > 0.9, formol nitrogen > 0.40, and pH from 4.5 to 5.3.

In-yu or black bean sauce is undoubtedly Taiwan’s the oldest prepared condiment. In-yu is different from soy sauce in that it is produced from black [soy] beans and its flavor becomes stronger as it is cooked. Therefore it is used by many families in frying and cooking meat. Currently, in south Taiwan, the market for in-yu is about 30% that of soy sauce.

Production of Taiwanese miso (tou-chiang) is currently 11,000 tons. Per capita consumption is decreasing.

Fermented tofu (Tofu-fu-ju) is produced both commercially and domestically. The annual production is about 10,000 tons while weekly consumption is about 12 gm per capita. Address: Dep. of Agricultural Chemistry, National Taiwan Univ., Taipei, Taiwan.

2305. Sung, Ying-sing. 1980. *T’ien Kung K’ai Wu*: Exploitation of the work of nature: Chinese agriculture and technology in the XVII century. Taipei, Taiwan: China Academy. xii + 488 p. Illust. Index. 22 cm. [Eng]
 • **Summary:** The *T’ien Kung K’ai Wu*, by Sung Ying-hsing (pinyin: *Tiangong Kaiwu*, by Song Yingxing) was published in 1637. This English-language translation of the 17th century work on Chinese technology contains 18 chapters, 166 superb illustrations, and extensive information on soybeans. Each chapter was translated by a person specializing in that subject matter.

2306. Tsai, Wei-Chong; Wong, C.M. 1980. Proceedings of the Oriental fermented foods. Food Industry Research and Development Institute, P.O. Box 246, Hsinchu, (300) Taiwan. iv + 229 p. Held 10-14 Dec. 1979 in Taipei, Taiwan. Illust. No index. 26 cm.

• **Summary:** “The symposium was jointly sponsored by ASPAC Food and Fertilizer Technology Center (FFTC), President Enterprises Corporation, and Food Industry Research and Development Institute (FIRDI). The information contained in this book is a blend of theoretical considerations and practical applications on the Oriental food fermentations. In addition to the above, it includes some studies of microbiology and biochemistry relevant to the discipline, which have hardly caught due attention before.

The welcoming address is by Paul C. Ma, director of FIRDI. Opening remarks are given by Carson K.C. Wu (director of the Food and Fertilizer Technology Center), and

by Chin-yuan Kao (president of President Enterprises Corporation, who generously paid for the printing of the proceedings, and who notes that Taiwanese consume 9.3 liters of soy sauce per capita). Address: 1. FIRDI; 2. FFTC.

2307. Tsuji, Shizuo; Sutherland, Mary. 1980. Japanese cooking: A simple art. New York and Tokyo: Kodansha International. 518 p. Introduction by M.F.K. Fisher. Illust. (510 line drawings by Yoshito Suzuki. 16 color pages, mostly photos). Index. 27 cm.

• **Summary:** This is a beautiful and informative book by a great Japanese chef, though the awkward English terminology often sounds like “Japlish.” The illustrations are very nicely done, but the artist’s name does not appear in the book. Tsuji is the author of 29 books on gastronomy, travel, and music. His basic thesis is that “like Japanese and poetry, cooking is simply the result of an acute awareness of the seasons, Freshness and naturalness are the *sine qua non* of Japanese cuisine.”

This definitive treatise on Japanese cooking, the most complete and well-thought-out to date, is written by the head of the *Ecole Technique Hoteliere Tsuji*, the technical hotel school in Osaka, Japan. This is the “largest school training professional chefs in Japan,” according to the publisher.

The excellent “Ingredients” section gives detailed descriptions of: Azuki beans (p. 55). including red rice (*sekihan*) and “sweet red-bean paste” (*an*). Bean curd or tofu (p. 56-61) incl. momen tofu (regular; “The type described here as ‘regular’ is known in Japan as *momen*—‘cotton’ tofu... ‘Cotton’ bean curd is the type most commonly used in Japan”), kinu-goshi (silk tofu), yakidôfu (lightly broiled or grilled), atsu-age (thick cakes), aburage (thin deep-fried), ganmodoki (mixed tofu), yuba (soybean milk skin), okara (bean curd pulp or lees). Miso (p. 76-77) incl. shiro-miso, Shinshû-miso, inaka-miso, Hatchô miso, akadashi miso. Soybeans and edamame. Soy sauce (shôyu, p. 90-93) incl. Natural Japanese soy sauce, synthetic soy sauce, Kikkoman, light soy sauce (*usukuchi shôyu*), tamari (“In Japanese cooking tamari is generally used as a dipping sauce or a base for basting sauce such as Yakitori Sauce”). “Dutch traders in Nagasaki in the seventeenth century exported soy sauce to Europe, and it was the secret seasoning served at the court banquets of Louis XIV of France” (sic). Kuzu (p. 93-94). Wheat gluten (p. 98, 60).

Soy-related recipes include: Making soups (p. 151-56). Miso soup (*Miso-shiru*, p. 156-57). Ginger soy sauce (*Shôga-jôyu*, p. 172). Ponzu sauce (p. 172, with soy sauce and tamari). Mustard-vinegar miso sauce (*Karashi-su-miso*, p. 172-73). Dengaku, dengaku miso toppings, and bean curd dengaku (*Tôfu dengaku*) (p. 190-93). Teriyaki (p. 199-202, 370; the meaning in the United States is now different from the original meaning in Japan. Definition and history, homemade teriyaki sauce, teriyaki yellowtail, chicken

teriyaki, steak teriyaki). Egg “tofu” (*Tamago-dôfu*, p. 216). Dressings for aemono (salads, p. 246, incl. white tofu dressing, white miso dressing, red miso dressing). Rice with miso soup and pickles (p. 270-71). Nori-roll sushi (*Nori-maki*, p. 300, with freeze-dried bean curd). Fox noodles (*Kitsune udon*, p. 312). Pickling vegetables (*Tsukemono*, p. 315, 318, with miso). Pureed corn soup (*Tômorokoshi surinagashi-jiru*, p. 347, with miso). Thunder soup (*Kaminari-jiru*, p. 349, with deep-fried tofu). Potatoes simmered in miso (*Jaga-imo miso-ni*, p. 393). Radish with white miso sauce (*Furofuki daikon*, p. 394). Chinese cabbage and deep-fried tofu (*Age-dôfu hakusai-ni*, p. 398). Tortoiseshell tofu (*Tôfu bekkô-ni*, p. 398-99). Fried and simmered freeze-dried tofu (*Kôri-dôfu age-ni*, p. 399-400). Gold purses (*Fukuro*, p. 400, with thin deep-fried bean curd). Deep-fried tofu (*Agedashi-dôfu*, p. 412-13). Green beans with sesame-miso dressing (*Sandomame goma-miso ae*, p. 420). Savory okra (cold) (*Okura wasabi-joyu*, p. 420-21). Tangy white salad (*Shirazu-ae*, p. 421-22). “River Bank” oyster stew (*Kaki dote-nabe*, p. 433-34, with miso). Simmering tofu (*yudôfu*, p. 436-37). Soybeans in the pod (*Edamame*, p. 471-72).

Murasaki (p. 287): Japanese love *sushi* so much that they have developed a special aficionado’s vocabulary. “At a *sushi* restaurant, you do not ask for soy sauce as *shôyu*, but, rather, as ‘purple,’ or *murasaki*. Every shop has its own house sauce, made by reducing soy sauce or thicker *tamari* sauce over heat with *saké*, *mirin*, bonito flakes and so on.” Since the resulting sauce is darker than regular soy sauce, the name *murasaki* seems appropriate.

Concerning azuki beans (red beans; characters small + bean) (p. 55): “This small, red bean is the legume you will most frequently encounter in Japanese cooking besides soybeans (*daizu*). It is used in the cooking of many countries, so it is stocked in most supermarkets throughout the United States. For some historical reason this bean is commonly spelled *adzuki*. This spelling is a Victorian romanization; phonetically, *azuki* is correct.

“These beans are steamed with glutinous rice on special occasions to make the festive red rice (*sekihan*; p. 280). They are more commonly boiled with sugar to make sweet red-bean paste (*an*), which forms the base of a large percentage of Japanese sweet confections (see p. 327). *An* is made in two textures: smooth puree (*koshi-an*) and ‘chunky,’ with beans partially crushed (*tsubushi-an*). If there is no time to make *an* from scratch, ready-made *an* is available canned and stocked in most Japanese food stores.”

Note: This is the earliest English-language document seen (March 2006) that uses the term “sweet red-bean paste” to refer to sweet azuki bean paste [*azuki-an*], or the term “smooth puree” to refer to *koshi-an*, or the term “chunky” to refer to *tsubushi-an*. Address: Tsuji Professional Culinary Inst., Osaka, Japan.

2308. Wang, H.L. 1980. Research on Oriental fermented foods at the Northern Regional Research Center. In: Proceedings of the Oriental Fermented Foods. Food Industry Research and Development Institute, P.O. Box 246, Hsinchu, (300) Taiwan. iv + 229 p. See p. 1-14. Held 10-14 Dec. 1979 in Taipei, Taiwan. 6 tables. [21 ref]

• **Summary:** Contents: Introduction. Objectives and approaches. Introduction of pure culture strains. Enzymes produced by the molds. New compounds formed by the molds. Nutritional value of fermented foods. Conclusion.

“Not until the late 1950s were studies on Oriental food fermentation begun in the United States at the Northern Regional Research Center in Illinois and the Agricultural Experiment Station in Geneva, New York. The United States Department of Agriculture under Public Law 480, has also provided grants to foreign countries for research on fermented soybean foods. These arrangements have broadened our knowledge of the size and scope of Oriental food fermentations.

“The original objective of our Center’s research with respect to Oriental food fermentations was to solve the problems involved in the use of U.S. soybeans by the Japanese *miso* industry. The results of that research project stimulated our interest in Oriental food fermentations, especially those based on soybeans.” Address: NRRC, Peoria, Illinois.

2309. Yu, Ju-Hyun; Pyun, Yu Ryang. 1980. Korean fermented foods. In: Proceedings of the Oriental Fermented Foods. Food Industry Research and Development Institute, P.O. Box 246, Hsinchu, (300) Taiwan. iv + 229 p. See p. 46-57. Held 10-14 Dec. 1979 in Taipei, Taiwan. 7 tables. 4 figs.

• **Summary:** Fermented foods in Korea can be classified into alcoholic beverages, seasonings, kimchies (fermented vegetables), fermented milk (liquid type), and cakes and bread. Traditional Korean fermented foods made with soybeans are all seasonings: Ganjang is soy sauce, doenjang is soybean paste, and gochoojang is a red pepper paste containing rice and/or barley and soybeans. Sikcho (vinegar) is the only traditional Korean seasoning that contains no soybeans.

In Korea, production of soy sauce (ganjang) has increased from 93,355 kiloliters (kl) in 1975 to 97,830 kl in 1978. Production of soybean paste (doenjang, Korean miso) has decreased from 67,227 tonnes (metric tons) in 1975 to 51,237 tonnes in 1978. Production of red pepper paste (gochoojang) has increased from 29,000 tonnes in 1975 to 33,525 tonnes in 1978. A detailed description is given of the production process, and nutritional composition of gochoojang. The production of monosodium glutamate by fermentation was begun in 1963 by Miwon Co. and Chiel Sugar Co. Address: Dep. of Food Engineering, Yonsei Univ., Seoul, Korea.

2310. **Product Name:** [Soy sauce, and miso].

Manufacturer’s Name: Chinese-run company.

Manufacturer’s Address: Quevedo, Ecuador.

Date of Introduction: 1980?

How Stored: Shelf stable.

New Product–Documentation: Letters from Richard Jennings in Ecuador. 1981. Feb. 14 and March 8. There is a Chinese-run soy sauce and miso factory in Quevedo, in the lowlands of Ecuador, where there is a constant warm climate for fermentation. They make a kind of miso, but with some sugar and spices.

2311. Root, Waverley. 1981. A cordial bow to the byproducts of the soybean. *Los Angeles Times*. Jan. 15. p. J42.

• **Summary:** This article is indebted to: Simonds, Nina. 1979. “Chinese cuisine: Bean curd.” *Gourmet*. Sept. p. 28-29, 84-91.

The soybean, which offers extraordinary versatility as a human food, can be transformed into soybean milk, “the soybean milk skin [yuba] derived from the milk, the bean sticks [bamboo yuba] made from the milk skin, the also edible sediment given off by the milk [okara], untreated bean curd [regular tofu and perhaps silken tofu], pressed bean curd which produces bean curd noodles [pressed tofu noodles], more tightly compressed bean curd cakes, and frozen-and-thawed bean curd [dried frozen tofu].”

In the process of making “pressed bean curd, another soybean food is created—bean curd skin [*pai yeh*, pressed tofu sheets], which should not be confused with soybean milk skin [yuba]. Dried bean curd skin,” which needs no refrigeration and is often stuffed, for example with chopped meat, is sold by weight by Chinese specialty shops throughout the world; five or six sheets weigh one ounce.

“There is a whole family of foods made from fermented bean curd” [fermented tofu]. Bean curd can be fermented in various ways. Bean curd loaves, for example, can be stored for the winter in a cool dark place; micro-organisms from the air cause fermentation. “The loaves acquire a fungoid coating, which has to be scraped off, and as far as I know is not used for food,…” Fermented bean curd, which has been called “soybean cheese,” is easier to digest than unfermented bean curd. Bean curd can also be marinated in rice wine, flavored with spices, and then allowed to ferment. A most unusual type of fermented tofu is stinky bean curd (*sh’ou tou fu*), a favorite Chinese snack. In Taipei, there are many street vendors who ply the streets with their portable deep fryers. This fermented tofu is usually deep-fried and usually eaten with one’s choice of soy sauce, vinegar, mashed garlic, and chili paste.

Other fermented foods include miso, natto, hamanatto (which is of Korean origin), tempeh (of Indonesian origin), and shoyu (Soybean sauce, soy sauce).

“It is said that the best grades of soy sauce can take as much as six to seven years of aging to reach perfection, and that the making of a superb soy sauce requires ‘as much art in its preparation as good French wines.’”

Flavorings are added to some Chinese soy sauce “various herbs, especially citronella; spices (ginger); aromatic vegetables (onions); and not only fermented fish, but even fermented chicken meat. To produce three liters (3.1 quarts) of sauce requires one kilogram (2.2 pounds) of beans.

“Fukien has the reputation of producing the best soy bean sauce in China and consequently stews many foods in it, giving them a color which has caused the culinary techniques of this region to be called ‘red cooking.’”

Soybean sauce is “often an important ingredient in many more complicated sauces—for instance Hoisin sauce in China and Worcestershire sauce in England.”

2312. Hoang, Van Chi. 1981. Re: Vietnamese soy sauce. Questions answered on Soyfoods Center letterhead (dated 18 Jan. 1981) and returned to SC. 1 p.

• **Summary:** His family name is Hoang and his given names are Van Chi (he writes in the three characters).

An early Vietnamese writer about soyfoods was Bui Quang Chieu. He was a man; his family name was Bui and his given names were Quang Chieu. He was a French educated politician and journalist. He wrote in French because he could not write in Vietnamese. “His writing about Tuong is certainly not interesting, although I do not have his article. He certainly repeated something previously written by some French scientist.

“There are two types of tuong. (1) The Tuong Ban, produced in Ban village, is like the Chinese Chiang (pronounced “jiang”) in texture. (2) The Tuong Cu Da, made in Cu Da village, is ground smooth [but not filtered]. That is why I call my product “Tuong Cu Da.” Note: Tuong Cu Da. is a uniquely Vietnamese product is that it is not filtered, but ground. Chinese jiang is not filtered and not ground, so it has a soft, chunky consistency like applesauce.

Ruou dau nanh is called “soy alcohol.” Most liquor in Vietnam is made from sweet [glutinous] rice; it is like Japanese sake. But the Vietnamese Ruou is distilled and, as such, is very strong, up to 100 proof. Some people in Central Vietnam make it from a mixture of soybeans and rice.

The jars or containers used to make Tuong in Vietnam have no fixed capacity, but they are usually are 15 to 20 gallons in capacity. They come in two shapes: One is shaped like a vertical cylinder, and the other bulges at the top with a smaller mouth, as used by the Chinese to make jiang. These jars are kept in the courtyard and covered with a conical woven bamboo cap, to keep out the rain while permitting aeration. Address: Bowie, Maryland.

2313. Belleme, John. 1981. The master of hoops. *East West Journal*. Jan. p. 60-65.

• **Summary:** Mr. Arai (*Arai-san*) of Japan is a master cooper or maker of barrels and vats (*oke-ya-san*). Standing only 4 feet 8 inches tall, he is also a local legend, herbal doctor, and, folk singer, and the best talker in the community. “In the seven months my wife Jan and I spent studying fermented foods in the village of Shimo Isano, north of Tokyo, we met many of these hardy oldsters. However Arai-san is exceptional; his skill, strength, and wittiness are rare at any age.” The Bellemes’ miso teacher was Mr. Onozaki. Tells how Mr. Arai makes traditional wooden Japanese barrels, and gives a personality sketch. “He does not experience his life as a fleeting moment in time but rather as part of an ancestral stream flowing out of ancient history.

Large photos show: 1. Jan Belleme and Mr. Arai (full page). 2. Mr. Arai collecting and splitting large pieces of bamboo, then braiding them into the large hoops that hold together a wooden vat. 3. Mr. Arai making a small pickle barrel. 4. Then drinking saké after work.

2314. **Product Name:** Lima Barley Koji.

Manufacturer’s Name: Chico-San, Inc. (Importer). Made in Japan.

Manufacturer’s Address: P.O. Box 1004, Chico, CA 95927.

Date of Introduction: 1981. January.

Ingredients: Dried fermented barley with koji (*Aspergillus oryzae*).

Wt/Vol., Packaging, Price: 17.6 oz (500 gm) plastic bag.

How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Chico-San Products. 1981. Jan. p. 13. “The koji used to make miso.” Label for Barley Rice Koji for Making Miso. 1984. Collected by Lorenz Schaller of California. 4 by 5 inches. Orange and brown on beige. “Imported from Ohsawa Japan by Chico-San.”

2315. Chico-San, Inc. 1981. Chico-San products: A catalog of unique natural foods. P.O. Box 1004, Chico, CA 95927. 28 p. Revised Jan. 1981.

• **Summary:** Contents: A message from the president, J. Robert Kennedy. Chico-San rice products: Rice Cakes (6 varieties; plain, millet, or buckwheat, each salted or unsalted), Carob Crunch (carob-coated rice cakes in plain or mint flavors), Golden Rice Nuggets, Yinnies candies (Taffy made from rice and barley; Caramel made from rice, barley, oat powder, raisins, almonds, sesame oil, coconut, rice bran, lecithin, natural vanilla, and agar agar).

Yinnies brand Rice Syrup (“A pure, natural sweetener made from rice, water, and barley malt...”). “How Yinnies brand Rice Syrup is made: Chico-San’s process involves the conversion of the natural starches in the rice into complex sugars. Extended low temperature cooking allows the enzymes from the malted grains to create a fermentation

which occurs in a liquid mash. After an optimum period of fermentation, the process is halted and liquid squeezed from the mash. This liquid is then vacuum cooked at low temperature, bringing the syrup to the proper consistency.” Yinnies brand rice syrup and refined sugar comparison. This rice syrup is high in maltose.

How Chico-San guarantees Oriental-type organically-grown brown rice (describes in detail how the rice is grown in California). Chico-San whole grains, seeds and beans (Incl. organically-grown brown rice, sweet brown rice, sesame seeds, black soybeans, and azuki beans). Chico-San condiments: Lima soy sauce, soybean puree (miso, in 3 types, mugi, kome, or hacho), barley koji, kuzu, malt vinegar malt vinegar, salt plums, nigari (for tofu making), sesame oil (light or dark), tekka. Chico-San imported seaweeds: Hijiki, kombu, wakame, nori, sea vegetable gelatin (kanten). Herb teas and other products. Chico-San cookbooks. Chico-San special recipes—including recipes for Sesame miso spread, Black soy beans, Azuki beans, and Wakame miso soup. Address: Chico, California.

2316. Eden Foods. 1981. Catalog 1981. 701 Tecumseh Rd., Clinton, MI 49236. 69 p.

• **Summary:** On the cover is a stylized 2-story house (Cliff and Fran Adler’s home) in the snow. This is the earliest catalog seen after the major Eden fire in Nov. 1979. The cover design is by Fran Adler. Prices are given in the catalog. Address: Ann Arbor, Michigan.

2317. Phillip, Janice. 1981. Stockpiling for a foodless future: The serious business of putting food by. *East West Journal*. Jan. p. 39-41. [1 ref]

• **Summary:** Concerned with the nuclear arms race, a California commune recently ordered two tons of Hatcho miso from Westbrae Natural Foods in Berkeley. “When the salesperson expressed astonishment at the size of the order, the customer explained that the commune decided to lay in a supply after reading in *The Book of Miso* (by Shurtleff & Aoyagi) that miso may protect against radiation poisoning.”

A portrait photo shows Frank Ford, of Deaf Smith County, Texas; he leads Arrowhead Mills’ production of 200,000 pounds of storage food weekly. Address: California.

2318. Nakano, Masahiro. 1981. Shio to miso [Salt and miso. I-IV.]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 323. p. 4-8. Jan.; No. 324. p. 2-8. Feb.; No. 325. p. 2-9. March; No. 326. p. 2-11. April. [Jap] Address: Zenkoku Miso Gijutsukai Rijicho.

2319. Shurtleff, William; Aoyagi, Akiko. 1981. Que es el miso? Traducido por Corina Gutman [What is miso? Translated into Spanish by Corina Gutman]. Soyfoods

Center, P.O. Box 234, Lafayette, CA 94549 USA. 4 p. Jan. [3 ref. Spa]

• **Summary:** Contents: Introduction. Delightfully varied; highly versatile. A nutritional treasure trove. The varieties of miso (including a table). The preparation of miso. Traditional natural miso and quick modern miso. A brief history of miso. Buying, storing, and using miso. Miso in Japan. Traditional Japanese miso shops and modern factories. Making miso at home. Favorite miso recipes. Address: Authors: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2320. Soy Plant Co-op Inc. (The). 1981. Price list effective 1/28/81 [28 Jan. 1981]. Ann Arbor, Michigan. 1 p. 28 cm.

• **Summary:** This hand-lettered sheet contains four columns: Manufacturer, product, unit price, and case price. The Soy Plant is manufacturer of: Tofu, plain soy milk, flavored soy milk, tempeh, miso garlic dressing, and Soyanaise (soy mayo). Other manufacturers are Sunshower (fruit juices and butters), Hills Brothers (apple cider), Toper (pickles), Westbrae (miso—3 types), and Canadian Soya (Soya Lecithin Spread, non-hydrogenated). Address: 711 Airport Blvd., Suite #1, Ann Arbor, Michigan 48104. Phone: 313-663-TOFU (663-8638).

2321. Wang, H.L.; Hesselstine, C.W. 1981. Use of microbial cultures: Legume and cereal products. *Food Technology* 35(1):79-83. Jan. [38 ref]

• **Summary:** Contents: Introduction. Use of nontoxin-producing cultures. Safety of fermented foods: Several factors contribute to their safety: Soaking and cooking, salting, acid formation, antibiotic production, alcohol production, low surface moisture, decrease of aflatoxin by *Rhizopus* and *Neurospora*. Shelf life of fermented foods. Nutritive value of fermented foods: Complementary effect of mixed proteins, protein efficiency ratio and digestibility, vitamins. Future of fermented legume-cereal foods.

The following fermented soy-related foods are described briefly, including names, area of origin, organisms used, substrate, and nature and use: Soy sauce (chiang-yu, shoyu, toyo, kanjang, kecap, see-ieu). Miso (chiang, doenjang, soybean paste, tauco). Fermented bean (hamanatto, tou-shih, tao-si). Sufu (fu-ru, fu-ju, tou-fu-ju, bean cake, Chinese cheese). Tempeh (tempe kedelee). Natto. Ontjom (onchom). Address: NRRRC, Peoria, Illinois.

2322. Elwell, Christian. 1981. Re: Ohio Miso Company, now owned by the Elwell family, has been renamed South River Miso Co. Letter to William Shurtleff at Soyfoods Center, Feb. 12. 1 p. Handwritten, with signature on letterhead.

• **Summary:** “Dear Bill,

“Please find enclosed a copy of two fliers we have sent out to our customers. The dated inventory notice I have just

sent to our wholesale customers. The other sheet, announcing our move to Conway, Massachusetts, as the South River Miso Co., has been sent out to old customers of Ohio Miso in December, 1980, and to answer enquiries as they come in.

"I am making design plans for our building at present. We plan to be in production here in the fall of 1981.

"I am particularly pleased with the two year barley miso this year, which Thom made in Ohio in spring, 1979. Upon sampling this miso, Michio Kushi said it was of a quality that he would recommend it to patients and for people using miso in healing through macrobiotics. One of our aims is to be able to provide a steady supply of this and 3 year barley miso of consistent quality. I am sending along a sample to you under separate cover.

"With best wishes, Christian Elwell."

One leaflet/flier, handwritten on tan paper and titled "Dear friends, old and new," begins: The Ohio Miso Company has changed ownership. As of November, 1980, the Elwell family has purchased... The other lists miso varieties, prices, and inventory. Address: South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

2323. Sripathomswat, Nongnuch; Thasnakorn, Prayad. 1981. Survey of aflatoxin-producing fungi in certain fermented foods and beverages in Thailand. *Mycopathologia* 73(2):83-88. Feb. 13. [25 ref]

• **Summary:** Aflatoxin-producing fungi (four strains of the genus *Aspergillus*) were found in seven Thai foods and beverages, including soybean sauce [sic, miso] (*taotjo*), soy sauce (shoyu), peanut butter, and fermented rice (*kaomak*). Large amounts of aflatoxin were found on only the latter two products—both of which contain no soy. Address: Dep. of Microbiology, Faculty of Medicine, Siriraj Hospital, Bangkok 7, Thailand.

2324. Jennings, Richard. 1981. Re: Use of soybeans in Ecuador. Letter to William Shurtleff at Soyfoods Center, Feb. 14. 1 p. Typed, with signature on letterhead. [Eng]

• **Summary:** "The most popular use for soya in Ecuador is solvent extracted oil, with the presscake being fed to chickens. As to machica (máchica), this is made with frijol tumbre (black-eyed peas = cowpeas) which are grown in the coastal areas and are somewhat similar in shape and size to soya. Mehica (Méhica) is made in the Sierra, and while the black-eyed peas are used, it is usually made with maize/corn or barley (cebada).

"The other use for soya is at the Chinese-run soy sauce and miso factory in Quevedo, in the lowlands where there is a constant warm climate for fermentation. They make a kind of miso but with some sugar and spices. When I visited the factory, I was not enough in the owner's confidence to ask about specifics, but I saw tangerine peels being dried, and

also tasted anise and maybe cinnamon. The recipe on the jar recommends using their product for cooking pig and turkey. The people there also make an edible soy sauce. Ecuadorian soy sauce is for the most part horrible, consisting of a lot of burnt sugar and very little soy. I would with some confidence rank it as the worst in the world. It is used for *chaulafan*, which is the name here for a fried rice dish, and is preferred because it is thick and dark, and turns the rice a brown color. Anyway the Chinese in Quevedo make this petroleum-like glop, but also make an edible normal soy sauce which I am distributing along with the miso until I can get it together to make a better product.

"There are few Chinese and Japanese making tofu at home, and there is one restaurant that claims to sell about 40 lbs daily, so a friend tells me. No soymilk that I know of." Address: Casilla 252A, Quito, Ecuador. Phone: 529-679.

2325. Hesseltine, C.W. 1981. Aflatoxins in soyfoods (Interview). *SoyaScan Notes*. Feb. 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Concerning the 1969 *Time* magazine article on aflatoxins in homemade miso and soy sauce in Korea—There is a lot of incorrect information in the literature based on a problem with determining aflatoxins, since not all things that fluoresce are aflatoxins. A test for fluorescence needs to be followed by a chemical test. He found that one-third to one-half of all oats sampled in the USA contained fluorescent material that looked like aflatoxin—but was not. The oats were fed to animals and no problems resulted.

A study in Japan showed that when homemade miso was properly inoculated, it contained no aflatoxins, but when inoculated with natural spores, it did contain some aflatoxins. He has never seen any figures on the aflatoxin content of the latter miso. He has seen no evidence to indicate that there are problems with aflatoxins in naturally inoculated homemade misos. Good studies conducted in Japan have found aflatoxins in homemade miso but they were found only in a few samples and the levels were so low that there was no problem. No aflatoxins have ever been found in commercial misos as far as he knows. In short, he feels there is no risk in consuming any type of miso.

Dr. Hesseltine is now on a low-sodium diet and has therefore started eating a lot of tofu. In addition, he and Dr. Wang are conducting an interesting study on microbial spoilage of tofu. Address: NRRC, Peoria, Illinois.

2326. Chu, Yung-shung. 1981. Soybean protein food in China. *J. of the American Oil Chemists' Soc.* 58(2):96A, 98A, 100A. Feb. Reprinted in APCC Quarterly, 30 June 1981, p. 23-27.

• **Summary:** Contents: Abstract. Methods of preparation: Bean curd (tu fu), bean curd derivatives (tough bean curd, smoked tough bean curd, dried soybean sheets, fried bean

curd, vegetable chicken), fermented bean curd (fu ru), dried bean milk cream (fu tsu [bamboo yuba]).

For 4,000 years soybean have been one of the main crops cultivated in China. The history of extracting protein to prepare tofu is about 1,000 years old. The soybean was important not only as a food but also as a seasoning. The earliest fermented soybean products were dou-jiang (soybean ch'iang) and dou-chi [soy nuggets]. The preparation of these two products was recorded briefly in *On Medical Emergency Treatment* written by Si Yu during the Western Han Dynasty (100 B.C.). [Note: This is the *Chi chiu p'ien* by Shih Yu.] Later, these procedures were described in detail in the *People's Agricultural Calendar* written by Cui-Zi during the Han Dynasty (200 A.D.). Illustrations of techniques appeared in 600 A.D. in special chapters of *The Principal Methodology of Economics*, by Jia Si-Yi.

According to historical literature of the Min [Ming] and Qing [Ch'ing] Dynasties, the preparation of bean curd [tofu] was first recorded in Han Zi, written by Liu An, King of Huai Nan (179-122 B.C.) In the book of Qin-Yi, Tao Gu (907-960 A.D.) said that bean curd was a common food in the market of the south Huai district.

Fu ru is the fermented form of bean curd. The earliest record of this is in the book called *Night Dialogue Under the Shade*, written by Li Ri-huo (1636-1661). He said that fu ru was prepared between summer and autumn in the Qi Men district and briefly described the procedure. In a famous book on Chinese herbal medicine, *Compendium of Materia Medica*, the author, Li Shizen (1518-1593), describes the preparation technique in detail.

Later, these procedures were described in detail in the *People's Agricultural Calendar* written by Cui-Zi during the Han Dynasty (200 A.D.). Illustrations of techniques appeared in 600 A.D. in special chapters of *The Principal Methodology of Economics*, by Jia Si-Yi. Address: Oil and Fat Research Inst., Shaanxi, China.

2327. Product Name: Honey-Carob Soy Dream Frozen Dessert.

Manufacturer's Name: Joy of Soy.

Manufacturer's Address: 510 Kasota Ave., Minneapolis, MN 55414.

Date of Introduction: 1981. February.

Ingredients: Filtered water, honey, carob, tahini, organic soybeans, unrefined sesame oil, miso.

Wt/Vol., Packaging, Price: Quarts.

How Stored: Frozen.

New Product-Documentation: Leviton. 1981. Soyfoods. Winter. p. 63.

2328. *Soyfoods*. 1981. Soyfoods showcase 1980 [Third Annual Soycrafters Association conference at the University of Illinois is a big success]. 1(4):6. Winter.

• **Summary:** The conference, titled *Soyfoods Showcase* under the direction of Richard Leviton, was convened at the University of Illinois at Urbana on 9-13 July 1980. Over 270 people attended, including representatives for 10 other nations, in addition to 15 Third World students already on campus for the INTSOY summer training program. Representatives of a number of large American food companies also attended, including Kraft, Beatrice Foods, General Foods, and General Nutrition.

"In addition to its rigorous intellectual format, *Soyfoods Showcase* featured 12 vegetarian-soyfoods meals prepared by Small Planet Catering of Chicago and Catering Plus of Champaign. Buffet meals included tofu lasagna, tofu spread in pita bread, tofu enchiladas, tofu 'egg salad' sandwiches, tempeh 'sloppy joes,' barbecued tofu in Chinese stir fry, miso paté, Indonesian gado-gado with tempeh, spinach tofu quiche, and tofu cheesecake." A photo shows Akiko Aoyagi teaching a cooking class.

2329. Stunkard, Jamie. 1981. Soymilk ice cream: The vegetarian's dream. *Soyfoods* 1(4):64. Winter.

• **Summary:** Describes the key components of the "soymilk ice cream" developed by Joy of Soy. The company has "just started marketing an orange soy ice using orange concentrate and orange oil." Gives a commercial scale recipe for Carob-Honey Soy Dream (soymilk ice cream): 5 gallons soymilk (7-8% solids), 10 cups honey, 1.5 lbs. carob powder, 1.5 cups tahini, 1.5 cup sesame oil, 2 tablespoons miso, 2 tablespoons cinnamon. Address: Co-proprietor, Joy of Soy, Minneapolis, Minnesota.

2330. **Product Name:** VFP Miso.

Manufacturer's Name: Victor Food Products, Ltd.

Manufacturer's Address: 102 Hymus Rd., Scarborough, ONT, MIL 2C9, Canada. Phone: 416-752-0161.

Date of Introduction: 1981. February.

New Product-Documentation: Ad in Chimo. 1981. Feb. p. 15.

2331. O'Connell, Jean. 1981. First cousins in Greenfield [Massachusetts]: Tempeh follows tofu to market. *Morning Union (The) (Springfield, Massachusetts)*. March 18. p. 25-26.

• **Summary:** A few nights ago the New England Soy Dairy organized a dinner meeting in Greenfield for the members of the Northeast Chapter of the Institute of Food Technologists. The meal included cottage cheese made without milk and lasagna made without meat. "Fairly tasty, but hardly exciting." But the dinner menu wasn't the point. Rather the "event served to point out that soy is coming of age here in the Connecticut Valley." More people are including tofu in their cooking, and tofu is now available in the lunch program of the Springfield public schools. "Soy is a good, cheap source of protein and it's receiving more

attention as people scramble to beat, or at least meet inflation.”

A little tofu shop named Laughing Grasshopper opened in 1976 in Greenfield. It was the forerunner of the New England Soy Dairy which is now the third or fourth largest tofu maker in the USA. Eighteen months ago Michael Cohen, one of the four partners, left the Soy Dairy to establish his own soy business, the Tempeh Works, which is also located in Greenfield. Cohen's shop now produces an average of 4,000 lb/week of tempeh. Photos show: (1) Michael Cohen putting soybeans into a centrifugal extractor for removal of the water before adding tempeh culture. (2) Skat McPherson examining finished cakes of tempeh on a rack at the Tempeh Works.

“Another chapter in the soy story in the Connecticut Valley is expected to begin in the fall of this year with the opening of the South River Miso Company in Conway [Massachusetts]. Christian Elwell and his family are moving the company here from Ohio.

“Miso, even less known than tempeh, is a fermented soybean puree made with water and barley or rice. It has a long fermentation period and is used for such things as soup stock, according to Elwell who attended the Soy Dairy dinner in Greenfield.

“There are only three miso companies in the United States, one on the West Coast, one in North Carolina [American Miso Co.] and the one which is coming to Conway, it was noted by Richard Leviton at the Greenfield meeting.” Leviton added that he and others in the soy industry are heartened that a few farmers in the Connecticut Valley are trying to grow soybeans, since the nearest source is now about 1,000 miles away. Contains a recipe for “Peanutty Soy,” peanut butter extended with tofu, from Madeline Fox, marketing director and recipe developer at the New England Soy Dairy.

Note: This is the earliest document seen (Nov. 1999) that mentions the South River Miso Company—which began selling miso under its name in Oct. 1982. Address: Union Food and Fashion Editor.

2332. Hesseltine, C.W. 1981. Work with soyfoods, Dr. Charles Thom, the NRRC culture collection, and the NRRC's main contributions related to fermented foods (Interview). Conducted by William Shurtleff of Soyfoods Center, March 20. 1 p. transcript.

• **Summary:** Contributions: (1) The development of solid-substrate fermentation, an indirect spinoff of work with foods, is now widely used in the West. Originally it was used for the production of enzymes, and later for experimental production of aflatoxins from *Aspergillus species*. (2) The introduction of pure culture yeasts in the miso fermentation process in place of the addition of lots of old miso. This is now completely accepted and widely used;

(3) The use of perforated plastic bags to make tempeh. Address: Chief, Fermentation Lab., NRRC, Peoria, Illinois.

2333. **Product Name:** Instant Miso Soup (Miso-Cup) [Regular, or With Seaweed].

Manufacturer's Name: Eden Foods, Inc. (Marketer-Distributor: Imported from Japan by Edward & Sons Trading Co.).

Manufacturer's Address: Eden Foods Inc., 701 Tecumseh Rd., Clinton, MI 49236. Phone: (313) 973-9400.

Date of Introduction: 1981. March.

Wt/Vol., Packaging, Price: 4 packets/box.

How Stored: Shelf stable.

New Product–Documentation: Eden Foods Catalog. 1981. Page 18. Eden Foods 1981 Catalog II. “Instant Miso-Cup is a convenient miso soup and seasoning. It is made from Japanese miso dried under low temperatures to retain nutritional content. It is available in two flavors, original golden light and red with seaweed. Contains soybeans, rice, sea salt, onions, parsley. Each box contains 4 packets—order twelve boxes in an attractive display box.” Note: This product was developed and imported by Edward & Sons Trading Co.

2334. Fukushima, D. 1981. Soy proteins for foods centering around soy sauce and tofu. *J. of the American Oil Chemists' Soc.* 58(3):346-54. March. [41 ref]

• **Summary:** Contents: Abstract. Introduction. Soy sauce varieties: Koikuchi, usukuchi, tamari, saishikomi, and shiro shoyu. Soy sauce manufacturing process (for each of the 5 types). Miso. Other fermented products: Tempeh and natto. Tofu and related products: Regular and silken tofu, dried-frozen tofu, deep-fried tofu. Fermented tofu (Sufu). Other soy products: Soy milk, fermented soy milk beverages, yuba.

This paper discusses traditional Oriental soy protein foods which are growing rapidly in popularity in the USA among non-Asian-Americans.

“Generally speaking, soy sauce is divided into two groups: fermented soy sauce and chemical soy sauce. Fermented soy sauce has a long history as a human food, whereas chemical soy sauce has a history of only several decades. In fermented soy sauce, the proteins and carbohydrates contained in the materials are hydrolyzed very slowly under mild conditions below 30°C for over six months, whereas in chemical soy sauce they are hydrolyzed quickly by hydrochloric acid at 80°C for 8-10 hours. Chemical hydrolysis is a cheap and rapid process, but during the hydrolysis, various secondary reactions occur and produce undesirable compounds, e.g. dark humins, furfural, dimethyl sulfide, hydrogen sulfide, levulinic acid and formic acid, which are not present in fermented soy sauce. Furfural, dimethyl sulfide and hydrogen sulfide, which have strong, bad odors in themselves, are derived

from pentose, methionine, and sulfur-containing amino acids respectively. Furthermore, tryptophane, one of the nutritionally important amino acids, is destroyed almost completely. As shown in Figure 1 [two chromatograms], the main organic acid of fermented soy sauce is lactic acid, whereas the main organic acid of chemical soy sauce is formic acid. Levulinic acid, present in chemical soy sauce, does not exist naturally.

“To improve the odors of chemical soy sauce, semichemical soy sauce was devised. It is made by hydrolyzing raw soybeans with a lower concentration of hydrochloric acid (7-8%) as the first step, followed by fermenting the hydrolysate with osmophilic yeasts in the presence of wheat koji.” In Japan, chemical soy sauce is not used as a soy sauce in itself, but as an extender for fermented soy sauce.

Table 1 gives the typical chemical composition (per 100 ml) of the five varieties of traditional soy sauce in Japan, including Bé [Baumé; a measure of the relative density of liquids], sodium (koikuchi is lowest at 17.6%, usukuchi is highest at 19.2%), total nitrogen (koikuchi has 1.55 gm, tamari has 2.55 gm or 65% more), formol nitrogen, reducing sugar, alcohol (koikuchi is 2.2%, by far the highest), pH (ranges from 4.6 to 4.8), and color.

A brief description of each of the five traditional varieties: (1) Koikuchi: This “dark-colored” shoyu is by far the most popular of the five types of fermented soy sauce in Japan, comprising 85% of the total. It is an all-purpose seasoning with a strong aroma, complex flavor, and deep, reddish-brown color. These characteristics are mainly derived from the use of equal amounts of wheat and soybeans in the koji; (2) Usukuchi [light-colored] shoyu is characterized by a lighter, red-brownish color and a milder flavor and aroma. It is used mainly for cooking when one wishes to preserve the original flavor and color of the food itself. As in koikuchi, equal amounts of soybeans and wheat are used in the koji, but the fermentation is done under conditions which prevent the development of a dark color. (3) Tamari shoyu has a higher amino acid content, but it lacks aroma. The koji is made primarily from soybeans with little or no wheat. (4) Saishikomi (twice-fermented) shoyu is made using equal amounts of wheat and soybeans in the koji, but using raw (unpasteurized) soy sauce instead of salt solution, which is mixed with the harvested koji. Saishikomi is characterized by aroma and full-bodied taste. (5) Shiro (clear, or “white”) shoyu is made by using a very high ratio of wheat to soybeans in the koji, and further by fermentation under conditions which prevent dark color development. It is characterized by a very light yellow to tan color, though the amino acid content is very low because of the low soybean content in the koji. Flow sheets show the process for manufacturing koikuchi, usukuchi, and tamari shoyu. Each has three basic parts: Koji making process, brine fermentation process, and refining process.

Concerning soy sauce production and consumption: The total annual production of soy sauce in Japan in 1979 reported by the Japanese Agricultural Standard (JAS) was 1,252,431 kiloliters (kl). In 1979 in Japan, about 70% of the soy sauce products in Japan were purely fermented, 25% contained some semichemical soy sauce, and the remaining 5% contained chemical (HVP) soy sauce. The most recent estimates of annual consumption of soy sauce in the USA are as follows: Fermented soy sauce 17,850 kl; Chemical (HVP) soy sauce 25,500 kl. Within fermented soy sauce, production of koikuchi soy sauce is estimated to be 16,500 kl/year.

In Japan an “instant tofu powder” is actually a spray-dried soy milk. This product was made and introduced by *Nihon Tanpaku Kogyo* (Japan Protein Industry) about 15 years ago (ca. 1966) and was used mainly as a raw material for making regular or silken tofu in order to save time. “Recently, however [1973], the product was placed on the market as an instant powdered tofu [named *Hausu Hontôfu*] by Hausu [House] Foods Co.”

A photo shows D. Fukushima. Address: Kikkoman Foods, Inc., Walworth, Wisconsin 53184.

2335. Haytowitz, D.B.; Marsh, A.C.; Matthews, R.H. 1981. Content of selected nutrients in raw, cooked, and processed legumes. *Food Technology* 35(3):73-74. March. [11 ref] Address: Consumer Nutrition Center, Human Nutrition, Science and Education Administration, USDA, Hyattsville, Maryland 20782 USA.

2336. *Prevention (Emmaus, Pennsylvania)*. 1981. A health food dictionary: Soybeans. March. p. 144-46. Address: Emmaus, Pennsylvania.

2337. Shurtleff, William; Aoyagi, Akiko. 1981. The book of miso: Food for mankind. Revised. New York, NY: Ballantine Books. xx + 618 p. March. Illust. by Akiko Aoyagi Shurtleff. Index. 18 cm. [82 ref]

• **Summary:** Contents: What is miso? Preface. Acknowledgments. Part I. Miso: Savory, High Protein Seasoning. 1. Soybeans, protein and the world food crisis. 2. Miso as a food. 3. The miracle of fermentation. 4. The varieties of miso: Regular Miso: Rice miso (red / aka, light-yellow / shinshu, mellow red / amakuchi akamiso, mellow beige / amakuchi tanshoku, mellow white / shiro koji, sweet red / edo or edo ama-miso, sweet white / Kyoto shiro miso), barley miso (karakuchi mugi, mellow barley / amakuchi mugi), soybean miso / mame miso (miso-dama, Hacho miso, soybean miso / mame miso, tamari miso). Special Miso: Finger lickin’ miso / Namemiso (Kinzanji miso, moromi miso, hishio, namémiso, natto miso, goto miso), sweet simmered miso / nerimiso. Modern Miso: Akadashi miso, dehydrated or freeze-dried miso, low-salt / high-protein miso.

Part II. Cooking with Miso (400 recipes). 5. Getting started. 6. Recipes from East and West. Part III. The Preparation of Miso. 7. Making miso at home and in communities. 8. Japanese farmhouse miso. 9. Traditional and modern miso production. Appendixes: A. A history of chiang, soy nuggets, miso, tamari, and shoyu. B. Other East Asian misos: Chiang, jang, taicho, and tausi. C. The microbiology and chemistry of miso fermentation. D. People and institutions connected with miso. E. Miso additives. F. Miso with seafoods, chicken, and meat. G. Measures, weights, and equivalents. H. So you want to study miso in Japan? Bibliography. Glossary.

Note: This is the earliest English-language document seen (Nov. 2008) that uses the term “soy nuggets” to refer to salted fermented soybeans. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2338. Soycrafters Assoc. of North America; Soyfoods Center. 1981. Estimated soyfoods industry statistics (News release). Sunrise Farm, Heath Rd., Colrain, MA 01340. 1 p. March. Updated in Aug. 1981.

• **Summary:** 1. Number of companies manufacturing tofu, tempeh, miso, soynuts, soy sprouts, soy sauce, secondary soyfoods, soy delis & restaurants, in the USA, Canada, and Latin America. 2. Production statistics for USA and Canada: Raw soybean usage, food production, employees, and retail sales value are given for 4 types of tofu makers (caldrion, steam kettle, pressure cooker, factory), tempeh, soynuts, and soy delis and restaurants. With totals. Actual gathering of statistics was done largely by Soyfoods Center. Address: 1. Richard Leviton, Colrain, Massachusetts; 2. W. Shurtleff, Lafayette, California.

2339. Suzuki, Yasuhira; Tsuchiya, Kunio. 1981. Minami no tōfu, kita no tōfu: Hikyo-Gokanoshō ni tsutawaru “miso-zuke” tōfu o tazunete [Southern tofu, northern tofu: Unexplored regions—A visit to “miso-pickled tofu” that has been handed down for generations in Gokanoshō]. *Daizu Geppo (Soybean Monthly News)*. March. p. 34-45. [Jap]

• **Summary:** Gokanoshō is a village in Kumamoto prefecture. South of it are two smaller villages named Gokimura and Izumimura, as shown on a map. There they make tofu that is pickled in miso.

2340. Hansen, Barbara. 1981. A treasury of Chinese cookery: Culture and history. *Los Angeles Times*. April 9. p. J1.

• **Summary:** This is a review of the Hong Kong and China Gas Company's *Chinese Cookbook*, a treasure for anyone who admires Chinese cookery. This large, beautifully designed book is also rich in culture and history.

A recipe for Braised shin of beef with cloud ears and golden noodles calls for “1 tablespoon light soy sauce... 2 teaspoons yellow bean paste.”

2341. Belleme, John. 1981. The miso-master's apprentice. *East West Journal*. April. p. 51-54.

• **Summary:** Describes how John and Jan Belleme learned to make miso at the Onozaki household in Japan. They were located in an old Japanese farming village 10 miles north of Yaita city [Tochigi prefecture]. They plan to set up a miso-making operation in Rutherfordton, North Carolina. The Onozaki family started making fermented foods on a large scale 200 years ago, at first saké, and later koji (fermented rice). Now the family makes about 120 tons of natural miso each year. Mr. Takamichi Onozaki is the miso master. The process for making the miso is described in detail. Based on a 6½-day weekly cycle, it begins when 1,500 pounds of rice is milled, washed, and soaked overnight. All of the koji is handmade. Onozaki miso is now sold in America at natural food stores or can be purchased in 11-pound boxes from Oak Feed Stores (3030 Grand Avenue, Coconut Grove, Florida 33133).

Photos show: (1) A wedding portrait of the Onozakis in traditional Shinto robes taken 25 years ago. (2) Mrs. Itsuko Onozaki, the miso master's wife, today. (3) The Onozaki's thatch-roofed home, seen from the back hillside. (4) Traditional living room with *kotatsus* (heated tables). (5) Jan chats with Onozaki grandmother, age 78. (6) Mrs. Onozaki and a neighbor wash rice for miso. (7) Koji is transferred from a huge wooden fermentation crib into wooden trays. (8) Jan, Mrs. Onozaki, and a cousin pour hot soybeans into a grinder; they will be extruded to a paste, then blended with koji. (9) John Belleme washes soybeans in a huge pressure cooker. (10) In front of gigantic cedar vats, Mr. Onozaki and John scrape mature koji from koji trays in preparation for making miso. (11) Seated around the *kotatsu*, Onozaki grandmother reads from the family scroll while John listens. John and Jan Belleme. The miso-making process in Japan.

2342. **Product Name:** Wizard Baldour's Hot Stuff [Regular, or Blazing].

Manufacturer's Name: Elf Works, Ltd. Later, American Natural Foods.

Manufacturer's Address: P.O., Box 2321, Chapel Hill, NC 27514.

Date of Introduction: 1981. April.

Ingredients: Apple cider vinegar, deep well water, organic red miso, unfiltered honey, African bird peppers, cayenne peppers, umeboshi plums, natural herbs & spices, arrowroot powder, natural seaweed extract, tarragon.

Wt/Vol., Packaging, Price: 5 fluid oz (147 ml), 10 oz, and 32 oz glass bottle.

How Stored: Shelf stable.

Nutrition: Per 1 tsp.: Calories 4, carbohydrate 1 gm, sodium 43 mg.

New Product–Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239. Label. 1983, dated. 5.5 by 2.5 inches. Red, blue, and yellow on bright orange background. Picture of wizard and “Blazing” dragon. “Hot Stuff is an all purpose, all natural hot sauce that’s really good for ya! Hot Stuff adds sure fire magic to your favorite flavor. Great on chicken, seafood, Mexican food or as a natural barbeque baste use your imagination. Shake well to wake up the dragon!” Reprinted in *Soyfoods Marketing*. Lafayette, CA: Soyfoods Center. Spot in *Natural Foods Merchandiser*. 1984. Feb. p. 113. Ad (full page, color) in *Natural Foods Merchandiser*. 1984. July. Interview with John Troy. 1984. Sept. 26.

Note: This is the earliest record seen (April 2009) concerning the work of John Troy or Elf Works with miso.

2343. Kotsch, Ronald Ernst. 1981. *Georges Ohsawa and the Japanese religious tradition*. PhD thesis, History of Religions, Harvard University, Cambridge, Massachusetts. 360 p. April 1. 28 cm. [75 ref]

• **Summary:** The best history of macrobiotics written up to this time. Full of original, interesting, and often humorous material. Contents: 1. An overview of Japanese religious life. 2. Ishitsuka Sagen and the origins of Macrobiotics. 3. Georges Ohsawa, the early years: 1893-1929. 4. First sojourn in the West: 1929-1935. 5. Return to Japan in Crisis: 1936-1939. 6. The war years: 1940-1945. 7. The post-war years: 1945-1953. 8. The world journey of the penniless samurai: 1953-1966. 9. Ohsawa as a religious thinker. 10. Ohsawa as the Japanese religious tradition. 11. The prophet in his own land and elsewhere. Conclusion. Footnotes. Bibliography. Address: Harvard Univ., Cambridge, Massachusetts.

2344. Soyfoods Center; Soycrafters Assoc. of North America. 1981. *Soyfoods Production in America and the West* (News release). Lafayette, California: New-Age Foods Study Center. 1 p. April. Updated in Sept. 1981 in a neater format.

• **Summary:** A table shows production statistics for 25 types of soyfoods. Number of manufacturers in the USA, Canada, Other West, Total; Tons of raw soybeans/year used by each food. Yield of food from 1 unit weight of soybeans. Wholesale value. Retail value. Number of people employed. Address: P.O. Box 234, Lafayette, California 94549.

2345. **Product Name:** BRT: Brown Rice & Tofu Sandwich (In a Chapati) [Regular, Curry, or Mustard].

Manufacturer’s Name: Wildwood Natural Foods.

Manufacturer’s Address: 135 Bolinas Rd., Fairfax, CA 94930. Phone: 415-459-3919.

Date of Introduction: 1981. April.

Ingredients: Regular 1983: Brown rice, UFO Tofu by Wildwood, alfalfa sprouts, tahini, barley miso, seasonal

vegetables (celery, carrots, zucchini, chard, or parsley), whole grain chapati, lettuce, scallions, tamari, sea salt.

Wt/Vol., Packaging, Price: 11.5 oz.

How Stored: Refrigerated.

New Product–Documentation: Leviton. 1981. *Soyfoods*. Winter. p. 61. “Putting tofu in the lunch boxes of America.”

Leviton 1983. *Soyfoods*. Summer. p. 42-43.

“Wildwood’s sandwich power.” “Dated for 1 day although they stay fresh for 2. Their Brown Rice & Tofu Sandwich accounts for 30% of sandwich sales.” Labels set by Wildwood on their letterhead. 1983, undated. 3 by 2 inches. Self adhesive. Mustard: Black and green on orange-yellow. Curry: Orange and green on white. Regular: Black and green on white. Silhouette of woods with birds. “Fresh Daily. Ready to Eat Foods. Naturally. Perishable. Keep refrigerated.”

Labels for all 3 flavors. Sent by Paul Duchesne. 1989. Aug. 11. This set of labels is slightly different from those described above; each has the slogan “Ready to eat foods, naturally.” In the ingredients, the tofu is listed as “Wildwood Tofu” rather than “UFO Tofu by Wildwood.” Talk with Paul Duchesne. 1989. Aug. 17. The term “BRT” probably started to be used in late 1981 or early 1982, while Paul was still with Wildwood. The term “UFO Tofu” was used for all tofu made by Wildwood. It is a palindrome, which reads the same backward or forward.

2346. Lesem, Jeanne. 1981. Will Americans swallow soybeans? *Morning Union (The) (Springfield, Massachusetts)*. May 13. p. 29. [1 ref]

• **Summary:** According to this summary of an article by Judy Brown in the *National Food Review*, a USDA quarterly, tofu, tempeh, and miso are becoming increasingly popular.

2347. Lesem, Jeanne. 1981. Will soybeans now follow margarine on road to success? *Hartford Courant*. May 13. p. E12.

• **Summary:** This article is a telephone interview with Judy Brown, based on her article in the *National Food Review*, a USDA quarterly. “Tofu (toe-foo) is as much a part of Japanese culture and cookery as bread is in the United States,” says Brown. Also discusses tempeh, miso, soy flour and grits, and “textured vegetable products.”

Note: Syndicated by United Press International, this article appeared in several other newspapers.

2348. *Compas (Le) (France)*. 1981. Le soja et ses dérivés: Miso, tamari, tofou [The soybean and its derivatives: Miso, tamari and tofu]. No. 17. p. 37-54. Spring. Illust. 27 cm. [Fre]

• **Summary:** An in-depth look at each of these three soyfoods, with illustrations from books by Shurtleff & Aoyagi. The section titled “Tofu and its craftsmen” (p. 42-

44) profiles Le Bol en Bois, Les 7 Marches, and Jonathan. Photos show Jos van de Ponsele and his wife, plus Lima tofu and seitan in a retail cooler. The section titled “Make tofu—An occupation for the future” (p. 45-49) contains excerpts from the book *Tofu and Soy milk Production*, by Shurtleff & Aoyagi. The section, titled “Making tofu at home” (p. 50-53) contains the basic method, with many illustrations, from *The Book of Tofu*, by Shurtleff and Aoyagi. The last section, titled “Tofu—Is it yin or yang?” (p. 54) is by Louis Thévenon.

2349. *Compas (Le) (France)*. 1981. Cuisine: Soja d’hier, et d’aujourd’hui [Cookery: The soybean of yesterday and of today]. No. 17. p. 59-63. Spring. [Fre]

• **Summary:** Contains recipes for natto, miso, tofu, and tamari. With illustrations from books by Shurtleff & Aoyagi.

2350. Erewhon Mail Order. 1981. Erewhon. Natural foods mail order catalog. Brookline, Massachusetts. 16 p. May. Catalog and price list.

• **Summary:** This is a new mail order catalog, whose prices become effective on 1 May 1981. On the front cover is a woodblock print of a man with a sickle cutting sheaves of grain in a field. He is wearing a hat, and behind him on the ground is a wooden barrel. Erewhon is now located at 26 Washington St. in Brookline Village—also the home of Erewhon Mail Order. There are retail stores at 342 Newbury St. in Boston and 1731 Massachusetts Ave. in Cambridge. Address: 236 Washington Street, Brookline, Massachusetts 02146. Phone: 617-738-4516.

2351. Hesseltine, C.W. 1981. Future of fermented foods. *Process Biochemistry* 16(3):2-6, 13. April/May. [11 ref]

• **Summary:** Discusses shoyu, miso, natto, and tempeh in Korea, the USA, and Japan. There are nine factors that favor the increased use of fermented foods. Address: NRRC, Peoria, Illinois.

2352. Mori, H. 1981. Shôwa 55 nendo ni okeru shôyu, miso no kenkyû gyôseki [Review of annual achievements in shoyu and miso research]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 76(5):300-28. [683 ref. Jap]

• **Summary:** This important Japanese-language article, published each year in the May issue of this periodical, has two parts: (1) A review of the past year’s major discoveries and developments in the fields of miso and soy sauce in Japan. (2) A bibliography related to those discoveries and developments. Address: Noda Sangyo Kagaku Kenkyusho.

2353. Wang, Hwa L. 1981. Oriental soybean foods: Simple techniques produce many varieties. *Food Development* 15(5):29-34. May.

• **Summary:** Methods of preparation are given for the following soyfoods: Tofu, soy sauce, miso, hamanatto, sufu, tempeh, natto. A table gives local names, descriptions, and uses for traditional East-Asian non-fermented soyfoods: “Fresh green soybeans (mao-tou, edamame),” soybean sprouts (huang-tou-ya, daizu no moyashi), soybean milk (tou-chiang), protein-lipid film (tou-fu-pi, yuba), soybean curd (tofu, tou-fu, tubu, tahoo, touhu, taufoo, dou-fu, dan-fu), and soybean flour (tou-fen, kinako). Local names, organisms used, substrate, and description of the product are given for traditional East-Asian fermented soyfoods: soy sauce, miso, hamanatto, sufu, tempeh, and natto.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word “taufoo” to refer to Chinese-style tofu. Address: NRRC, Peoria, Illinois.

2354. Chu, Yung-shung. 1981. Soybean protein food in China. *APCC Quarterly Supplement*. June 30. p. 23-27. [Eng]

• **Summary:** This article was first published in the *Journal of the American Oil Chemists’ Society* (1981, Feb. p. 96A). Address: Oil and Fat Research Inst., Shaanxi, China.

2355. Earle, Steve. 1981. Pillars of sea salt. *East West Journal*. June. p. 52-58.

Address: San-Jirushi Corp., Japan.

2356. Eden Foods. 1981. Catalog II, 1981. 701 Tecumseh Rd., Clinton, MI 49236. 71 p.

• **Summary:** On the cover is a stylized 2-story house on a farm. Address: Ann Arbor, Michigan.

2357. Belleme, John. 1981. The miso master with a big heart: Making miso in a Japanese village. *Soyfoods* No. 5. p. 64-66. Summer.

• **Summary:** Describes how John and Jan Belleme learned to make traditional Japanese miso from the Onozaki family in a small farming village 10 miles north of Yaita, in Tochigi prefecture. Contains 5 photos of the miso-making process and a detailed description of that process.

2358. Needleman, Larry. 1981. Tofu plant profiles: Sunshine Soy, Miami. *Soyfoods* No. 5. p. 29-30. Summer.

• **Summary:** Sunshine Soy is owned and operated by Danny Paolucci in Coral Gables, a suburb of Miami. “Starting in 1970 when he became acquainted with the vegetarian diet and the food uses of soybeans, Mr. Paolucci has been ‘screaming soybeans,’ as he remarks. In the mid-1970s he was cook at the Mt. Baldy Zen Center in California where he experimented with soybean dishes and made community scale miso. In 1974 he wanted to open a soy plant but there was no technology or information available; existing Oriental plants were unwilling to help him. In December 1977 he linked up as manager with the meteoric Swan

Foods of Miami, an early multiproducts soy company that in its one intense year of business lost some \$140,000. Mr. Paolucci emerged from the experience with considerable insight and some manufacturing equipment so that in June 1980 he was able to launch his own soy venture"—Sunshine Soy.

The company now makes 500-750 lb of tofu a day, plus tempeh, baked tofu, soymilk, miso salad dressing, and soysage. Photos show: Danny Paolucci. A hydraulic forming box press. A clamshell sealer. A Chisholm-Ryder screw extractor; unfortunately it is no longer manufactured. Address: Bean Machines Inc., Bodega, California.

2359. **Product Name:** Miso Salad Dressing.

Manufacturer's Name: Sunshine Soy Co. Inc.

Manufacturer's Address: 4015 Laguna St., Suite "H," Coral Gables, FL 33146. Phone: 305-447-1277.

Date of Introduction: 1981. July.

New Product—Documentation: Needleman. 1981. Soyfoods. Summer. p. 29-30. "Tofu plant profiles: Swan Gardens and Sunshine Soy (Miami)." "A miso salad dressing is currently produced."

2360. Krieger, Verena. 1981. Gestern Steak, Morgen Tofu: Oder was man mit einer Bohne so alles machen kann [Yesterday steak, tomorrow tofu: Or all the things that can be made with one bean]. *Tages Anzeiger Magazin* No. 34. p. 6-12. Aug. 22. Also translated in English, French, and Italian. [4 ref. Ger; Eng; Ita; Fre]

• **Summary:** A lengthy, pioneering account of the virtues of tofu, and its development in the USA and Switzerland by the Sunday supplement to Switzerland's biggest daily newspaper. Contains numerous color photos of soyfoods from around the world. Also defines and discusses soymilk, miso, tamari, shoyu, and soy sauce, tempeh, and soy sprouts. Discusses the work of Edgar W. Schweizer (underway by 1977) in attempting to grow soybean varieties suited to Switzerland.

The Geneva restaurant "La Moisson" has had tofu on the menu for 5 years. In Bern, in the beginning of July, the restaurant "Sesam" was acquired by the first Swiss organic food store (*Bioladen*), the "Lotusbluemli" (Little Lotus Blossom). Since Sesam opened, the people of Bern have been able to get to know a rich treasure of dishes from tofu made at Sesam, as well as many applications of miso and shoyu or tamari. The vegetarian restaurant "Bristol" in Lucerne is launching tofu as its summer hit this year, in the form tofu Tofu Schnitzels and Burgers... In organic food shops, Reform Houses and Oriental specialty shops, miso and soy sauce are available. The following places in Switzerland sell fresh tofu, which they make on the spot: (1) Centre macrobiotique de Lausanne, ruelle de Bourg 7, 1003 Lausanne. (2) S. Gänterli, Vommatstr. 50, 6003 Lucerne. (3) Le Grain d'Or, rue Voltair 27, 1201 Geneva. (4) De Lade,

Oberaltstadt 8, 6300 Zug. (5) S. Lotusbluemli, Gerechtigkeitsgasse 17, 3011 Bern. (6) Madal Bal, Kreuzplatz 10, 8032 Zurich. On the last page of the article is an ad for Soyana in Zurich.

Note: The Italian-language edition of this article is titled "Teri bistecca, domani il tofu." It is the earliest Italian-language document seen that mentions tempeh, which it calls "tempeh." Address: Lucerne, Switzerland.

2361. McNees, Pat. 1981. Questions? Read on [A list of books about healthy foods]. *Washington Post*. Aug. 27. p. E1, E26. [30 ref]

• **Summary:** The books listed here are a good introduction to the subject of healthy and natural foods. Includes books on whole foods, whole grains, macrobiotics, vegetarianism, and soybean products. "Serious vegetarians and lovers of Oriental cuisine will want to take a look at, if not own, three thoroughly fascinating and informative books about how to prepare and make the best use of three important soybean products: 'The Book of Miso' (Autumn Press), 'The Book of Tempeh' (Harper & Row), and 'The Book of Tofu' (Autumn Press), all by William Shurtleff and Akiko Aoyagi. Aoyagi creates the recipes, which work better than those we've tried in some other recipe books mainly because she doesn't try to make the principal ingredients taste too much like something they're not (although even she fails to make tofu palatable as a dessert, in the recipes we tried). What makes these books seductive for cookbook buffs is the research, which is Shurtleff's bailiwick; he tells you more than you could ever want to know about a subject, but he sure keeps you reading..."

2362. Spencer, Colin. 1981. Mean bean. *Guardian (England)*. Aug. 28. p. 7.

• **Summary:** Ironically, the protein-rich soy bean is the dullest of all the dried peas and beans. Few of the soy-bean recipes in cookbooks sound even vaguely appetising. Soy beans were first grown in England at Kew in the late 1700s. Most soy beans stocked in wholefood shops are round and beige, but some are small and black; they both taste about the same. Describes how to soak, then cook whole soybeans so as to inactivate the "'trypsin inhibitor,' which blocks an trypsin enzyme essential for the digestion of protein." They should be cooked for 4-5 hours or pressure cooked for 25 minutes. After cooking, the whole soy beans can be crushed (with a potato masher) or pulped in a blender to yield a thick grainy puree. Describes various ways of preparing the cooked pulp. "Served with a miso sauce, these soy bean croquettes can be far more delicious than they sound."

In the USA, small "packets of dry roasted soy beans, salted like peanuts," are sold in plain, salted, garlic, and barbecue flavors. Describes how to roast your own at home, using an oiled baking tray. "Toss the roasted beans in a flavoured salt." Or you can grind the unsalted roasted beans

to make kinako. "In Japan they sweeten kinako and use it to coat confectionery. It must be the only example of chewy treats which could be good for you."

Gives recipes for: Sesame dry soybeans. Soybean Russian salad. Soy bean fritters. Black soy bean casserole.

2363. **Product Name:** Fried Rice Sandwich (With Tofu).

Manufacturer's Name: Community Kitchens.

Manufacturer's Address: Maplewood St., Boulder, Colorado.

Date of Introduction: 1981. August.

Ingredients: Organic brown rice fried with scallions and soy sauce, wrapped in a whole wheat tortilla with steamed organic carrots, alfalfa sprouts, miso tahini sauce, tofu, green leaf lettuce.

New Product–Documentation: Talk with Marty Roth. 1989. Aug. 16. Barbara started her own sandwich business in Boulder making a brown rice sandwich with tofu. Talk with Barbara Svenning. 1989. Aug. 21. She went to Boulder by herself in mid-Aug. 1981 and started a business to support herself. Her only product was the Fried Rice Sandwich. She called it Community Kitchens. It was a cover to keep her away from the health inspector. She was pregnant with her son, Ricky, who was born later on 28 April 1982. For the first 3 weeks she made the sandwiches out of Rebecca Woods' kitchen, then she moved right across the street on Maplewood St. She made and distributed 30-40 sandwiches a day to 3-4 natural food stores in Boulder. She continued until the health inspector shut her down. She bought her tofu in the form of fresh scraps from White Wave. She continued until the health inspector shut her down, then she sold the business to Gloria Gilbert.

2364. Lenetsky, Mark. 1981. Short course on soyfoods: What they are, how they are used. *Health Foods Business*. Aug. p. 46, 49-50, 52, 53. [2 ref]

• **Summary:** Contents: Introduction. Tofu or "soy cheese." The many uses of tofu. Makings of miso. Tamari—by any name. Tempting tempeh. 'High tech' approach (TVP). Its a joy to cook with soy: Selected recipes from suppliers. Address: Nutritional consultant, Applegate Natural Foods, Tigard, Oregon.

2365. Nakano, Masahiro. 1981. Seimin yōjutsu no shō. Koten e no kaiki. II. [Chiang in the Ch'i-min Yao-shu: A new look at ancient classic documents]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 330. p. 2-8. Aug. [Jap]
Address: Tokyo, Japan.

2366. Leviton, Richard; Shurtleff, William. 1981. U.S. per capita consumption of soyfoods grows to nearly 9 pounds per year (News release). Soyfoods Assoc., Sunrise Farm, Heath Rd., Colrain, MA 01340; and Soyfoods Center, P.O.

Box 234, Lafayette, CA 94549. 4 p. Sept. 4. Published in Soyfoods, winter 1982, p. 6. [2 ref]

• **Summary:** Compiled largely by Shurtleff, circulated by Leviton. "In 1981 Americans spent \$4.57 per capita on soyfoods [not including soy oil] while consuming 4.9% of the U.S. soybean crop—possibly an all-time high." Address: I. Colrain, Massachusetts; Lafayette, California.

2367. Yoshihara, Lulu. 1981. Re: History of and update on Shin-Mei-Do Miso Company. Letter to William Shurtleff at Soyfoods Center, Sept. 9. 3 p. Handwritten, with signature.

• **Summary:** "Shin-Mei-Do Miso started commercial production in April 1979. I studied miso making with the traditional masters at Maruman Miso Company in Iida City, Nagano Prefecture, Japan. Maruman still operates a *tezukuri* [hand crafted] shop as well as a huge factory and I was able to compare both processes and the resulting kinds of misos. Last spring my husband, Yoshi, visited them and received many compliments about our miso, as well as constructive criticism.

"We make two types of miso: *Kome* (organic soybeans, Kokuho Rose rice, sea salt, well water) age 1-1½ years, and *Mugi* (organic soybeans, Canadian barley, sea salt, well water) aged 22 months (2 summers).

"We also have 2 experimental batches of *genmai* [brown rice] miso made with whole organic brown rice (Lone Pine). This fall we will start making moromi miso, a type of naturally sweet finger-lickin' miso from a recipe we received from our teacher in Japan.

"This summer Yoshi and two local carpenters built a new addition to our miso workshop..." Address: Shin-Mei-Do Miso Co., Wren Rd., Denman Island, BC, Canada, V0R 1T0.

2368. *Asahi Shinbun (Asahi Daily News, Tokyo)*. 1981. Misoshiru igai na kōyō [Miso soup's unexpected good effects: It lowers the death rate from stomach cancer, heart disease, and cirrhosis of the liver]. Sept. 27. [1 ref. Jap; eng+]

• **Summary:** "People who drink miso soup daily are not likely to die from stomach cancer." This was the result of research by Dr. Takeshi Hirayama and his group. He is head of the Epidemiology Division, at the National Cancer Center Research Institute. Miso soup was also found to lower the death rate from stomach ulcers, heart disease, and cirrhosis of the liver (*kankōhen*). This research will be reported next month in Sapporo at a meeting of a Japanese epidemiology society. Note: A long summary of this article appeared in the Oct. 1 issue of *Toyo Shimpo* (p. 1).

2369. Oak Feed Miso, Inc. 1981. Minutes of Annual Stockholders Meeting of Oak Feed Miso, Inc. Rutherfordton, North Carolina. 3 p. Sept. 27. Unpublished manuscript.

• **Summary:** The meeting was held on 27 Sept. 1981 at the corporation offices in Rutherfordton, North Carolina. It was called to order by Barry Evans, who was appointed acting chairman. This annual meeting had been postponed from 1 April 1981 (5 months). "The following shareholders were present in person or by proxy: Barry Evans, 1400 shares; John Belleme, 900 shares; Sandy Pukel, 1400 shares; Madelene Kenny [sic, Kenney], acting as representative of her deceased son, James Kenny, 50 shares; Yoso Masudo [sic, Yozo Masuda], 100 shares (proxy held by Sandy Pukel); Edmund Benson, 100 shares [sic, 250 shares] (proxy held by Sandy Pukel). The total number of shares represented at the meeting was 4100 shares, all of the outstanding stock of the Corporation, which constituted a quorum for the transaction of business."

Several important changes were made: The capitalization of the corporation was increased to 10,000 shares of Class A stock. Class B non-voting shares were eliminated. The "subscribers consent" agreement executed on 16 August 1979 was altered and amended so that all shares subscribed for became Class A common stock. All of the above allowed Barry Evans to vote—for the first time. Address: Rutherfordton, North Carolina.

2370. Corn Country Whole Foods, Inc. 1981. Market Street: Natural foods with a difference (Catalog). 132 South Market St., Champaign, IL 61820. 24 p. Index. 28 cm.

• **Summary:** This natural foods, vegetarian catalog is printed on beige paper with black ink. Corn Country is now distributing products made by many other companies. Interesting products: (1) Stoneground flours: Soy flour-full fat (OG = Organically Grown). Chickpea (garbanzo) flour. Our "old fashioned granite stone mills keep the flour at the lowest grind temperature..." Soybeans and chick peas are preheated before grinding. (2) Beans: Soybeans OG. Azuki beans. Chickpeas (Garbanzos). Lentils (green or red). Mung beans (for sprouting). (3) Peanut butter. Almond butter. Sesame tahini. (4) Sea vegetables (10 types). Westbrae miso (7 types). (5) Light Foods: Tofu. Marinated tofu. "Soyproducts are becoming an increasingly attractive source of protein throughout the world... We offer a small variety of soy products." (6) Condiments. Nigari (bulk or 5 lb). Umeboshi plums. Shoyu (pints to 4.75 gal tin). Miso (red or white). Tamari (with dispenser to quarts). (7) Market Street meals (vegetarian): Nutburger. Soyburger. Chick 'n sea burger. (8) Nutritional (brewer's) yeast (20 lb to 125 lb): "These yeasts are primary yeasts cultured on molasses for human consumption. They are not a byproduct of petroleum, or paper industries." Sold in powder or flakes. (9) Natural oils: Sesame oil. Safflower oil. (10) Seeds. Alfalfa seed for sprouting. Sesame seeds whole brown. Sesame seeds hulled white. Sunflower seeds. (11) Market Street shoyu almonds, suns (sunflower), cashew pieces. (12) Soy & corn "nuts": Soy nuts salted. Soy nuts plain. (13)

Market street mixes (unsulfured fruits and natural nuts): Sweet & shoyu mix. (14) Literature: 26 Talking Foods pads. (15) Dr. Bronner's soap (14 types). (16) Kitchen help: Tofu kit. Sprouter lids. Wok set. Address: Champaign, Illinois. Phone: 217-359-8843.

2371. Inkson, Ms.; Mann, E.J. comp. 1981. Thesaurus: Food Science and Technology Abstracts. 2nd ed. Shinfield, Reading, England: IFIS (International Food Information Service). 238 p. No index. 30 cm. First edition, 1977. [Eng]

• **Summary:** The Introduction states: "The original IFIS word list, issued in 1970, did not attempt to give more than the barest outline of the relations between the terms encountered. In 1977, therefore, an FSTA Thesaurus was published, in which the basic structuring of the material found in FSTA was set out. The Thesaurus was designed to give maximum compatibility with the EEC Multilingual (English / French / German / Italian) Food Thesaurus, published in 1979 (and itself based largely on the FSTA system for the English version), and to take into account the needs of on-line users."

The terms are divided into headings (main terms or descriptors), which are printed in capital letters, and lead-in terms (non-descriptors) printed in lower case. Additional information is included in square brackets. The following abbreviations show the types of relationship between terms: BT = broader terms. NT = narrower terms. RT = related terms. UF = used for. lead-in term followed by "see" heading (e.g. bean curd see TOFU).

Soy-related terms: Beverages: UF soy milk. Lecithins: BT Emulsifiers, Phospholipids. UF phosphatidylcholine. Legumes: NT Soybeans. Miso: BT Soy Products. natto: see Soy Products. Sauces: NT Soy Sauces. soy flour: see Soy Products. soy milk: see Beverages; Soy Products.

Soy Products: BT Soybeans, Vegetable Products, Fermented Products. NT Miso, Soy Proteins, Soy Sauces, Soybean Oils. UF natto, nyufu, soy flour, soy milk, sufu, tempeh, tofu, tsukudani, vital.

Soy Proteins: BT Protein Products, Soy Products, Proteins Vegetable. RT Textured Vegetable Proteins. UF okara protein, Promine [Central Soya Co.], Supro 620, yuba.

Soy Sauces: BT Fermented Products, Sauces, Soy Products. UF moromi, shoyu.

Soybean Oils: BT Oils Vegetable, Soy Products. Soybeans (*Glycine max*): BT Legumes, Oilseeds. NT Soy Products.

Note 1. This is the earliest document seen (Sept. 2003) that is a thesaurus containing terms related to soybeans and soy products.

Note 2. This is the earliest English-language document seen (Feb. 2007) that uses the word "nyufu" to refer to fermented tofu. Address: IFIS (International Food

Information Service), Lane End House, Shinfield, Reading RG2 9BB, England.

2372. Nakano, Masahiro. 1981. Wamyôshô, Senchû wamyô ruijûshô oyobi Wakan sansai zue (no miso to shi). Koten e no kaiki. III. [Miso and soy nuggets in the *Wamyosho*, *Senchu Wamyo Ruijusho* and *Wakan Sansai Zue*: A new look at ancient classic documents]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 331. p. 11-19. Sept. [Jap]
Address: Tokyo, Japan.

2373. Shimada, A. 1981. Shoku seikatsu ni okeru misoshiru no ichizuke [The importance of miso soup in the Japanese diet]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* No. 331. p. 2-10. Sept. [10 ref. Jap]
• **Summary:** Ninety percent or more of the miso in Japan is used as an ingredient in soups. Address: Akita Daigaku Igaku-bu, Eiseigaku Kyoshitsu.

2374. Shurtleff, William; Aoyagi, Akiko. 1981. Miso production. 2nd ed. Lafayette, California: Soyfoods Center. 80 p. Illust. by Akiko Aoyagi Shurtleff. Index. Sept. 28 cm. [82 ref]
• **Summary:** With this printing only the name of the publisher has been changed to Soyfoods Center from New-Age Foods Study Center.

Print history: Pre-publication: 100 photocopy copies. 1977 Aug. 16: 300 paperback copies. 1979 Oct.: 405 paperback. 1981 Sept.: 876 paperback. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2375. Shurtleff, William; Aoyagi, Akiko. 1981. History of major U.S. soya research centers. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 24 p. Oct. 12. Unpublished typescript.

• **Summary:** A comprehensive history of the subject. Contents: Introduction. University of Illinois and INTSOY: Home Economics Department's work (in the 1930's, 1940-1961, and 1974-1981), Food Science Department (1955-1981), International Soybean Program (INTSOY) founded July 1973, large number of talented faculty made the Univ. of Illinois one of the world's top soy research centers. Iowa State University. Cornell University: First work with soy 1883, first soyfoods work in 1927 (soymilk thesis by Y.T. Chiu), one of leading centers of U.S. soyfoods research during World War II (see chapter on Clive and Jeanette McCay), rebirth of interest in soyfoods in late 1950's, 1960 paper on tempeh, soymilk work 1963-1980, other soyfoods studied, arrival of Dr. Van Veen in 1962 (had studied tempeh since 1932, had lived in Indonesia, and had a lifelong interest in tempeh), renewed program of soybean development and production initiated in New York state in 1964. USDA Northern Regional Research Center (NRRC):

Originated with 1929 USDA soybean lab in Ohio, 1936 soybean lab in Urbana, IL, transferred to Peoria, IL, 1942, expanded research on food uses of soybeans and soy oil, fermentation division headed by Langlykke, work on soy sauce, life of Dr. A.K. Smith, at NRRC from 1942-1964, arrival of Drs. Watanabe and Shibasaki, Smith one of first American researchers to realize the potential of tofu, work with miso, 1960 arrival of respected Indonesian microbiologist Ko Swan Djien, work on tempeh, NRRC hosted 2 of first major conferences on soy protein foods in 1961 and 1966, sponsorship of overseas contract work, expansion of research in 1960's, soy flour extrusion, Rackis' work with oligosaccharides (flatulence-causing factor in soybeans), life of Dr. C.W. Hesseltine, 1962 arrival of Dr. H.L. Wang at fermentation lab, Mustakas' studies on soymilk, NRRC's interest in soyfoods steadily growing, legitimizes soyfoods to people in U.S. and around the world. INTSOY: Founding, 5 basic objectives, main accomplishments with soybeans, main accomplishments with soyfoods. Address: Lafayette, California. Phone: 415-283-2991.

2376. *Chicago Tribune*. 1981. 'Tofu' and other soy books: Reader's guide to good eating. Oct. 29. p. W_A21, or N_B19.

• **Summary:** This is a briefly annotated list of useful books about soy products: (1) *Soybeans for Health and Longevity*, by Philip S. Chen. (2) *The Soybean Book: Growing and Using Nature's Miracle Protein*, by Phyllis Dobson. (3) *The Farm Vegetarian Cookbook*, edited by Louise Hagler. See recipes for making ice bean, soy yogurt, and soysage. (4) *The Book of Tofu*, William Shurtleff and Akiko Aoyagi. Profusely illustrated, with hundreds of recipes. "There is no more thorough book on the history and myriad Oriental forms of tofu... First published in 1975, it is credited by most tofu cookbooks as the one that 'spread the light.'" (5) *The Tofu Cookbook*, by Cathy Bauer and Juel Anderson. Incorporates tofu artfully into familiar international dishes. Many recipes assume access to the by-products of making tofu at home: okara (soy pulp) and whey. (6) *The Great American Tofu Cookbook*, by Patricia McGruter. (7) *Tofu Goes West*, by Gary Landgrebe. For those who enjoy the chewy texture of "frozen tofu." (8) *The Book of Miso*, by Shurtleff & Aoyagi. The best-known book about miso. (9) *The Book of Tempeh*, by Shurtleff & Aoyagi. A thorough study of this traditional Indonesian food.

2377. **Product Name:** Red Miso.

Manufacturer's Name: American Miso Co., Inc.

Manufacturer's Address: Box 541, Route 3, Rutherfordton, NC 28139.

Date of Introduction: 1981. October.

New Product-Documentation: Leviton. 1982. Soyfoods. Summer. p. 18-22. The company was founded in October

1981 by John Belleme; Ad in *East West Journal*. 1985. Jan. "The secret of Japanese miso comes to America." Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 238, 240. By 1983 they were America's third largest miso maker, with 125 tonnes a year.

2378. *East West Journal*. 1981. A soyfoods trailblazer looks back... & ahead [Interview with Dr. C.W. Hesseltine]. Oct. p. 30, 32-33.

• **Summary:** This interview was conducted by William Shurtleff of Soyfoods Center. Dr. Hesseltine's lab has sent out 30,00 to 40,000 packets of tempeh starter to approximately 20,000 different people over the past 5 years. "Shurtleff: Has there been an interest comparable to that for any other [NRRC] food project that you know of? Hesseltine: No, nothing on that scale. Even back in the penicillin days, there was no such response." A photo shows Dr. Hesseltine talking with people at the 1981 Soycrafters Association Convention.

Note: Dr. Hesseltine says that okara can be used as a feedstock for making ethanol (ethyl alcohol) and methanol. Address: Chief, Fermentation Lab., USDA/NRRC, Peoria, Illinois.

2379. Greenwood, Rebecca. 1981. Irresistible soy cuisine: Discover soy yogurt and prepare old favorites. *East West Journal*. Oct. p. 64, 66-69.

• **Summary:** The author prefers fermented soyfoods, finding them more digestible, and richer in enzymes and vitamins. She describes how to prepare homemade soy vilia (a yogurt-like product whose starter culture is available from GEM Cultures in Fort Bragg, California), homemade miso, homemade natto and natto condiment, tofu and natto sandwich spread, an autumn meal with natto, amasake, and a pecan pie sweetened with thick amasake. She predicts a bright future for tempeh. Address: Colorado.

2380. Lima N.V. 1981. Lima natural foods pricelist. Lima Foods, Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium. 12 p. Catalog. 30 cm. [Eng]

• **Summary:** Lima has been making organic, unrefined foods, without additives, for 20 years. Organic quality is guaranteed. Contents: Whole cereal grains. Stone-ground whole flours (incl. soya flour, 500 gm). Whole pulses (incl. soya, and azuki, each 500 gm). Coffee substitutes (incl. Yannoh with azuki, Dandelio [dandelion root], roasted barley, and chicory). Lima specialties (incl. Kokoh with azuki flour, Seitanpast [Vegetable spread with seitan]). Oriental specialties: Tamari-shoyu (from soya and wheat), Tamari, Hacho miso, Barley miso, rice miso, instant miso soup (with dried vegetables), Kozou (kuzu), Mebosi (umeboshi), Tekka (natural seasoning with miso). Seaweeds. Unrefined oils. Sea salt. Vegetable protein products: Seitan (vegetable protein concentrate, 150 gm

jar), Seitan goulash (seitan with vegetables), Soya filtrate (soyamilk), Tofu (curdled soya filtrate). Concentrated soups (incl. azuki soup). Books (incl. 2 cookbooks by Anette Gevaert). Address: Lima Foods, Edgar Gevaertdreef 10, Sint-Martens-Latem 9830, Belgium.

2381. Miller, Roger W. 1981. The case for moderating sodium consumption. *FDA Consumer*. Oct. p. 9-13. Reprinted in *Sourcebook on Food and Nutrition*, 3rd ed. 1982. p. 140-43.

2382. Soy Plant (The). 1981. An all-soy deli: Tofu, miso, soymilk, tamari, tempeh (Ad). *Ann Arbor Calendar (Michigan)*. Oct. p. 21.

• **Summary:** At the top of this small ad (2½ by 1.75 inches) is the collective's logo. At the bottom: "Present this ad for a 10% discount on listed items through 10/31/81. Limit one per customer." Address: 211 East Ann St., Ann Arbor, Michigan 48104. Phone: 663-0500.

2383. Gevaert, Pierre. 1981. Re: Pioneering production of miso and soy sauce in Europe. Letter to William Shurtleff at Soyfoods Center, Nov. 19—in reply to inquiry. 1 p.

• **Summary:** Lima Foods first began commercial production of miso and soy sauce in 1959. They stopped in 1966 and began again in early 1981 (3-1-81) at Lima Andiran in France. They also plan to make shoyu there in early 1982. They were the first company in Europe that they know of to make these two products. They now make 1,200 kg/month of barley miso and 800 liters/month of shoyu. All ingredients are organically grown. Address: Lima Foods, Edgar Gevaertdreef 10, Sint-Martens-Latem 9830, Belgium. Phone: 09-52-4176.

2384. Belleme, John. 1981. Update on work with miso in North Carolina (Interview). *SoyaScan Notes*. Nov. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Erewhon Trading Co. recently filed for Chapter 11 bankruptcy protection. They are in receivership and on the verge of bankruptcy; they are no longer delivering products to stores, only manufacturing. Erewhon owes Mr. Kazama of Mitoku \$400,000 plus the shipments on the docks.

John plans to sell a miso fermentation kit, consisting of koji plus instructions for making miso at home. Address: Route 5, Box 258, Rutherfordton, North Carolina 28139. Phone: 704-749-9537.

2385. Elwell, Christian. 1981. Re: Historical sketch of South River Miso Co. Letter to William Shurtleff at Soyfoods Center, Nov. 29. 2 p. Handwritten, with signature on letterhead.

• **Summary:** "South River Miso Co. is a continuation of the Ohio Miso Co., begun by Thom Leonard and Richard

Kluding in Monroeville, Ohio, in 1979. 26,000 pounds of Barley and Rice miso along with equipment was transferred to South River Farm in Conway, Massachusetts, in 1980. There, a new shop of traditional timber-frame construction, featuring a wood-fired masonry cooking stove was completed in 1981. Production capacity is 40,000 to 120,000 pounds of miso per year. Barley miso is the standard variety offered. Others include Brown Rice, Corn, and Black Soybean miso. Deep well water and organically grown ingredients are used. Christian and Gaella Elwell plan to make the shop part of an agriculturally based village."

An attached letter by Christian on lined paper adds: "Last year we sold about 6 tons of barley and 1 ton of brown rice miso—all that was ready for sale from Ohio. We have about 5 tons of two-year barley for sale this year, half of which is already spoken for.

"The new shop is quite exciting. The masonry stove is also part of a masonry heating system. I hope you will visit... We are just twelve miles from Greenfield." Address: South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

2386. Suzuki, Tsuguyoshi; Okazaki, M.; Kashiwazaki, H.; Moriyama, M.; Takemoto, T-I. 1981. Changing food consumption of Japanese immigrants in the lowland of Bolivia. *Ecology of Food and Nutrition* 11(2):103-16. Nov. [13 ref. Eng]

• **Summary:** During a 3-day period in July and August 1975, dietary records of 34 households of Japanese immigrants in the lowlands of Bolivia were analyzed for the amounts and types of food consumed. The colony of Japanese immigrants, *Colonia San Juan de Yapacaní*, was established in 1955 on the basis of a governmental agreement between Bolivia and Japan. From 1955 until 1974 a total of 297 households, including 1,649 individuals, immigrated into the colony; the majority came during the first ten years. Among the items consumed were soybean products (not including soy sauce; consumed by 79.4% of the households), *tsukudani* (small fish cooked in soy sauce), wakame, nori, and kombu (3 sea vegetables), *furikake* (a seasoning containing nori), and azuki beans. "Among legumes, soybeans occupied the top position even after excluding the consumption of soybean sauce. The usual preparation was miso (soybean paste fermented and salted) and tofu (soybean curd), raw or fried, which the colonists could buy from a tofu shop in the colony."

Adzuki beans were boiled with glutinous rice and served at celebrations. "Immigrants procured the seed from Japan or Brazil and cultivated the beans." Also served was *kintsuba* (a sweet adzuki bean cake). One of the most widely used seasonings was soybean sauce, used in 85.3% of the households. Address: 1. Dep. of Human Ecology,

School of Health Sciences, The Univ. of Tokyo, Tokyo, Japan.

2387. Burns, Ken. 1981. Re: George Ohsawa and history of macrobiotics in America. Letter to William Shurtleff at Soyfoods Center, Dec. 9—in reply to inquiry. 7 p. Typed, with signature. [1 ref]

• **Summary:** An excellent, in-depth history by a very knowledgeable source. Numerous fond personal recollections and character sketch of Ohsawa. 1959 Dec.—Ohsawa first visited the USA. 1960 Jan.—He published, in mimeograph form, his astonishing book *Zen Macrobiotics* in English in New York City. "Although not in great detail, here he introduced miso, tamari, and tofu to the general public. The first two especially quickly become essential ingredients in the diet of almost all macrobiotic people in the US.

"During January, February, and March [1960] he lectured extensively at the Buddhist Academy in New York City. He returned to the US in July and lectured at the First American Summer Camp on Long Island daily for two months.

"The Second American Summer Camp was held in July and August of 1961. I am not sure whether he was present or not. This was in Wurtsboro, New York. In that year also, thirteen macrobiotic families left New York and moved to Chico, California on his advice. The next year, 1962, they founded the first American macrobiotic food distribution and processing center in this country.

"In 1963, in the summer he came to the US again and lectured in Boston, NYC, and at the Chico Summer Camp.

"In 1964, he lectured at the Big Sur Summer Camp.

"In 1965, he lectured at Mayoro Lodge near Pulga, California.

"In 1966, on April 24th he died in Japan.

"All in all, George Ohsawa visited this country either five or six times, each time lecturing, and speaking to the people individually without rest. He was ceaselessly active. I have heard many anecdotes concerning him during that period. As best I can determine, his affect on people was quite simply shattering—they had never seen anything like it."

Also discusses Michio and Aveline Kushi, Boston, Erewhon, East West Journal, East West Foundation (est. 1972), Amherst Summer Program (since 1974), Kushi Institute (fall 1978), Herman Aihara, Musubi, Ohsawa Foundation, GOMF (1970), French Meadows Summer Camps, Shizuko Yamamoto, Masahiro Oki, Michel Abehsera. Address: Boston, Massachusetts.

2388. Hoang, Van Chi. 1981. Re: Vietnamese soy sauce, xi dau, and nuoc tuong. Questions answered on Soyfoods Center letterhead (dated 9 Dec. 1981) and returned to SC. 1 p. Plus 2 enclosures.

• **Summary:** Upon receiving Mr. Hoang's answers by mail, Shurtleff called him on 6 March 6 1982 to ask for clarification on some points. The two sets of answers are merged below.

Xi dau (pronounced "si zao") is the Vietnamese term for *siyu* or black soy sauce served mostly in Chinese restaurants in Vietnam. It is made in Vietnam, but only by Chinese, in both North- and South Vietnam. It is exposed to air for many months to make it dark.

Nuoc Tuong (pronounced "Nuc Tung"—"Nuoc means "liquid") is the water in which soybeans are soaked, typically for about 9 days, but sometimes as long as 30 days. This soak water (also called "soybean self-autolysis water") is removed because otherwise (many believe) it would lower the quality of the finished Tuong. The soak water contains some soluble soybean nutrients and is pale yellow to clear in color. The Japanese discard this water, but some Vietnamese add salt and use it for pickling eggplants, etc.

There is no filtered soy sauce in Vietnam. Of the soy "sauces" made in Vietnam, about 60% is tuong cuda (ground jiang) and 40% is tuong ban (not ground; made in the village of ban). The origin of these two fermented Vietnamese soy products is unknown, but Mr. Hoang suspects they are of ancient origin. Mahayana Buddhists must be vegetarian. Buddhism went to Vietnam (from India) before it went to China, because Vietnam was an international port, trading with India. In about the 3rd century AD Buddhist monks came to Vietnam and spread Buddhism. They ate tofu and soy sauce.

What percent salt (sodium chloride) exists in your finished tuong? 10% in Tuong Cu Da for Vietnamese consumers. 6% in Bodhi Sauce for those who follow a low-salt diet.

In Vietnam are there any traditional soy sauces that have the liquid separated from the solids like Japanese soy sauce? If so, what are they called? Ans: Yes, Tuong Ban; it is usually used for cooking and is made in the Ban village.

One of the enclosures is from the International Register of Profiles. Born on 1 Oct. 1915 in Thanh-hoa province in Vietnam, Hoang Van Chi descended from a long line of Confucian scholars. He attended the best universities in Vietnam (1928-1940) earning a Baccalaureate in mathematics and another degree in physics, chemistry, and biology. He studied Oriental philosophies with a critical and non-dogmatic mind. Like his father and grandfather, he persistently opposed the French colonial rule. In 1940 he married Le Han Phan. In 1945 he joined the resistance and served the Ho Chi Minh government in many high offices, including Director of the National Mint. In 1948 he won an award for his brilliant work from Ho Chi Minh. But in 1955 he fled Saigon when the regime turned towards a full Communist dictatorship. He went into voluntary exile in Europe, settling in Paris from 1960-65 where he wrote his

book "From Colonialism to Communism." Address: Bowie, Maryland.

2389. Jootla, Susan Elbaum. 1981. Re: Making miso and tofu at home in India. Letter to William Shurtleff at Soyfoods Center, Dec. 15. 2 p. Typed, with signature.

• **Summary:** She and her husband have used up their first batch of homemade white miso and are now consuming a great pot of modified red miso. She thanks William and Akiko Shurtleff for the guidance their Book of Miso and Book of Tofu have given them in making these soybean products over the past few years.

She gives details of their experiments making tofu and miso 7,000 feet up in India's western Himalayas. Her husband had been trying unsuccessfully ever since he worked in Indonesia in the 1950s. Finally a friend who worked in a Florida health food store sent them The Book of Tofu. Using Epsom salts and an electric blender they succeeded in making good tofu. Susan then wrote an article on making tofu in India for an Indian woman's magazine, which was published in the spring of 1979. She is working on another longer article.

Having conquered tofu, she turned to miso. The big problem was getting koji starter, which she eventually obtained from Kikkoman in Tokyo.

Susan is now thinking of making tofu commercially on a small scale to cater to the interest evinced by several boarding houses in town. There are already a few soyamilk producers in India. In India, Susan uses tofu as "a substitute for paneer, which is the fresh cheese from milk, drained and pressed briefly to a compact solid texture. Tofu can be used in curries and pakoras (a very common snack, spicy fritters) in almost the same way as paneer is traditionally prepared, thus decreasing the problem of tofu's novel taste.

"We have also found that okara can be incorporated into dough for chapaties [chapatis], in equal proportions to the wholewheat flour. When the dough is seasoned with salt and ground cumin and coriander seeds, and baked as a chapati on a cast iron griddle, the resultant thick bread should be attractive for Indian cooks who begin to make tofu but are reluctant to waste the residue.

"As you can see, we are tofu enthusiasts and are trying to spread an appreciation of soyfoods in this country in a small way. So far, texturized soy protein is the only product that seems to have caught on here." Doubtless, this is because it does not require refrigeration, is not affected by heat or moisture, and is a useful and inexpensive meal stretcher.

Note: As of April 2008, Susan has long practiced Buddhist meditation and is the author of many related books. Google "Susan Elbaum Jootle" and you will see. Address: Jeet Villa, Dalhousie, H.P. [Himchal Pradesh], India.

2390. Kim, Gai W. 1981. Re: Introducing tofu to Sri Lanka. Letter to William Shurtleff at Soyfoods Center, Dec. 18—in reply to inquiry of Nov. 18. 1 p. Typed, with signature.

• **Summary:** “I sincerely hope that you and your wife will come to Sri Lanka in the near future to teach me how to make aburaage [deep-fried tofu pouches], which I simply fail to make although I tried all the instructions written in your *The Book of Tofu*.

“As for my project, at present, Tofu, which I named Boncheese here because ‘bean’ in Sinhalese is Bonchi and the method of making tofu is just like making cheese. Soy Bread are daily sold at the Cornel’s, the only Super Market in Colombo. I managed to make Miso out of Tempeh within a week’s time and you have to taste it to appreciate its beauty. The biggest breakthrough is to supply about 50 pounds of *soyamesh* [soybeans ground in water; soybase or soy puree] every morning to the Colombo General Hospitals and the Welikada Prison to be used in lieu of coconut milk for the daily curry cooked in their kitchen. The plant I helped to set up is using about 1.5 to 2 tons of de-hulled [soya] beans a month at the moment.

“I am enclosing a report from the Super Intendent [superintendent] of the Welikade Prison in Colombo for your perusal. If you are really interested in my project in can send you some correspondence and newspaper cutouts [clippings] upon request.

“I just finished writing a letter to BMI regarding an order of BMI 100 for the expansion of the project.”

A handwritten note says that Kim is contacting the Navy and Air Force canteens for her soy project.

Attached are two letters which are cited separately: (1) From H.G. Dharmadasa, Superintendent of Welikada / Welikade Prison (Oct. 1981). (2) From Dr. W.S. Weerasooria, Secretary, Ministry of Plan Implementation (16. Oct. 1981). Address: c/o UNDP in Sri Lanka, P.O. Box 1505, Colombo, Sri Lanka.

2391. Brown, Judy. 1981. Soyfoods: Catching on in the U.S. diet. *National Food Review*. Winter. p. 10-11. [6 ref] Address: USDA Economics, Statistics, and Cooperatives Service. Phone: (202) 447-6364.

2392. Elwell, Christian. 1981. Re: Inventory of miso at South River Miso Co. as of Feb. 10, 1981 (Catalog, mail order). Letter to wholesale customers of Ohio Miso Co., Dec. 3 p.

• **Summary:** This inventory and price list, the first offered by South River Miso Co., is handwritten with black ink on tan paper. On page 1 is a logo of a large miso vat in a square. Above the vat: “South River Farm Miso.” 1981. Below the vat: “One year barley: Golden yellow-brown mugi miso.” On this page is a table showing the price per bucket and price per pound based on the number of 5 gallon (45 lb) or 2 gallon (18 lb) buckets ordered. For example, if

you order 1-5 2 gallon buckets, the price per bucket is \$19.75 and the price per pound of miso is \$1.097. These prices are F.O.B. Conway, Massachusetts. The shipping via UPS of each 2 lb bucket to California is \$8.95. “Ingredients: Organically grown soybeans, barley koji, unrefined sea salt, deep well water. Naturally aged in wooden vats for one year, this miso is an unpasteurized living food. Best kept in a cool room or under refrigeration during summer months. Individual orders are shipped by U.P.S. on a weekly basis. Larger orders to retail stores, co-ops, distributors, and communities are shipped by common carrier on Wednesdays.”

Page 2 is a table showing that three products are available: (1) One year barley miso. 2,200 lbs available now. Wholesale price per pound: \$0.847 in 18 lb buckets or \$0.817 in 45 lb buckets. (2) One year brown rice miso (spring batch). 1,440 lbs available on 15 March 1981. Wholesale price per pound: \$0.98 in 18 lb buckets or \$0.95 in 45 lb buckets. (3) Two year brown barley miso. 3,000 lbs available on 15 March 1981. Two varieties are sold out: 18 month barley miso, and one year brown rice miso (fall batch).

Wholesale price per pound: \$1.03 in 18 lb buckets or \$1.00 in 45 lb buckets. Minimum wholesale order: 270 lbs. “No shipments will be made after May 1st until the next season, October, 1981.”

Also includes: Notice to our wholesale customers. About our production schedule and supply for next year, ’81-’82. About our two year barley miso available this year. Address: South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

2393. Hoang, Van Chi. 1981. How to make Tuong (Vietnamese unfiltered, ground soy sauce) (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 1 p. transcript.

• **Summary:** 1. Prepare soybeans: Dehull 10 lb soybeans with a mill and remove hulls with a seed cleaner. Roast the cotyledons at 450°F (232°C) for 15 minutes in any type of roaster. Pressure cook the roasted cotyledons with adequate water at 5 lb pressure for 30 minutes. Transfer the contents of the cooker (beans and water) into a plastic 40 liter (10.6 gallon) container, place in a warm room (80°F or 26.5°C) for 10 days; this enables the soybeans to undergo auto-hydrolysis. Each day skim off any surface foam.

2. Make glutinous rice koji: On the 3rd day of the soybean fermentation, soak 10 lb of glutinous rice overnight. Drain and steam at atmospheric pressure for 30 minutes, then cool to body temperature. Mix koji starter (*Aspergillus oryzae* mold spores propagated on glutinous rice) with water, sprinkle over rice, then drain on a perforated tray. Transfer inoculated rice into shallow wooden trays (each 10 by 15 by 4 inches deep) and place them in a warm koji room (80°F or 26.5°C) for 6 days. Do

not stir during this time. Finally the mold-fermented rice koji (*moc*) will be floating in a glucose syrup. Mix the koji with 7.5 lb salt, grind the mixture in a mill, then transfer ground mixture to a plastic vat and leave for 2 days to stop the fermentation.

3. Combine and ferment: Place the fermented soybeans and their water in a Hobart VCM (Vertical Cutter Mixer) and blend until smooth. Mix in the ground salted koji and allow the mixture to stand at room temperature for 3 days. Bottle and cap without heating. Use as a dipping sauce for fresh or fried tofu, or as a pickling medium. In Vietnam, Tuong is also used as a dipping sauce for roast beef, as a cooking sauce for fish, or as a pickling sauce for pork.

Hoang adds: There are less than 200,000 Vietnamese in the USA, and about the same number in France. Traditionally, soy sauce was made and used mostly in North Vietnam. But for the last 30 years (i.e., since about 1951) there has been no soy sauce in North Vietnam due to two factors: (1) The shortage of soybeans and rice; (2) The fact that those who formerly made it were classified as "landlords" by the Communist regime. Today in Vietnam people try to make it using peanut- or cottonseed presscake instead of soybeans. Address: Bowie, Maryland. Phone: (415) 253-1065.

2394. Shurtleff, William; Aoyagi, Akiko. 1981. *La soya y sus derivados: Tofu, miso, tempeh* [The soybean and its products: Tofu, miso, tempeh]. *Quadernos de Natura (Editorial Posada, Mexico)* No. 20. 87 p. Dec. [3 ref. Spa] • **Summary:** Contents: Introduction: The miracle of soya, by Ma. Teresa Piazza. 1. Soya: Source of protein. Ten reasons that soy will be the protein source of the future. 2. Tofu: Introduction A family of distinctive foods. A storehouse of high-quality protein. Cost of protein from different sources. Low in saturated fats: free of cholesterol; an ideal diet food. Natural backbone of the meatless diet. Buying and storing tofu. Making tofu at home and in communities. Soybeans, tofu, and the world food crisis. Table of different tofu varieties. Tofu shops in Japan. Our favorite tofu recipes.

3. Miso: Introduction. Delightfully varied; highly versatile. A nutritional treasure trove. The varieties of miso (including a table). The preparation of miso. Traditional natural miso and quick modern miso. A brief history of miso. Buying, storing, and using miso. Miso in Japan. Traditional Japanese miso shops and modern factories. Making miso at home. Our favorite miso recipes (contains 16 recipes).

4. Tempeh: Introduction. Rich in protein and vitamin B-12. Tempeh comes west (a brief history). How tempeh is made. The miracle of fermentation. Buying and storing tempeh. Tempeh for Latin America. Our favorite tempeh recipes (contains 8 recipes).

Note: This book is largely a Spanish-language translation of three English-language brochures written by

the authors in the late 1970s: What is tofu? What is miso? What is tempeh? Chapter 1 is summarized from the first chapter of *The Book of Tempeh*. Address: Soyfoods Center, P.O. Box 234, Lafayette, California.

2395. Soycrafters Assoc. of North America. Soyfoods Center. 1981. Per capita use of soyfoods grows to nearly 9 lbs. in U.S. *Vegetarian Times* No. 52. Dec. p. 6.

• **Summary:** Based on a Sept. 1981 news release copyrighted by the Soyfoods Center and the Soycrafters Assoc. of North America, this summary of a market study gives for each major soyfood product the number of manufacturers in the USA, Canada, and worldwide. The tons/year of raw soybeans used. And (in the USA only) the tons of food produced, wholesale value, retail value, and number of employees.

In the USA, the number of manufacturers, tons of product produced, and retail value in million dollars are as follows for low technology, traditional: Tofu and tofu products (154, 22,700, \$50.4), tempeh (32, 494, \$1.78), soymilk and soymilk products (14, 148,000, \$118.0), soy sauce, shoyu & tamari (15, 54,837, \$203.0), soynuts and soynut butter (12, 2,750, \$4.6), miso (10, 2,000, \$4.8), soy sprouts (5, 360, \$0.25), etc. Subtotals for low tech (284 manufacturers, 231,305 tons produced, \$392.25 retail value).

For high-technology, modern: Soy flour & grits, defatted (12, 400,000, \$190.4), textured, extruded soy flour (TSP/TVP) (2, 200,000, \$179.2), soy protein concentrates (3, 45,000, \$56.7), soy protein isolates (3, 45,000, \$126.0), meat analogs (secondary products) (6, 20,000, \$55,000). Subtotals for high tech (26 manufacturers, 710,000 tons produced, \$615.6 retail value). Total low and high tech: 310 manufacturers, 941,305 tons produced, and \$1,007.85 million dollars.

Also published in *New Age* (Jan. 1982, p. 17) under the title "Tofu Takes Over."

2396. Wolf, Walter J. 1981. Foreign travel report. Peoria, Illinois. 4 p. Dec. 18. Typed, with signature.

• **Summary:** "Country visited: Japan, Oct. 10-21, 1981. Purpose of trip: (a) Participate in the U.S./Japan Cooperative Program in Natural Resources (UJNR), Protein Resources Panel Meeting; (b) participate in UJNR panel study tour; (c) visit research institutes and industrial laboratories working on soybean proteins; and (d) participate in symposium on soy protein foods. **Summary:** The UJNR meeting in Tsukuba included 10 presentations by seven Japanese research workers from six different research institutes and three U.S. scientists from three USDA regional research centers. Topics discussed included... (f) single cell protein production from soybean cooking waste waters; (g) soybean storage; (h) food uses of soy protein; and (i) nutritional evaluation of soy proteins. The study tour

included a visit to a miso and soy milk factory which was impressive and confirms earlier reports that soy milk has become very popular in Japan in the past 5 years. Visits to industrial laboratories revealed that soy proteins are now used in a large variety of foods. Flavor is one of the last problems holding back development of soy protein-based foods.”

The UJNR program, initiated in 1964, plays an important role in implementing the policy of scientific cooperation between the United States and Japan. The protein panel was organized in 1968, and there are now 17 different panels in UJNR.

Dr. Ebine reported that about 790,000 metric tons (29 million bushels) of soybeans are used in traditional Japanese foods—miso, natto, tofu. Organizations visited included Okazaki Marusan Co. Ltd (makes miso, soy milk, and soy yogurt), Research Institute for Food Science of Kyoto University at Uji, Nisshin Oil Mills Ltd., Ajinomoto Co., Inc., Fujipurina Protein Ltd. (Fuji Oil Co. has a joint venture with Ralston Purina Co.). Address: Leader, Meal Products Research, Oilseed Crops Lab., Northern Regional Research Center, Peoria, Illinois 61604.

2397. Dronne, Yves. 1981. Le problème mondial du soja [The problem of soybean worldwide]. Paris: Institute National de la Recherche Agronomique. [Fre]*

• **Summary:** Gives details on Japanese consumption of industrially processed plant proteins (tons/year of defatted soybean meal equivalent): Unfermented: Tofu 84,200, Dried-frozen tofu 22,400, Other products. including texturized soy protein 87,800. Fermented: Soy sauce 173,000, miso 157,400, natto 55,200. Total: 580,000

Concerning Japanese consumption of new “purified” protein in tons/year. In 1971/1977 total consumption was 27,300/44,000. Of this the amount made from soybeans was 15,900/17,000 and the amount made from wheat gluten was 11,400/27,000. As for the texture, the amount sold in the form of a powder was 17,400/19,600 and the amount sold in textured form was 9,600/24,400.

In 1977, of powdered products, the amount from soybeans was 9,500 (6,000 isolates and 3,500 concentrates) and from gluten 10,100. Of the textured products, the amount from soybeans was 7,500 (6,000 dry extruded, 1,500 moist, and no paste), whereas the amount from gluten was 16,900 (200 dry extruded, 12,000 moist, and 4,700 paste). Address: Paris, France.

2398. Hirayama, Takeshi. 1981. [Does daily intake of miso reduce gastric cancer risk?]. Paper presented at 40th Annual Meeting, Japan Cancer Assoc. 1 p. English abstract. [Jap; Eng]

• **Summary:** Daily intake of miso was found to significantly reduce gastric cancer in an ongoing study of 122,261 males and 142,857 females aged 40 or above in 29 health center

districts in Japan 1966-78, the rates being 171.9, 210.2, 246.0, and 255.9 in males and 77.8, 85.3, 97.5, and 113.6 in females in daily, occasional, rare, and non-consumers respectively. These relationships remained significant when observed by smoking habit and socio-economic status. The observed beneficial effect could come from substances in the miso, but it is also possible that this just reflects the effects of some other substance(s) closely associated with the intake of miso soup, such as green-yellow vegetables. Address: Epidemiology Div., National Cancer Center Research Inst., Tokyo, Japan.

2399. Hoang, Van Chi. 1981. The Vietnamese and their favorite sauces. 7 p. Unpublished manuscript.

• **Summary:** Fish too small to be sold were made into a sauce called *nuoc mam*. Since the climate is much warmer in South Vietnam, fish were more abundant there than in the North. Also, because the *nuoc mam* manufacturing process is the action of an enzyme that exists in the stomach of the fish and the efficiency of that enzymic action depends on the average night temperature, *nuoc mam* produced in the South was of better quality. Unfortunately, neither *nuoc mam* nor soy sauce is produced in either parts of Vietnam. There is no more *nuoc mam* because there are no more fish.

The Vietnamese brand of soy sauce is called *tuong*. *Tuong* production has always been a cottage industry practiced in a few villages. Making koji, or *moc* in Vietnamese was the most difficult and tedious part of the soy sauce manufacturing process. *Tuong* disappeared from existence in North Vietnam after 1955 and in South Vietnam after 1975 due to 3 factors: 1. Shortage of food. 2. Shortage of rice. Since soybeans are considered a luxury because “they do not fill the stomach,” peanut or cottonseed presscakes are suggested instead. 3. Manufacturing was limited to a few villages. The professional *tuong*-makers were better off than other villagers. Since manufacturing required a large courtyard, scores of porcelain jars and enough capital to store soybeans and sweet rice for many months, they were classified as exploiters and their houses and belongings were confiscated. Address: Bowie, Maryland.

2400. **Product Name:** [House Mabo-dofu Seasoning Sauce Mix].

Foreign Name: Hausu Maaboo-dôfu no Moto.

Manufacturer’s Name: House Shokuhin Kogyo.

Manufacturer’s Address: Japan.

Date of Introduction: 1981.

Ingredients: Sugar, sesame oil, spices, soy sauce, lard, starch, oyster sauce, salt, monosodium glutamate, soy bean paste, red pepper, beef extract, citric acid.

Wt/Vol., Packaging, Price: 7 oz (200 gm). In foil packet in paperboard box with full-color photo on cover.

How Stored: Shelf stable.

New Product–Documentation: Label in Japanese. Distributed in the USA by Nishimoto Trading Co., Los Angeles, CA 90058. Mix diced tofu with this sauce to make the popular Chinese recipe, Mabo-dofu.

2401. Kawamura, Wataru. 1981. Amerika-ban Miso no hon [The Book of Miso published in America]. *Shin Eiyō (New Nutrition)* p. 62-66. Month unknown. [1 ref. Jap]
Address: Japan.

2402. **Product Name:** Takuan Daikon Pickles (with Miso).
Manufacturer's Name: Macrobiotic Kitchens Unlimited.
Manufacturer's Address: Melrose Ave., Los Angeles, California.

Date of Introduction: 1981.

Ingredients: Daikon, nuka (rice bran), water, kombu, miso, salt.

Wt/Vol., Packaging, Price: ½ to 1 lb, retails for \$4 per lb (1981).

How Stored: Refrigerated.

New Product–Documentation: Talk with R. Bruce Paine of Boston, Massachusetts. 1992. Oct. 1. In Los Angeles he made daikon nuka pickles, with a little miso added to the nuka (rice bran) help the fermentation. He became known throughout the Los Angeles area as the “nuka pickle maker.” At one time, in the summer of 1983, he had about 50 containers fermenting at one time.

Talk with R. Bruce Paine. 1993. Dec. 8. Bruce arrived at the macrobiotic community in Los Angeles in 1981. Roy Steevensz was the first person to make these pickles in Los Angeles; he was making and selling these pickles before Bruce arrived, so they could have been introduced as early as 1980. He bought the daikon in Los Angeles, and he was amazed to see how many were sold there and how huge they were—some being up to 6-8 inches in diameter. The daikon were air dried under an overhang outdoors. He dried the nuka in pans in a large rotating oven at Macrobiotic Kitchens Unlimited. Then he made a mash by mixing the nuka with miso dissolved in water, kombu, and salt. In the tubs he placed alternate layers of daikon and nuka until each tub was full. On the lid he wrote that day's date and the date of expected harvest. The pickles were made in white plastic tubs, each 5½-6 gallons in capacity; they were allowed to cure for 3-4 months in a warehouse (or later outside in the shade) behind Grain Country, a macrobiotic and natural food store on Melrose Ave. The takuan were sold refrigerated in ½ to 1 lb sizes for about \$4/lb.

2403. **Product Name:** [Mitsukan Ma-Bo Tofu Seasoning Mix].

Foreign Name: Mitsukan Ma-Bo Tōfu no Moto.

Manufacturer's Name: Nakano Vinegar Co. Ltd.

Manufacturer's Address: Japan.

Date of Introduction: 1981.

Ingredients: Dehydrated soy sauce, powdered miso, sugar, potato starch, salt, powdered chili paste, dehydrated chicken extract, dehydrated garlic, dehydrated ginger, dehydrated oyster extract, monosodium glutamate (to enhance flavor).

Wt/Vol., Packaging, Price: 1.89 oz (54 gm). 2 foil packets in paperboard box with color photo of recipe on front. \$1.08.

How Stored: Shelf stable.

New Product–Documentation: Label in Japanese. Mix diced tofu with this sauce to make the popular Chinese recipe, Mabo-dofu. Recipe on back.

2404. **Product Name:** [Nikko-Mame Defatted Soybean Flakes for Shoyu and Miso, Sakae-Mame Soy Flour for Tofu, ProtFlour Soy Flour for Food and Milk Replacer, Nikoprotein High Protein for Food].

Manufacturer's Name: Nihon Koyu Co. Ltd.

Manufacturer's Address: No. 32 Bungocho, Higashi-ku, Osaka, Japan.

Date of Introduction: 1981.

New Product–Documentation: Soya Bluebook. 1981. p. 63.

2405. **Product Name:** [Nikko-Mame {Defatted Soybean Meal for Shoyu and Miso}, and Sakae-Mame {Soybean Meal for Tofu}].

Manufacturer's Name: Nikko Oil Mills Co. Ltd.

Manufacturer's Address: Kanda Ogawamachi 2-12, Chiyoda-ku, Tokyo, Japan.

Date of Introduction: 1981.

New Product–Documentation: Soya Bluebook. 1981. p. 63; 1982. p. 67, 76.

2406. **Product Name:** Tempeh Burger (with Miso).

Manufacturer's Name: North Coast Tempeh Co.

Manufacturer's Address: c/o Cleveland Tofu Co, 8021 Euclid Ave., Cleveland, OH 44121.

Date of Introduction: 1981.

Ingredients: Tempeh (organic soybeans, water, *Rhizopus* culture), tamari, barley miso, spring water, corn oil, rice vinegar, spices.

Wt/Vol., Packaging, Price: 8 oz (3 burgers).

How Stored: Refrigerated or frozen.

New Product–Documentation: Label. 1982. 4.25 inch diameter. Red, green, blue, and yellow on white. Logo of Jack and the Beanstalk. “No cholesterol. All natural. Pan Fry, Bake, Steam, or Grill.” Jeff Narten. 1987. “History of North Coast Tempeh and its Products.” 4 p. Dec. 7. “Our tempeh burger is our number one product after tempeh. It is unique to my knowledge in that it is a fairly complicated marinade and depends less on tamari than many I've tasted.”

2407. **Product Name:** [Manna Tofu-Based Spreads (Natural, Dill, Sandwich), and Soyanaise (Imitation Mayonnaise)].

Foreign Name: Manna Tofu Spreads (Naturel), Soyanaise.

Manufacturer's Name: Stichting Natuurvoeding Amsterdam. Renamed Manna Natuurvoeding B.V. in 1982.

Manufacturer's Address: Meeuwenlaan 70, 1021JK, Amsterdam, The Netherlands.

Date of Introduction: 1981.

Ingredients: Naturel: Manna's tofu-soycheese (sojakaas)*, unrefined cold-pressed vegetable oil, grain [corn] syrup (graanstroop), demeter-apple cider vinegar*, ume (Japanese plum) paste, mustard, white seasalt, guar vegetable binder (* = van biologische grondstoffen of teelt = from organically grown raw materials or agriculture).

Wt/Vol., Packaging, Price: 215 gm glass jar.

How Stored: Shelf stable.

New Product–Documentation: Letter from Sjon Welters. 1982. April 16. "Manna started this month to market tofu spreads, which are a great success right now. It lasts for at least 3 months refrigerated, with no chemicals or artificial additives." Richard Leviton. 1983. Trip to Europe with American Soybean Assoc. Oct/Nov. Unpublished manuscript. p. 25. "Manna started to make tofu spreads in 1981. They are now made in a Hobart blender. 200 kg/week of tofu is used to make 1,000 x 250 gm bottles of spreads. Some are pasteurized at 85°C and some sterilized at 100°C. The flavor of the spreads is lost at temperatures higher than 85°C. The Manna spreads are 3.45 guilders per 45 gm jar for 3 flavors. The natural spread contains tofu, unrefined oil, miso, apple vinegar, corn syrup, sea salt, guar." Soya Bluebook. 1987. p. 100. Label. 16.5 cm by 3.5 cm.

2408. **Product Name:** [Tofurin Tofu Cheese (With Miso)].

Foreign Name: Tofurin.

Manufacturer's Name: Stichting Natuurvoeding Amsterdam. Renamed Manna Natuurvoeding B.V. in 1982.

Manufacturer's Address: Meeuwenlaan 70, 1021JK, Amsterdam, The Netherlands.

Date of Introduction: 1981.

Ingredients: Tofu, miso.

New Product–Documentation: Richard Leviton. 1983. Trip to Europe with American Soybean Assoc. Oct/Nov. Unpublished manuscript. p. 25. "Tofurin tastes like cheese. It is tofu fermented with miso, then sterilized at 100°C for 1 hour." Letter from Sjon Welters. 1989. July 24. Tofurin was developed by Sjon Welters for Manna and introduced together with Manna's tofu spreads [in 1981], in the same size glass jar. It was not really fermented, just tofu mixed with miso.

Manna Bulletin. 1983. 5(4):1. June. The price of Tofurin has been reduced from 3.90 to 3.45 guilders.

2409. Wang, H.L.; Fang, S.F. 1981. History of Chinese fermented foods. *USDA Miscellaneous Publication FL-MS-333*. Reprinted in 1986 in C.W. Hesseltine and H.L. Wang, eds. *Mycologia Memoir No. 11, Indigenous Fermented Food of Non-Western Origin*. [6 ref]*

• **Summary:** Discusses the early history of numerous types of chu (similar to koji, grown on wheat, barley, millet, and/or rice), chiang (salted sauce), shi or tou-shi (soy nuggets), chiang-you, tou-yu and shi-tche (the liquid from shi), tou-fu-ru (fermented tofu or sufu), La-pa-tou (Mucor fermented beans), Mei-tou-tcha (Meitauza, fermented okara), tsu (vinegar), yan-tsai (salted vegetables). Address: 1. USDA/NRRC, 1815 N. University St., Peoria, Illinois 61604; 2. Inst. of Microbiology, Academia Sinica, Beijing, China.

2410. Akizuki, Tatsuichiro. 1981. *Nagasaki 1945: The first full-length eyewitness account of the atomic bomb on Nagasaki*. Translated by Keiichi Nagata. London, Melbourne, and New York: Quartet Books. 158 p. Edited and with an introduction by Gordon Honeycombe. [Eng]

• **Summary:** In the chaos that followed the explosion of the atomic bomb over Nagasaki, Dr. Akizuki tirelessly tended nearly 200 seriously-ill patients. Today he still works in that hospital. The book describes Dr. Akizuki's feelings that miso helps alleviate the effects of radiation. A powerful and moving account. Address: Japan.

2411. Altman, Nathaniel. 1981. *Nathaniel Altman's total vegetarian cooking*. New Canaan, Connecticut: Keats Publishing, Inc. 229 p. Index. 18 cm. Series: A Pivot Original Health Book. [180 ref]

• **Summary:** The author was born in 1948. The first page of the book begins: "It's not just spinach. The vegetarian way of eating is incredibly varied, employing such exotic, appealing foods as calcium-rich hijiki, tempeh from Indonesia, and tofu."

The glossary (p. 139-44) describes: Lecithin, milk (soy), miso, soybeans, soy grits, sprouts (incl. soy), tamari, tempeh, tofu, and textured vegetable protein (TVP).

Chapter 11, titled "A vegetarian diet can save you money" (p. 146-51) mentions soybeans and soyfoods (incl. soy milk powder, dry tofu [probably dried-frozen tofu], soy sprouts, soy flour, soy sauce, tofu) repeatedly as low-cost sources of protein.

The book has several very interesting appendixes: C. The vegetarian bookshelf (p. 208-10). D. Vegetarian contacts—Some vegetarian societies and publications (p. 211-12). Bibliography by chapter (p. 213-20).

2412. Aoki, Hiroshi. 1981. *Misoshiru sanbai kenkô-hô* [Three bowls of miso soup daily for good health]. Tokyo: Goma Books. 220 p. Illust. 20 cm. [Jap]

• **Summary:** Miso soups and health recipes. He worked for food companies, including Ajinomoto, for 30 years on

development of new soy protein foods. A popularizing book. Discusses Hirayama.

Contents: Preface. Why are miso soups and soyfoods appreciated again now? 1. The many benefits from eating miso soups and soyfoods every day. 2. The Japanese people have forgotten the goodness of miso soups and soyfoods. 3. Healthy soyfoods: From miso to soymilk (miso, natto, shoyu, tofu, deep-fried tofu pouches, dried-frozen tofu, yuba, okara, roasted whole soy flour or kinako, soymilk, soy oil). 4. Miso soups and soybean cooking make a healthy body. Soybean recipes which are suited to people in the younger generation. Mother's favorite recipes are good for health, too. Appendix. Maps of Japan showing areas of miso soups and natto.

2413. Batra, L.R. 1981. Fermented cereals and grain legumes of India and vicinity. *Advances in Biotechnology* 2:547-53. [12 ref]

• **Summary:** Waries, a black gram paste, made from *Phaseolus mungo* fermented with *Leuconostoc mesenteroides*, is somewhat like Japanese miso. Punjabi waries and chunna waries are used as adjuncts in cooking. The paste is heavily salted and fermented for 2-8 days, in North India or Pakistan.

Also describes rice beer, pachwai, murcha, bakhar, jalebies, na (flat leavened bread), pool waries, black gram products, idli (small fermented steamed cakes), dosa (pancakes), and hoppers (pancakes). Address: Mycology Lab., Plant Production Inst., USDA, Beltsville Agricultural Research Center, Beltsville, Maryland.

2414. Beasley, Sonia. 1981. The spirulina cookbook: Recipes for rejuvenating the body. Boulder Creek, California: University of the Trees Press. viii + 184 p. Illust. by Reenie Haughey. Background by Dr. Christopher Hills. Index. 15 x 23 cm.

• **Summary:** Contains over 100 recipes using spirulina, a type of fresh-water algae. Soy-related recipes include: Scrambled eggs with tofu (p. 2). Pam's green goop (with tofu and miso; p. 18). Spirulina Aztec soup (with miso; p. 29). Chris's spirulina soup (with miso; p. 41). Pam's dressing (with miso; p. 166).

Note: Sonia was born in 1941 in Ceylon. She is a gourmet cook with her own catering business specializing in international cuisine. On the rear cover is a color photo of Sonia Beasley and Dr. Christopher Hills.

2415. Cadwell, Jane. 1981. O Livro da Soja [The book of soya]. Sao Paulo, Brazil: Editora Ground Ltda. 79 p. Illust. Index. 21 cm. [Por]

• **Summary:** Contents: Preface. Introduction. The soybean. Soybeans and health (nutritional composition). Our daily foods and our health. Auxiliary foods and ingredients (incl. miso). Kitchen utensils. Recipes: Whole soybeans (incl.

cooked ground soybeans, green vegetable soybeans {*Soja fresca (verde)*}, soynuts {*castanhas de soja*}) Soymilk (incl. homemade using the Cornell method, soymilk yogurt), okara, tofu (incl. homemade, tofu miso soup, cakes, pies, baby foods).

Jane writes in a letter dated 5 July 1982 of her book: "My book is the first one [published in Brazil] exclusively on soyfoods. The intent was to show people all the varieties of things that they could make starting principally from whole dry soybeans. Consequently I did not include the topics of miso, soyflour, and textured proteins. I began writing the book as a result of a government campaign last year to get people to use soybeans in place of regular beans. As you probably know, rice and beans is really the principal dish at the noon and evening meals. There was a shortage of the regular beans and the price was very high... Consequently the government campaign to introduce soybeans. They were ridiculously cheap, yet there was hardly any information on how to use them. Thus—my book... Soybeans are now available in many supermarkets and well as health food stores and oriental shops." Address: Brazil.

2416. Ford, Richard. 1981. Soy foodery cookbook: Tofu, tempeh, miso, sea vegetable recipes and resources. Santa Barbara, California: Published by the author. ii + 78 p. Illust. No index. 22 cm. Spiral bound. [20+ ref]

• **Summary:** Contents: Introduction: Creative balance. Soyfoods: Foods for the future. Soyfoods resources. Tofu: A soy product catching on. Tempeh: The super soy. Soysage. Sea vegetables: The tide is rising. Miso: A food doing it with culture. Soyfood travelers guide. Contains many recipes using tofu, tempeh, sea vegetables, and miso. At the end of each chapter is a bibliography. Address: Santa Barbara, California.

2417. Forster, Dorothy. 1981. Cooking with Tvp: Exciting, nutritious and economic dishes using textured soya protein. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 96 p. Recipe index. 18 cm.

• **Summary:** Contents: Introduction. 1. Soups. 2. Sea food favorites [vegetarian, with dulse often used as a seasoning]. 3. Main meals with mince. 4. Main meals with chiplets. 5. Main meals with chunks. 6. Main meals with slices (or chunks). 7. Some dishes with soya grits.

Tvp is made from de-fatted soya flour which is extruded through a die, under pressure, to make the different sizes of particles. "There are several varieties and we suggest you experiment until you find the type you are happy with... When reconstituted, Tvp can absorb twice its own weight in liquid. Thus 150g (5 oz) will be equal 450g (1 lb) of meat, when soaked."

Soya grits (with 2 recipes) and soya milk are also discussed. "There are several makes of soya milk on the

market in either liquid or powder form as a useful alternative to milk.” Miso is mentioned as a seasoning for TVP.

Suppliers of Tvp in the UK are: Lotus Foods Ltd. in London (formed by the author, Dorothy Foster), Direct Foods Limited in Petersfield, Hampshire (Proto-veg Tvp), Itona Products Ltd. in Wigan, Lancs., Life and Health Foods in Norwich, and Marigold Health Foods Ltd. in London (Vitpro Tvp). Address: England.

2418. Gandjar, I. 1981. Soybean fermentation in Indonesia. *Advances in Biotechnology* 2:531-34. [9 ref]

• **Summary:** Discusses various kinds of tempeh, taoco (Indonesian miso), kecap (Indonesian soy sauce), tempe gembus (okara tempeh; sold in every market and village in Central and Eastern Java), oncom tahu (okara onchom), and traditional fermentation processes. Address: Dep. of Biology, Faculty of Mathematics and Natural Sciences, Univ. of Indonesia, Jakarta, Indonesia.

2419. Hesseltine, Clifford W. 1981. Thom Award Address: A microbe’s view of fermentation. *Developments in Industrial Microbiology* 22:xv-xvi, 1-18. [21 ref]

• **Summary:** Pages xv to xvi give a brief biography and photo of Dr. Clifford W. Hesseltine, winner of the tenth Charles Thom Award on 14 Aug. 1980, presented by the Society for Industrial Microbiology. Dr. Hesseltine knew Dr. Charles Thom and was strongly influenced by him, even though the two men never worked together.

“Dr. Hesseltine’s studies on the taxonomy of the Mucorales have resulted in a classification now in worldwide use... The research of Dr. Hesseltine on mycotoxins is world famous. He has directed the aflatoxin project of the Fermentation Laboratory, NRRC...

“Dr. Hesseltine’s studies on fermented foods are equally well known. Included in this research has been the use of soybeans and cereals in Oriental fermented foods including tempeh, miso, Chinese cheese, and shoyu.”

Just 100 years ago the first pure cultures of fungi were made by Brefeld, a German, who published his results in 1881. The development of submerged culture of penicillin production began in 1941 at the NRRL. The USA lost its leading role in industrial fermentation early in the 1960s due to weakness in research in many fields. Address: NRRC, Peoria, Illinois.

2420. Hoshijo, Kathy. 1981. Kathy cooks... naturally. The Self Sufficiency Assoc., P.O. Box 1122, Glendale, CA 91209. 497 p. Illust. Index. 28 cm.

• **Summary:** This excellent natural-foods, vegetarian cookbook, written with a nice balance of heart and mind, contains over 1,000 recipes—many written from an Hawaiian viewpoint. The lovely and talented author is the hostess of a popular TV series “Kathy’s Kitchen.” In the long chapter

titled “Soybeans” (p. 349-92) is an introduction to the nutritional value of soybeans and soyfoods, plus many recipes for using and making the following at home: Whole dry soybeans (often cooked and mashed; 13 recipes), soy nuts (deep-fried or dry roasted), kinako (roasted soybean flour; how to make + 1 recipe), soy milk (how to make + 19 recipes), yuba (how to make + 11 recipes) okara (15 recipes), tofu (how to make + 50 recipes), frozen tofu (“Homemade TVP”—how to make + 7 recipes), miso (18 recipes). Address: Self-Sufficiency Assoc., 2525 South King St., Honolulu, Hawaii 96826, or P.O. Box 1122, Glendale, California 91209.

2421. Jaffrey, Madhur. 1981. Madhur Jaffrey’s World-of-the-East vegetarian cookery. New York, NY: Alfred A. Knopf, Inc. 461 p. Illust. by Susan Gaber. Index. 20 x 20 cm. A second edition was published in 1983 in London by J. Cape.

• **Summary:** The Indian woman author of this creative book presents 21 recipes for bean curd (tofu), 7 for tempeh, and some for yuba and miso. Green soy beans with sauce (p. 7). Cabbage with miso (p. 15). Eggplant slices with white miso (p. 22-23). Fresh soy beans, steamed (p. 57). Spinach with fermented bean curd (p. 59). Stuffed yellow squash (with yuba, p. 62-64). Pecel (Vegetable salad with spicy peanut sauce, plus tofu and tempeh; p. 73-74). Tempura (with tofu; p. 75-77). Soy bean sprouts (how to grow; p. 100). Soy-bean and mung-bean sprouts seasoned with sesame oil (p. 105). Tempeh, Fried tempeh, Fried, preseasoned tempeh, Sambal goreng tempeh kering (Sweet and sour tempeh), Tempeh cooked in coconut milk (p. 108-110). Thai fried rice (with red fermented tofu; p. 150-51).

One chapter (p. 160-89) is titled “Soy milk, bean curd, and wheat gluten.” Making your own soy milk. Making your own bean curd. Udoфу (*Yudofu*, simmering bean curd with seasonings). Bean curd with watercress. Korean-style bean curd in a hot water bath. *Hiya-yakko* (Chilled bean curd). Bean curd with Chinese parsley. Bean curd with broccoli. Cabbage cooked with bean curd. Bean curd with a deliciously spicy sauce. Carrots and beans with bean curd dressing. Bean curd, mushrooms, and peanuts in hoisin sauce. Sautéed bean curd. Tofu dengaku (Toasted bean curd with a miso topping). Fried bean curd cubes, soy-bean sprouts sautéed with fried bean curd. Fried bean curd with a sweet-and-sour sauce. Fried bean curd cakes with a mustard surprise. Inari-zushi (“Bags” of fried bean curd stuffed with sushi rice). Pressed bean curd with cabbage. Salad of pressed bean curd, mung-bean sprouts, and agar-agar. How to make fried and baked wheat gluten balls (plus 5 gluten recipes). Buddha’s delight (with yuba and fried bean curd).

Chawanmushi (Steamed savory custards, with tofu; p. 192-94). Omelette with bean curd (p. 198-99). Soy sauce eggs (p. 209). Paneer (milk cheese; p. 237-40). Hot or cold noodles with a soy-sauce dressing (p. 248). Noodles with a

hot-and-sour bean sauce (p. 250). Vegetarian mee krob (Crisp noodles with pressed bean curd and eggs, from Thailand, p. 255-56). Noodles with quail eggs, mushrooms, spinach, and yuba (Japan; p. 256-57). Hoppers (yeast pancakes from Sri Lanka). Roti (Flat whole-wheat bread). Delicious stock made with soy-bean sprouts. Clear soup with enok mushrooms, bean curd skins [yuba], and spinach (p. 297). Clear soup with soft bean curd and celery cabbage (p. 298). Miso soup with bean curd (p. 307). Miso soup with carrots and mushrooms (p. 308). Fried, munchable soy beans [soynuts] (p. 321-22). Potato and tempeh patties (p. 339). Dipping sauces (with soy sauce; p. 357-59). Kombu relish (with soy sauce, p. 374). Shoyu daikon (White radish pickled in soy sauce). Ginger quick-pickled soy sauce (p. 375). Aomidaikon (Quick pickled small white radishes, with slightly sweet yellow miso; p. 377-78). Chinese-style jellied bean-curd sweetmeat with a peanut topping (p. 399-400).

General information (p. 418-36; lots on soyfoods, see: bean curd [regular, fried, fermented, pressed, pressed seasoned], kochu chang [jang], miso, soy-, tempeh, yuba). Sources (of ingredients; p. 437-40). Address: New York City, NY.

2422. Kimura, Yuko. comp. 1981. *Amerika-jin no kangaeta miso ryôri* [Miso recipes developed by an American (William Shurtleff)]. Tokyo. vii +108 p. Illust. 13 x 19 cm. Translated by the Ajisai Group, in Ms. Kimura's English class. [1 ref. Jap]

• **Summary:** Contents: Forward (preface). Menu. Dips. Hors d'oeuvres. Spreads. Sandwiches. Dressings for salads. Salads. Sauces. Desserts. Address: 1-10-3, Tamagawa Gakuen, Machida-shi, Tokyo 194, Japan.

2423. Kusumoto, Kenkichi. 1981. *Miso raisan* [In praise of miso]. Tokyo: Kobunsha. 262 p. Illust. 18 cm. [22 ref. Jap]

• **Summary:** Superficial talks/essays. About famous Japanese favorite miso soups and miso soups in each season.

Contents: Preface. 1. In praise of miso soups! 2. Miso soups throughout the four seasons. 3. Country village miso soups. 4. Topography/geography of miso. 5. Topography/geography of miso soups. 6. Miso soups and Haiku (poems). Address: Professor, Tanaka Chiyo Junior College, Meguro-ku, Tokyo, Japan.

2424. McCallum, Cass. 1981. *The real food guide*. Vol. 2: Pulses, grains and seeds. Glasgow, Scotland: The Molendinar Press. 196 p. Index. 20 cm.

• **Summary:** The section on "Anti-nutritional factors in pulses" discusses those found in many legumes (such as haemagglutinins, trypsin inhibitors, phytic acid, flatulence factors) and those of importance in specific legumes; for soybeans, only heat-resistant trypsin inhibitors are mentioned. The section on "Basic bean cookery" gives

general guidelines and tips (never add salt until beans are cooked tender). A table (p. 54) shows that soybeans require the longest cooking time of any bean listed.

The section titled "A-Z pulses" gives details (incl. the scientific name) concerning many legumes listed alphabetically. Includes adzuki, kura mame [sic, kuro mame = black soybeans] (p. 65), and winged beans. By far the longest section is on soy beans (p. 71-82). Contents: Introduction. Nutritional values. Dried soy bean products: Soy grits, soy coffee, soy flour (full fat, medium fat, fat free), soy nuts, soy milk, soy yolk (a concentrated form of soy flour), textured vegetable protein, soy splits, tofu powder. Fermented soy bean products: Black beans—fermented, chao, chee-fan, chiang (Chinese miso), Hamanatto, ketjap, koji, meitauza, miso, mame miso, Hatcho miso, kome miso, mugi miso, natto, okara. Soy sauces: Introduction, Chinese soy sauce, ketjap, synthetic sauce, tamari. Sofu [sic, sufu], tahuri, tamari, tao-cho, taokoan or tao koan, taotjo or tao dji, tempeh, tofu. Tofu from whole beans (homemade recipe). Tofu from powdered [soy] milk.

The part titled "Recipes" (p. 129-92) is divided into three sections. Soy-related recipes in each are listed here: (1) Soups and starters: Iced tofu (p. 134). miso soup (p. 138). Adzuki bean soup (p. 141). (2) Main dishes: Deep-fried tofu (p. 167). Szechuan bean curd (p. 168). (3) Bread, side dishes, sauces and desserts: Miso lemon sauce (p. 186). Miso ginger sauce (p. 187). Peanut butter (homemade recipe, p. 191).

The rear cover states: "These books fight a war against junk food—and win." The author is a woman.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word "tao koan" (or "tao-koan") to refer to tofu. Address: United Kingdom.

2425. Mogi, Masatoshi. 1981. *Miso to gojûnen* [Miso and fifty years]. Noda, Japan: Published by the author. 232 p. [Jap]*

Address: Kikkoman Central Research Lab.

2426. Omura, Yoshiaki. 1981. *The tofu-miso high efficiency diet*. New York, NY: Arco Publishing, Inc. xvi + 221 p. Index. 21 cm. [70 ref]

• **Summary:** Contents: Acknowledgments. Foreword. A natural, balanced diet for health, weight loss, and longevity. 1. The benefits of a diet based on traditional Japanese foods. 2. How being overweight affects your health. 3. Why certain foods? What is needed to maintain health (The key concept is balance). The diet plan: Changing your eating habits. 4. What is misoshuru? Miso, tofu, and seaweed. 5. The first two weeks: Rapid weight loss. 6. The third week: Transition. 7. The maintenance diet. How to calculate your individual calorie requirements. Food plan. Adapting Japanese foods and cooking methods. 8. Representative

Japanese and American menus. 9. Japanese foods and how to shop for them. 10. Some Japanese cooking methods which you can adapt to American foods. 11. Some recipes for Japanese dishes. Changing your lifestyle. 12. Exercise. 13. The mental side of losing weight: How your mind can help your body. Appendices: 1. Charts and records for your personal use. 2. Nutritional information on miso, tofu, seaweed, and green tea. 3. Vitamins. 4. Distributors of Japanese foods. Bibliography: Cookbooks and foodbooks, nutrition books and articles, books in Japanese, books and articles on health and weight control by alternative approaches. Notes.

2427. Shandler, Michael; Shandler, Nina. 1981. The complete guide and cookbook for raising your child as a vegetarian. New York, NY: Schocken Books. xiv + 337 p. Index. 24 cm. [65 ref]

• **Summary:** On p. 22 soybeans and rice are used to illustrate protein complementarity. Fats survival plan (p. 70-71): Describes how to make clarified butter (ghee); it is superior to other fats for frying purposes and is not subject to the same polymerization as vegetable oils. "Eggs do not constitute a cholesterol risk," but "soy milk and tofu are... excellent high-protein substitutes for eggs if your children are allergic." Good sources of protein during pregnancy include beans, grains, tofu, gluten, dairy products, and soy products. Use complementary proteins together. Tofu can be blended into creamy salad dressings.

"Homemade soy milk is deficient in vitamin B-12, vitamin D, and calcium. Commercial soy drinks for infants [infant formulas] are fortified with these and other nutrients but often contain sugar and other detrimental additives" (p. 110).

"After approximately 1 month of eating solid foods, a second series of foods can be introduced to your infant." These may include puréed tofu or light miso soups (p. 116-17).

Soy-related recipes include: Whole wheat soy flakes (p. 206). Tamari broth with dumplings (and soy flour, p. 216). Nondairy cream of vegetable soup (with tofu, p. 216). Summer cucumber tofu soup (p. 218). Soyburgers (with whole soybeans, p. 222-23). Barbecued tofu sandwiches (p. 226). Tofu cheesie macaroni (p. 232). Tofu noodle casserole. Fried tofu over rice. Tomato tofu lo mien (p. 233-34). Tofu and rice seaweed rolls (p. 236). Pizza (with soy flour and gluten flour, p. 236-37). Creamed spinach with tofu (p. 254). Tamari-glazed "trees" (Broccoli, p. 255). Vegan dips (p. 264-65): Avocado tofu dip. Cucumber tofu dip. Nondairy dressings (p. 271-72): Tofu dressing. Nut and soy milks (p. 311-13): Fortified soy milk. Carob soy milk. Spiced soy milk. Almond milk. Cashew milk. Coconut milk. Tahini milk. Nondairy sandwich fillers (p. 320-21): Soy sandwich "meat" (with whole soybeans and tamari soy sauce). Tofu sandwich spread.

2428. Shurtleff, William; Aoyagi, Akiko. 1981. Wat is miso? Nederlandse bewerking: Robby de Nies & Sjon Welters [What is miso? Translated into Dutch by Robby de Nies and Sjon Welters]. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 16 p. [3 ref. Dut]

• **Summary:** Contents: Introduction. Delightfully varied; highly versatile. A nutritional treasure trove. The varieties of miso (including a full-page table). The preparation of miso. Traditional natural miso and quick modern miso. A brief history of miso. Buying, storing, and using miso. Miso in Japan. Traditional Japanese miso shops and modern factories. Making miso at home. Favorite miso recipes (17 recipes). Address: Authors: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. De Nies: c/o Tenmi, Sakuragaoka 4-3, Shibuya-ku, Tokyo, Japan. Welters: c/o Manna Natuurlijke Levensmiddelen, Meeuwenlaan 70, 1021 JK Amsterdam, Netherlands.

2429. Shurtleff, William; Aoyagi, Akiko. 1981. Miso soup protects against cancer. Lafayette, California. 3 p. 28 cm.

• **Summary:** This is mostly a translation by Aoyagi of an article about "Miso soup's unexpected good effects" from *Asahi Shinbun*, 27 Sept. 1981. A heavily edited version was published in *East West Journal* (Jan. 1982, p. 42-43). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2430. Stobart, Tom; Owen, Millie. 1981. The cook's encyclopedia: Ingredients and processes. New York, NY: Harper & Row, Publishers, Inc. xii + 547 p. Illust. 25 cm. [20 ref]

• **Summary:** Soy related entries include: Bean curd (incl. tofu). Bean-curd cheese [fermented tofu]. Bean paste and bean sauce (incl. Red bean paste) is sweet and made from adzuki beans. Yellow bean paste is made from soybeans and is salty and pungent. "Fermented salted black beans" is made from a black variety of soybeans; these salted black beans can be used to make "black bean sauce" which can be used as a flavoring in fish, lobster, chicken, and pork dishes.

Soybean (incl. soya bean, soja bean, flour {"pork soya links" used in Britain during World War II}, sprouts, soy oil, soy sauce, soymilk, vegetable yogurt [soy yogurt], vegetable cheese [soy cheese], tempeh, bean curd skin [yuba], miso, tamari, soy sauce, soy protein isolate, soy granules or grits, textured plant protein [textured soy protein]). The name in four European languages is given.

Soy sauce or shoyu (It "is said to be one of the ingredients of Worcestershire sauce." Incl. the "very heavy Indonesian *ketjap* {*ketjap manis* or *ketjap benteg*}, which is a type of soy sauce,..."). The name in four European languages is given.

Textured plant protein (a high-protein foodstuff manufactured from plants (soybeans, peanuts, wheat,

cottonseed, etc.). “Originally it was aimed at the vegetarian market.” Also called “textured vegetable protein” in the USA. Incl. textured soy flour, textured soy protein gel and fibers).

Worcestershire sauce: Begins with a history (starting in 1837) based on the fanciful story so widely known. “Thus was born what is probably the world’s best-known and most ubiquitous bottled sauce, one which has become a standard ingredient.” Note: How about soy sauce? “The exact formula is secret. Although it is much imitated, nobody seems to be able to get quite the taste of the original.”

Also contains entries for adzuki, ketchup (“Javanese katjap [ketjap], for example, is a very sweet soy sauce”), peanut (groundnut or monkey nut), pulses, seaweed, sesame seed, tahini.

Note: Millie Owen prepared the American edition of this book. Address: 1. Hassocks, Sussex, England; 2. Northfield, Vermont.

2431. Wood, B.J.B. 1981. Introduction of new fermented foods into Western culture. *Advances in Biotechnology* 2:467-72. Also in Proceedings of the VIth International Fermentation Symposium; London, Ontario. Academic Press, New York, pp. 467-472. [6 ref]

• **Summary:** Discusses soy sauce, shoyu, miso, tempeh, sake, and soy milk. Address: Dep. of Applied Microbiology, Univ. of Strathclyde, George Street, Glasgow G1 1XW, Scotland.

2432. World of God. 1981. The cookbook for people who love animals. Route 2, Box 98E, Brooksville, Florida 33512. 176 p. Edited by Butterflies. Illust. and cover design by Flowers. Recipe index. 26 cm. Spiral bound. The 4th edition was copyright in 1987. [31 ref]

• **Summary:** The top of the title page reads: “Over 300 totally vegetarian recipes. From beginner to gourmet. No meat. No eggs. No dairy. No honey.” At the bottom of the title page is a field of red and orange flowers, with butterflies around them, and a rayed sun overhead against a light yellow background. This is a good, spiral-bound collection of vegan recipes, which are straightforward, appetizing, and nutritious. Special section includes recipes for cat and dog food. The book is interspersed with nice quotes about vegetarianism, veganism, and animal rights from great thinkers such as Longfellow, Emerson, Schopenhauer, John Galsworthy, Jeremy Bentham, Cicero, Herbert M. Shelton, John Ruskin, John Stuart Mill, Tagore, Plutarch, Tolstoy, Cardinal Newman, George Bernard Shaw, Thoreau, St. Francis, Leonardo da Vinci, Harriet Beecher Stowe, Romain Rolland, and Friedrich W. Nietzsche.

The glossary of ingredients lists okara, soy powder, tamari, tofu. “Soy powder [whole soy flour]—Made from cooked soybeans, it contains all the natural oil of the soybean. Used in casseroles, sweets, and for making soy

milk. It can also be used as an egg substitute. Use 1 heaping tablespoon soy powder and 2 tablespoons water in place of 1 egg.”

Recipes with soyfood terms in the title include: Quick instant soy milk (p. 12). Soy milk. Soy yogurt [non-fermented]. Soy margarine (p. 13). Soy tofu. Scrambled tofu. Tofu cottage cheese (p. 14). Tofu cream cheese (p. 15). Bran muffins (with soymilk, p. 22). Most baked goods include soymilk in place of dairy milk. Miso soup (p. 37). Tofu eggless salad. Okara salad (p. 54). Tofu potato salad (p. 56). Tomato tofu salad (p. 57). Tofu tahini dressing. Blond miso dressing (p. 67). Orange tamari dressing. Soy mayonnaise (p. 68). Miso spread (p. 69). Hot miso dressing (p. 73). Tahini-tamari sauce (p. 75). Stuffed tomato with soybeans (p. 92). Tofu saute (p. 104). Potatoes with tofu. Noodle tofu (p. 105). Tofu bean-thread saute (p. 106). Matzoh tofu bake (p. 124). Soy burgers (p. 131). Okara cylinders (p. 132). Tofu cheesecake (p. 141). Carob tofu cream pie (p. 143). Recipes for dogs and cats: Okara delight (p. 163). Soybean mash (p. 164). Instant soybean-meal dinner (p. 165).

At the back is a 6-page section titled “The Spirit of Ahimsa” by H. Jay Dinshah, president of the American Vegan Society. It is excerpted from his books “Out of the Jungle” and “Here’s Harmlessness.” Address: Brooksville, Florida.

2433. Yan, Martin. 1981. The Yan can cook book. Garden City, New York: Doubleday & Company Inc. 355 p. Illust.

• **Summary:** This Chinese cookbook, published in both hardcover and paperback, contains at least 15 recipes using bean curd (tofu), especially in the chapter titled “Bean Curd, Eggs, and Other Protein-Rich Foods” (p. 179-99). Tofu is usually referred to as “soybean curd” or “bean curd.” Pages 185-87 contain a recipe for making tofu at home, and give a nutritional comparison of firm bean curd, chicken eggs, ground beef, and cottage cheese. In the chapter “Saucy Dips” is a recipe for “Black Bean Sauce” using “salted black beans” [soy nuggets].

The glossary (p. 313-) gives good descriptions of the following soyfoods: Black beans salted, brown soy sauce, Hoisin sauce, Hot bean paste, MSG (monosodium glutamate), soy sauce, bean curd, and soybean sheets dried (yuba).

The author is the star of a popular daily Chinese cooking show named “Yan Can,” which he has hosted since 1978. Born and raised in Kwongchow, China, he left China in 1963 and began cooking at the age of 13 as an apprentice in a popular Hong Kong Restaurant (owned by his uncle) and at age 18 he had earned a diploma from the Overseas Institute of Cookery. Arriving in the USA in 1969, he earned a masters degree from the University of California at Davis.

2434. Yepson, Roger B. ed. 1981. Home food systems. Emmaus, Pennsylvania: Rodale Press, Inc. 475 p. Illust. Index. 29 cm. [15 ref]

• **Summary:** Extensive, positive information on soyfoods is contained in the chapters on Grains (and bread, see p. 35), Beans (p. 94-95, 99-115; tofu, tempeh), Sprouting (p. 120, 125, 127), Canning (p. 203), and The Home Dairy (p. 298; soymilk, soy yogurt). Reviews and photos of many soyfoods books are given, with a sample recipe from most.

Pages 298 notes: "Soymilk is low in riboflavin (vitamin B-2), totally lacking in vitamin B-12, and has drastically less calcium than dairy milk. On the other hand, soymilk is lower in carbohydrates, has 12% fewer calories, 25% less fat, no cholesterol, and contains 15 times more iron than cow's milk." Address: Emmaus, Pennsylvania.

2435. Yokotsuka, T.; Sasaki, M. 1981. Risks of mycotoxin in fermented foods. *Advances in Biotechnology* 2:461-66. [37 ref. Eng]

• **Summary:** "In the production of Japanese fermented foods such as shoyu, miso, and sake, the major enzyme source is *Aspergillus* molds such as *A. oryzae* and *A. sojae*. Many investigators have failed to find a single aflatoxin producer among the *Aspergillus* molds used for food fermentation. Some cultures produced fluorescent compounds having Rf values resembling those of aflatoxins, further investigations, however, indicated that these compounds were 7 kinds of nontoxic pyrazine compounds including flacacol, isocoumarin compounds, lumichrome, and other compounds than aflatoxins. *Aspergillus* molds were also checked for their production of Aspergillilic acid, β -nitropropionic acid, kojic acid, and oxalic acid. Results indicated no possible hazard caused by these compounds in Japanese fermented foods." Address: Kikkoman Corp., Noda-shi, Chiba-ken, Japan.

2436. Young, Mala. 1981. Main dishes. Newton Abbot, Devon, England: David & Charles. 48 p. Illust. No index. 21 cm. Series: Health Food Cooking.

• **Summary:** Page 8 notes that miso and tamari, both fermented soya products, are useful ingredients—as are aduki beans and seaweeds. Soy-related recipes include: Mixed bean and grain stew (with miso and tamari, p. 20). Soya beans and vegetables in miso sauce (p. 22-23). Aduki pâté and salad (p. 24-25). Winter vegetable and miso pie (p. 38).

2437. [Japan miso export statistics]. 1981. In: Okura-sho Yushutsu Tsukan Tokei-hyo. Tokyo, Japan.

• **Summary:** Gives miso export statistics for 15 countries. For each country gives: 1980 weight and 1981 weight (in kg). Percentage increase. 1980 and 1981 price in yen. Percentage price increase. The top countries, in descending order of amount exported are (with the 1981 weight in kg for each): USA 834,303. Singapore 94,988. Netherlands

67,767. Canada 46,178. England 40,371. West Germany 39,966. Australia 39,432. Iraq 34,509. Indonesia 30,620. Hong Kong 28,940. France 27,959. Belgium 26,625. Taiwan 25,238. Italy 18,755. Saudi Arabia 18,627. Total for all miso exports to all countries 1,524,008. Address: Tokyo, Japan.

2438. *Tetra News*. 1981? Soymilk becomes new mainstay of product lines at Okazaki Marusan Co. Undated.

• **Summary:** Okazaki Marusan Co. was established in 1952 and has grown rapidly in the past 3 decades to become one of Japan's five major miso manufacturers. Miso presently accounts for over 80% of the company's total sales revenues. Mr. Michinobu Nabeta, Managing Director, says the company's short-term objective is "to become a health foods manufacturer."

"The first product resulting from Marusan's R&D program for soymilk launched a decade ago was 'Doujan' (Chinese for soymilk) which was commercialized eight years ago. 'Doujan contains the essence extracted from pearl barley and kelp and is a health food that is marketed through a health-conscious consumer organization that has a good reputation,' Mr. Nabeta comments.

"It's Marusan Tonyu (soymilk) in a 250 ml gable-top carton went on sale 2 years ago, and last year Tonyu in a Tetra Brik Aseptic 200 ml carton was introduced... The company's 'Tonyu,' 'Orange Tonyu' and 'Malt & Tonyu,' all in Tetra AB cartons [and on the market by 21 July 1981 in 200 ml cartons] are distributed nationwide to supermarkets; thus, the sale of these products is growing.

"In recent years the soymilk market [in Japan] has expanded steadily, and it is estimated that the market will grow from ¥3,100 million in 1980 to ¥5,000 to ¥6,000 million this year. 'The market will reach ¥6,000 million or thereabouts this year; many believe the market will grow by 30% in 1983, though part of the industry predicts a ¥10,000 million market. In the future we expect the market to grow to a ¥50,000 million to ¥60,000 million market, or comparable to the tomato juice market. Our company and other soymilk suppliers hope that the soymilk market will eventually share 10% of the cow's milk market,' Mr. Nabeta says."

"The company has been tapped by some U.S. companies [including Eden Foods] for soymilk manufacturing ventures in the U.S., but Mr. Nabeta believes the company should concentrate on the domestic market, at least for the time being."

2439. Evans, Barry. 1982. Re: The American Miso Company announces the opening of its miso shop in North Carolina. Linden's Elf Works is sole agent in marketing and distribution. Letter to Friends of The American Miso Company, Jan. 4. 1 p. Typeset, with signature on letterhead.

• **Summary:** “Dear Friends—We at The American Miso Company are proud to announce the opening of our miso shop in Western North Carolina. This long awaited dream of making American miso has evolved from a genuine need here in the United States for an unpasteurized miso made with organic ingredients and fermented under natural conditions in large wooden vats.”

“Through the joint efforts of producer John Belleme and his teacher, Takamichi Onozaki from Yaita, Japan, we are now making absolutely delicious miso that will strengthen the body and delight the palate.

“The Lindenself Foundation, doing their business as Linden’s Elf Works, located in Piedmont, North Carolina, has been appointed as the sole agent in marketing and distribution of The American Miso Company brand products... Their address is Route 1, Box 43-D, Rougemont, North Carolina. Your phone contact is John Troy at... 919/364-2723. Enclosed is the Linden’s Elf Works distributor price sheet which includes all the pertinent information for your upcoming Spring catalogue. With kindest regards, Barry Evans, President.”

Note 1. This letter was precipitated by Erewhon Trading Company’s announcement in Nov. 1981 that it was filing for Chapter 11 bankruptcy. Note 2. This is the earliest document seen (June 2000) that mentions the company’s new name, “The American Miso Company.” Note 3. This is the earliest document seen (July 2000) that John Troy of Elf Works in connection with miso or soy.

Note 4. Talk with Barry Evans, owner of American Miso Co. 2000. June 29. Linden’s Elf Works never distributed any miso made by AMC; Great Eastern Sun, Barry’s new company, was the distributor. During the first year or two, John Troy purchased a significant percentage of the miso made by AMC for his sauces and dressings. To this day, he remains an important friend and advisor, but the percentage of miso he buys is now quite small. Joel Dee, a pioneer with his Miso Cup, worked with John Troy. Joel lived in the little town Saluda, North Carolina, where John Belleme lives today. Last year, Joel introduced Organic Miso Cup using miso from AMC; he is now a significant customer. Address: President, The American Miso Company, Rutherfordton, North Carolina.

2440. Krieger, Verena. 1982. Re: Dr. Johannes Kuhl and fermented foods in Switzerland. Letter to William Shurtleff at Soyfoods Center, Jan. 19. 1 p. Typed, with signature. [1 ref]

• **Summary:** Dr. Kuhl, who wrote in the 1950s and is no longer living, advocated a natural-foods diet containing large amounts of fermented foods (one-third to one-half of all foods consumed). He believed that such a diet is the best protection against cancer and radioactivity. “His publisher, who keeps re-editing his books thinks that miso and tempeh

would fit perfectly into his theory (K. himself had probably never heard of fermented soybeans).

“I have always been fascinated by fermented foods and feel that they will have to become an important part of the diet, especially with people moving away from meat eating. I hope that I shall be able to write a cookbook some day as a tool on how to integrate them into a practicable diet.”

Address: Bruchmattstr. 24, CH-6003 Lucerne, Switzerland. Phone: 041-22 50 34.

2441. Oka, Hideki; Itoga, Keiji; Mochizuki, Tsutomu. Nagano Miso K.K. (Nagano, Japan). 1982. Method of preparing albumin rich foodstuff raw materials. *U.S. Patent* 4,311,715. Jan. 19. 8 p. Application filed 3 March 1980. [6 ref]

• **Summary:** “In preparing miso like albumin rich foodstuff raw material, malt of rice or the like is sterilized with ethyl alcohol or an aqueous solution thereof, the sterilized malt is admixed with steamed or boiled soya beans and the resulting mixture is aged at a temperature of 20°C-50°C for about one week or more.” Address: 1. Ueda, Japan; 2-3. Nagano, Japan.

2442. Jaccard, Anne-Marie; Krieger, Verena. 1982. Une graine pour l’an 2000 [A grain for the year 2000]. *Illustré (Lausanne, Switzerland)* No. 4. p. 59-63. Jan. 27. [Fre]

• **Summary:** This grain is the soybean, which is imported in huge quantities from the USA to Europe. The article discusses the soybean plant, tofu, miso, tamari and shoyu, tempeh, homemade soy sprouts, and yuba.

A photo shows Paul Simon, a specialist in macrobiotic food at Lausanne. He makes tofu in the traditional way using nigari, and serves it with tamari and ginger. “Fresh tofu, prepared on the spot, is difficult to find in Switzerland. In the French-speaking cantons of Switzerland, there are only two places: (1) The macrobiotic Center of Lausanne, 7 ruelle de Bourg, and (2) Le Grain d’Or, 7 rue Voltaire, Geneva.” Recently a factory opened at Zurich, and another will open soon at Nyon. In the two macrobiotic restaurants of French-speaking Switzerland (Romandie), tofu is found regularly à la carte: at “The Bio” in Lausanne, and “La Moisson” in Geneva.

2443. Shurtleff, William; Aoyagi, Akiko. 1982. Miso soup: Safeguard against cancer. *East West Journal*. Jan. p. 42-43.

• **Summary:** This article is mostly a translation by Akiko Aoyagi of an article about “Miso soup’s unexpected good effects” from *Asahi Shinbun*, 27 Sept. 1981. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2444. Westbrae Natural Foods. 1982. Distributor catalog and pricelist: Jan. 1982. Emeryville, California: Westbrae. 16 p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in dark blue on a tan background. Address: 4240 Hollis St., Emeryville, California 94608. Phone: (415) 658-7518 (orders).

2445. Wood, Brian J.B. 1982. Soy sauce and miso. *Economic Microbiology* 7:39-86. Jan. A.H. Rose, ed. Fermented Foods. [50 ref]

• **Summary:** Contents: 1. Introduction. 2. The preparation of soy sauce: Introduction, preparation of raw materials (the beans, wheat), mixing, koji, moromi. 3. Of beans, microbes, and miso: Beans, microbes, miso. 4. Trade in soy sauce: Introduction, statistics. Table 1 (p. 64-66) shows exports of soy sauce in 1978, in tonnes (metric tons) from Hong Kong, Korean Republic, Singapore, Japan, and total, to almost every country in the world (with each country's population in millions), grouped by region as follows: 1. North America: Canada, USA (#1)–Regional total imports: 6,052.3 tonnes. 2. South and Central America [and Caribbean]: Argentina (#3 in region), Bolivia, Brazil, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico (#2), Nicaragua, Panama, Paraguay, Surinam, Venezuela (#1), Granada, Jamaica, Trinidad and Tobago, total. Former Dutch West Indies–Regional total imports: 1,046.4 tonnes. 3. Europe: Austria, Belgium, Czechoslovakia, Denmark, Finland, France (#4 in region), Germany (West #3), Greece, Italy, Netherlands (#2), Norway, Portugal, Spain, Sweden, Switzerland, UK (#1), USSR–Regional total imports: 3,017.7 tonnes. 4. Near and Middle East: Bahrain (#3), Egypt, India, Iran (#2), Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia (#1), United Arab Emirates, Yemen Arab Republic–Regional total imports: 1,193.5 tonnes. 5. Far East and Western Pacific: Brunei, Hong Kong (#3 in region), Indonesia, Japan, Korea (South), Macao, Malaysia (#2), Philippines, Sabah (#1; A state of Malaysia from 1963; Formerly British North Borneo), Sarawak (A state of Malaysia from 1963), Singapore, Taiwan, Thailand–Regional total imports: 3,139.4. 6. Pacific and Australasia: Australia (#1 in region), Cook Islands, Christmas Islands, Fiji, Guam (#2), Nauru, New Caledonia, New Hebrides, New Zealand, Oceania n.c.s. (#3), Papua New Guinea, Portuguese Timor, Samoa and Tonga, Solomon Islands, Tuvalu (Ellis Island), U.S. Oceania–Regional total imports: 1,647.5 tonnes.

Note: This is the earliest document seen (July 2008) concerning soybean products (soy sauce) in Kiribati (Christmas Islands), in Nauru, in Qatar, or in Tuvalu. This document contains the earliest date seen for soybean products in Kiribati (Christmas Islands), in Nauru, in Qatar, or in Tuvalu (1978); soybeans as such have not yet been reported.

7. Africa: Algeria, Canary Islands, Ethiopia, Gambia, Ghana, Kenya, Libya, Malagasy, Malawi, Mauritius (#2 in region), Nigeria, South Africa (Republic of, #1), Sudan, Réunion Islands (#3), Tanzania, Zaire. Other African

countries–Regional total imports: 365.7 tonnes. World total imports: 15,731.5 tonnes, of which 6,192.8 tonnes from Hong Kong, 1,233.5 tonnes from South Korea, 1,713.6 tonnes from Singapore, 6,591.6 tonnes from Japan. The value in pounds sterling and in pounds sterling per tons of soy sauce is given for each exporter.

Other tables show: (2) Soy sauce exports (in tonnes and value) each year from 1976 to 1976 from Hong Kong, South Korea, Singapore, and Japan. A large percentage of Hong Kong's exports are re-exports (probably from China). (3) Total soy sauce exports from Japan, 1976-1978, by container type, with amount and value. (4) Soy sauce and miso production in Japan every 5 years from 1965 to 1978 (in tonnes). (5) Soy sauce and miso production in Japan for export in 1976, 1977, and 1978. Miso production (in tonnes) averaged about 40% of soy sauce production, and miso exports (in tonnes) averaged about 13% of soy sauce exports. (6) Imports of soy sauce into Hong Kong, Singapore, and the USA from exporting countries in 1978 (with figures for exports from China in 1976 and 1977). (7) Re-exports of soy sauce (made in China) from Hong Kong and Singapore in 1978 to major importing countries worldwide, by region, by country. Small countries that are the destination of this soy sauce include: Honduras, Nicaragua, Panama, Venezuela, Trinidad and Tobago, Former Dutch West Indies [also called Netherlands Antilles; they are part of the Lesser Antilles and consist of two groups of islands in the Caribbean Sea: Curaçao and Bonaire, just off the Venezuelan coast, and Sint Eustatius, Saba and Sint Maarten, located southeast of the Virgin Islands. The islands form an autonomous part of the Kingdom of the Netherlands], Pakistan, Saudi Arabia, United Arab Emirates, Brunei, Sabah, Sarawak, Fiji, Nauru, Oceania (non-U.S.), Oceania (U.S.), Papua, Samoa and Tonga, Solomon Islands, Ghana, Malagasy Republic, Togo. Total from Hong Kong: 2,945.3 tonnes, and from Singapore 109.5 tonnes.

(8) Exports of miso (in tonnes) from South Korea and Japan in 1978 to major importing countries worldwide, by region, by country. The leading importers are: USA (622), Saudi Arabia (353), Singapore (66), Bahrain (64), Netherlands (38), Iran (29), Iraq (29) France (28), German Federal Republic (23). Smaller importers include: Chile, Guyana, Surinam, Bangladesh, Iran, Iraq, Jordan, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, Yemen Arab Republic, Sabah, Fiji, Guam, New Hebrides, Papua New Guinea, Samoa, Solomon Islands, Algeria, Canary Islands, Ghana, Kenya, Libya, Mozambique, South Africa Republic, Zaire.

Note: This is the earliest document seen (June 2007) concerning soybean products (miso) in Qatar. This document contains the earliest date seen for soybean products in Qatar (1978); soybeans as such have not yet been reported.

(9) Exports of miso from South Korea and Japan in 1976, 1977, and 1978 (quantity and value each year; no importing country names are given).

5. Tour of South East Asia: Technical and scientific aspects, trade aspects. 6. Acknowledgments. References

The chapter on Trade states: Soy sauce and soy paste (miso) are traded between all countries of South East Asia. The Korean Republic's exports nearly quadrupled in tonnage. The Kikkoman Company's production facility in Wisconsin produced 21,6000 tonnes of soy sauce in 1978. This was equal to 3 times the total exports from Japan in the same year. Japan's total share of the world soy sauce market remains very healthy. Miso exports are still small in comparison with soy sauce. On a rising market Japan's exports still only represent 0.2% of its annual miso production; "clearly there is considerable room for expansion here."

Miso is of greater relative importance to Korea than it is to Japan. Among the European countries, Belgium and Holland import the greatest amount of miso on a per capita basis. Spain imports a fair amount of miso. The U.S.A. and Canada had total miso imports totaling about 10% of their soy sauce imports.

"In Thailand, there are about 50 soy sauce factories, the majority of which are small, producing less than 100 kilolitres per year, although it should be noted that most of them also produce soybean paste and soybean cheese [probably tofu]. The total annual consumption of soy sauce in Thailand is estimated at about 6,000 kilolitres (about 7,200 tonnes).

"In Malaysia, there are about 140 soy sauce factories producing in total an estimated 5.5 million gallons of soy sauce per year according to the proprietor of a leading brewery in Kuala Lumpur. This is about 21,000 tonnes per annum" (p. 84). Address: Dep. of Applied Microbiology, Univ., of Strathclyde, Glasgow [Scotland], U.K.

2446. Wollner, Joel. 1982. History of Erewhon, macrobiotics, and soyfoods in America (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 2. 2 p. transcript.

• **Summary:** Discusses Evan Root, Redwing Books, Erewhon's first tofu, Charles Kendall, tempeh. Address: Boston, Massachusetts.

2447. Hillyard, Roger. 1982. History of Erewhon, natural foods, and macrobiotics in America. Part I (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 7. 2 p. transcript.

• **Summary:** Roger got involved with macrobiotics in San Francisco in about 1965. He lived in San Francisco, was doing light shows at the Avalon Ballroom, read the book *You are All Sanpaku* [by Sakurazawa Nyoiti (George Ohsawa)]; English version by William Dufty], and got

involved. Also in about 1965, Herman Aihara and Bob Kennedy used to come to town to lecture in a church on Oak Street. Bill Tara and Paul Hawken, who were filmmakers, lived in a warehouse on lower Mission St. described in the *Electric Kool-Aid Acid Test*, by Tom Wolfe (largely about Ken Kesey and the Merry Pranksters). "A little macro scene started. We heard that Boston was macro Mecca."

Roger arrived in Boston in Oct. 1969. Erewhon started when Michio and Aveline Kushi were living in Cambridge, Massachusetts; in their basement they had a little food, which they would sell to people who came to hear Michio lecture. "The food was but a vehicle to the larger teaching. The food is like an asana or yoga posture, but the goal is enlightenment. You can get stuck on the food. That is why Michio had very, very little involvement in Erewhon's food business, His focus was on the philosophy of macrobiotics and spreading it."

The Erewhon store was (at the time) in the basement of today's Redwing Books. Evan Root started the store, but he wanted to get out of it into a restaurant. Paul Hawken took over the sleepy little store. Bill Tara (who was from Santa Cruz) also worked there for a while. The tiny store had few customers, a very limited selection of products, and a little mail order business. Shortly after Roger arrived, the Erewhon store at 342 Newbury Street opened—in Nov. or Dec. 1969. Bruce Macdonald and Jim Docker helped to renovate the new store. The whole thing was called Erewhon Trading Co. In Feb. 1970 Roger started to work in this retail store.

Shortly thereafter, Paul Hawken went to Japan. At that time the only companies importing food from Japan were Chico-San and Infinity Foods in New York; both were macrobiotic. Erewhon bought from them, and then started doing a little wholesaling. After Paul went to Japan, Erewhon started importing directly from Japan. Paul got in touch with Mr. Kazama and helped to get Mitoku into the natural food export business. Kazama was an old friend of Obiyashi, who was an old friend of Michio Kushi's from Columbia University. Muso was shipping to Chico-San and Infinity. Erewhon imported from Muso and Kazama. Roger thinks Mitoku started in about 1970-71. Before that they sold soccer shoes and cranes. The fact that Paul was in Japan was instrumental in getting Erewhon's imports started.

The Erewhon retail store would sometimes get huge shipments, such as a 40-foot-long truck of rice that filled up the whole Erewhon storeroom. It was something like Kokuho Rose [a brand of short grain brown rice grown by Koda Bros. in Dos Palos, California]; it is not organically grown. There was really no room for it, and no refrigeration. At about this time the Lundberg Brothers in California started growing brown rice organically. At one time a boxcar of 100,000 lb of Lundberg rice arrived, so

Erewhon needed more warehouse space. Also involved were Jean Allison (from California) and Wally Gorell (from the Straight Theater, Haight-Ashbury district, San Francisco). In about mid-1970 Erewhon leased a 10,000 square foot warehouse space on the 5th floor of 33 Farnsworth St. [a big brick warehouse] in Boston. The space had a nice milling room. Then the wholesale business took off. Roger left Boston in April 1971. He had been running both the distributing company and the wholesale company, but there was a store manager. The retail store expanded into its back room. Then the wholesale business grew like mad. Orders came from non-macro natural foods stores, from new macro groups, etc.

How did the natural food movement get started? As Roger recalls, it was not started by macros. In about 1966 or 1967 Sunset Natural Foods became New Age Foods, an early natural foods store run by Fred Rohe. The natural food movement sprung out of the new consciousness—the counterculture—as did macrobiotics. The macrobiotic movement fed the natural foods movement. One Erewhon customer was Mr. Natural in Carbondale, Illinois. Although he was not a macro, he bought miso, tamari, rice, etc. There were lots of other non-macro stores like that too. But there were also lots of macro stores. Bill Tara opened a store and macro center on the 14th floor of a downtown building in Chicago; out of that grew Food for Life. Tom Waxman started Essene in Philadelphia, Pennsylvania. These were two mini-Erewhons. Each started as a small retail store, then became a wholesaler. Erewhon provided the model.

Erewhon set up a branch distributor in Canada, which later became Manna, with Gene Newman, a macro. Westbrae was a Berkeley political organization started by Bob Gerner, making granola. Erewhon West was connected with Bruce Macdonald. Bill Tara, with Aveline Kushi's prodding, started the Erewhon store in Los Angeles; it did a little distributing. Bruce Macdonald went to Los Angeles, then Bill Tara left for England—Roger doesn't know why. Erewhon West started growing. Jimmy Silver ran the Big Sanae, which became the Seventh Inn. Roger then went to Texas and in Jan. 1972 he worked with Deaf Smith for about a year. Later Erewhon West was sold to John Fountain, but really to John Demming—as a separate business from Erewhon.

The Well [a wholesale and distribution company in San Jose, California] was an offshoot of Fred Rohe's New Age Foods, ca. 1969-1970. It was never macrobiotic. Fred sold stock in his business, had 2 stores in San Francisco, then opened a big natural foods store [actually a supermarket] named New Age Natural Foods on California Street in Palo Alto. The whole thing was a fiasco; the Palo Alto store never made money.

Deaf Smith Farms was established as a joint venture between Erewhon and Arrowhead Mills; it never worked out. In April 1971 Bruce Macdonald started a marketing

company named Pure & Simple. In March 1972 Roger started working at the Well in San Jose. Bruce went to Green Mountain Grinery in Boulder, Colorado. Gradually The Well became Pure & Simple, and started importing from Mr. Kazama an Muso.

Paul Hawken was the first person to work with farmers to get them to grow grain organically for Erewhon. One of these was Carl Garrich of Lone Pine, Arkansas—after Erewhon moved to 33 Farnsworth Street. Roger did a lot of work with farmers at Arrowhead Mills, but not connected with macrobiotics.

Major macrobiotic wholesale distributors: Erewhon East and West, Laurelbrook (later), Food for Health, Essene, Manna in Canada (later). Llama (later) was not macro.

Macrobiotics played the major, primary role in introducing soyfoods to America. A little was also coming through Japan Foods [San Francisco] and Nishimoto [Trading Co., Los Angeles]. The macros made these foods available, but don't overcredit it; the time was ripe and it just happened. The main contribution of macrobiotics was simply making these foods available and teaching about them. Michio always said that macrobiotics is not just about food and the diet.

"It was frightening when we stopped to think about it. The business was doubling and tripling at a crazy rate." Roger still has his early notes but no accounting books. Continued. Address: California.

2448. Hillyard, Roger. 1982. History of Erewhon, natural foods, and macrobiotics in America. Part II (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 7. 2 p. transcript.

• **Summary:** While Roger was in Boston, no tofu was sold at the Erewhon retail store at 342 Newbury St.—since there was no refrigeration and no room. He thinks tofu was introduced after Erewhon got 33 Farnsworth St.

The trickiest question, which has no place in this book, is about work as a disciple / discipline vs. for money / as business. Work can be a spiritual practice (*karma yoga*), and that is how many of the early workers at Erewhon viewed it.

Roger does not know why so many people left Erewhon. Maybe Michio planned it that way. He does not know why Erewhon went bankrupt; maybe it was because the company was undercapitalized, there was no worker equity, and Michio did not know American business. "Maybe Michio did not care so much. Distributing foods was always a minor focus for Michio."

Other macrobiotic food distributors outside the U.S. were Lima in Belgium (by far the earliest), Harmony and Sunwheel in England, and some company in Italy. Address: California.

2449. Hayashi, Kazuya. 1982. [Re: Use of enzymes in modern shoyu production in Japan]. Letter to William

Shurtleff at Soyfoods Center, Feb. 15. 5 p. [Jap; eng]

• **Summary:** Dr. Hayashi specializes in the use of enzymes (especially protease) in shoyu at Kikkoman's Central Research Laboratory. 1. Use of enzymes with shoyu in Japan: The use of added commercial enzymes was approved by the newly revised Japan Agricultural Standard (JAS, 1980). The use of an enzyme-treated solution in "new-type shoyu" [*Shinshiki*] and amino-acids mixed type shoyu was approved. However only a few commercial products in Japan today are actually made with the use of commercial enzymes because (1) the enzymes are too expensive, (2) the effect of the enzymes is not significant since most manufacturers use the "all-koji" method, and (3) in a salt solution of high concentration, the effect of the enzymes is greatly reduced. Examples of actual current use: The Shono Starch Co. Ltd. uses enzymes for making a product named "Umamigen." Corn is treated with an enzyme solution in making shoyu. Kikkoman has a patent on making shoyu using 100% enzyme solution. It calls for the use of yellow koji enzyme (peptidase) and glutaminase. The quality is fine but the product is too expensive. This method is good when the presence of aflatoxins could be a problem. In the future a low-salt, high-temperature digestion method may allow the use of enzymes (cellulase digestion, peptidase digestion).

2. High temperature fermentation method: This research was started in about the 1920s. The research on low-temperature fermentation began in about the 1930s. In the early period, this was called the *sokujo* or "rapid method" of fermentation; the temperature was raised to 30-35°C. The quality was bad due to elution of some key flavor components, and because the glutamic acid content was lower. Also, the environment was not favorable to microbial growth. Use of the low-temperature method produces better quality shoyu. Use salt water (less than 5°C) for starting. For the first 15-30 days, keep at 15°C. After one month, raise the temperature to 25-27°C to complete the fermentation, then maintain at about 20°C. This is suitable for the breakdown of the material by bacteria.

3. Addition of yeasts and lactic acid bacteria to the shoyu fermentation process began around the 1960s. Only the yeast *Saccharomyces rouxii* is used in practice. *Torulopsis* is for experimental use only. Lactic acid bacteria are not yet adapted to actual production. Use of epoxy-lined tanks is also important.

4. Bansui (using a second pressing of the shoyu): Only a few shoyu makers use this method since the product quality is bad and it cannot be sold. For details, see Kimura 1914.

5. Chemical shoyu: During the Taisho period (1912-1926) and Showa period (1926+) Dr. K. Kurono/Koruna Kanraku at the Fermentation Research Institute did early work. The use of amino acids spread. In the early Showa period Ajinomoto company was a leader under Dr. Hori Shinichi. During the period 1945-55 Mieki, a glutamic acid

solution, was produced in large quantities (180,000 kiloliters). Improvement of amino acid solution purification led to cheap but tasty shoyu. Then came new-type (*Shinshiki*) shoyu. Bunzo Rokusho and the Mantetsu [Manchurian Railway] Research Institute did research in the early Showa period. During the period 1945-55 new-type shoyu making became widespread. Defatted soybean meal was digested with a weak acid and wheat koji was added to make shoyu.

6. History of the use of POBB (Para-oxy Butyl Benzoate): 1924-Sabalitscka discovered this food preservative. 1934-Dr. Kurono tested the effect on shoyu. 1937-Its use was approved for use in shoyu by the Japanese government. 1948-Use was approved as a food additive. The effect is great but the solubility is low.

7. Making koji for miso: The use of koji boxes is more popular, but the rotary drum is also used.

8. The future of the shoyu manufacturing process: Treatment of raw material and koji making will be spontaneous and automatic. Use of outdoor fermentation tanks. Continuous pressing. Improve sanitation by using a closed system. Digestion without salt. Liquid fermentation. Automatic control of microorganisms. Introduction of computerized system. Use of new raw materials and new microorganisms. Introduction of the fixed-enzyme method. Use of membrane filtration method. Address: Central Research Lab., Kikkoman, Noda, Japan.

2450. Ishii, Masaaki. 1982. Miso production and consumption in the United States (Interview). *SoyaScan Notes*. Feb. 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** As of Sept. 1981 Miyako Oriental Foods makes more than 500 tonnes (metric tons) of miso a year. U.S. mainland miso consumption is about 1,500 tonnes. Of this, 834 tonnes is imported from Japan. Address: Manager, Agriculture, JETRO, Japan Trade Center, Bank of America Tower, 555 S. Flower St. 24th Floor, Los Angeles, California 90071.

2451. Pukel, Sanford; Evans, Barry. 1982. Agreement for exchange of stock and resolution of corporate interests. Rutherfordton, North Carolina. 4 p. Feb. 26. Unpublished typescript. 36 cm.

• **Summary:** In this agreement Sandy Pukel gets out of Oak Feed Miso and Barry Evans gets out of Oak Feed Store and Oak Feed Restaurant by an exchange of stock.

Pukel and Evans have heretofore been shareholders in Oak Feed Store, Inc., Oak Feed Restaurant, Inc., and Oak Feed Miso, Inc. The parties agree that Barry Evans owns 50 shares of outstanding common stock (30% of total outstanding) in Oak Feed Store, and 100 shares of common stock (30% of total outstanding) in Oak Feed Restaurant. Sanford Pukel owns 1,500 shares of common stock in Oak

Feed Miso. For the purposes of this agreement, the parties agree that the cost or other basis of Evans' stock was \$180,000. and the cost of other basis of Pukel's stock was \$91,500.

The parties desire to separate their above-stated stock interests by a mutual exchange of the shares of stock in the respective corporations. They agree that this transaction is effective as of 31 Jan. 1982, even though certain transfers and signing of documents may take place subsequent to that date.

Signed: Sandy Pukel and Barry E. Evans. Address: Rutherfordton, North Carolina.

2452. Edward & Sons Trading Co. 1982. Edward & Sons advances the theory of natural selection [Miso-Cup and Brown Rice Snaps] (Ad). *New Age Journal* (Massachusetts). Feb. Inside front cover.

• **Summary:** A large photo in this full-page color ad shows a bowl of steaming miso soup surrounded by Brown Rice Snaps. Note: This ad also appeared in *Vegetarian Times* (March 1982, p. 31—black and white; and Nov. 1983, p. 27—color). Address: Saluda, North Carolina 28773.

2453. Leviton, Richard. 1982. Traditional soy sauce ferments in Maryland. *Soyfoods*. Winter. p. 68-69.

• **Summary:** About Hoang Van Chi and his company Vietnam Food and Drink, founded in June 1979 in Maryland. They make Bodhi Sauce and Tuong Cu-Da. Photos by Leviton show 6 steps in the process of making this Vietnamese soy sauce, including one of Phan and Van Chi Hoang. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2454. Leviton, Richard. 1982. Soy delis: Fast, natural, and growing. *Soyfoods*. Winter. p. 35-37.

• **Summary:** Discusses the Well Bean Deli in Santa Cruz; Real Food Tofu Cafe in Redwood Valley; and The Tofu Shop in Arcata. All in California. Two photos show each location.

Concerning The Tofu Shop (768 18th St., Arcata, CA 95521): It "combines retail take-out with small scale tofu production and bakery products in a wood-lined airy storefront. Owner Matthew Schmit (who earlier managed a soy deli in Telluride, Colorado) has filled his 1,000 square feet with a small commercial cauldron-style tofu shop, small bakery, and 200 square foot retail front, all of which he launched on \$11,000 investment on December 15, 1980. The cozy retail space features racks of soy cookbooks and crackers, teas, packaged miso, tofu and tempeh kits, noodles, seaweed, and a handsome reach-in cooler where the tofu herb burgers, tofu spinach pies, vegetable tofu sushi rolls, tofu tahini salad, tofu herb dip, tofu cream pies, and bottled soymilk are displayed. Monthly sales average \$3,500 with some outside distribution of tofu, soymilk, and

burgers. The deli attracts walk-in customers from the nearby Humboldt branch of the University of California while tofu burgers and tofu spinach turnovers are probably the most popular products at the deli." Photos show: (1) Matthew Schmit standing at the wood-lined counter. (2) Matthew and Susan [Suzanne] Schmit with their shop's specialties.

Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2455. **Product Name:** [Malvabo Barley Miso, Rice Miso].

Foreign Name: Malvabo Kornmiso, Rismiso.

Manufacturer's Name: Malvabo.

Manufacturer's Address: Malvabo, 19 063 Örsundsbro, Sweden. Phone: 0171-60456.

Date of Introduction: 1982. February.

Wt/Vol., Packaging, Price: 400 gm. Packed in a plastic tofu package.

How Stored: Shelf stable.

New Product—Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255. The company is listed as Aros Sojaprodukter, Bergsvagen 1, 19063 Örsundsbro, Sweden. Run by Ted Nordquist & Tim Ohlund. Phone: 01-716-0456.

Talk with Ted Nordquist. 1985. Jan. 7. The miso is made in 12-15 crocks, each containing 30 liters. Tim Ohlund handles it. He opens one crock every 3rd or 4th month. The contents is sold when he opens it. Ted thinks it tastes fantastic, better than imports. Tim reads and experiments a lot. It is a mellow miso, mild and not very salty.

Talk with Ted Nordquist. 1988. March 27. Tim Ohlund is making miso in the basement of Ted's plant, Aros Sojaprodukter. He has been making it since about 1979, but Ted is not sure when Tim started to sell it commercially. His company is Malvabo, which is the name of the town where he lives. He is very interested in microbiology. He makes many different kinds of miso: wheat, oat, etc. He has about 20 crocks with 30 kg in each crock. He used to be an owner of Aros, but Ted bought him out in 1984.

Talk with Ted Nordquist. 1990. Nov. 23. The miso company has always been owned by Tim, never by Aros. From the beginning, Tim made the koji at home in Malvabo near Örsundsbro, then cooked the soybeans and mixed and ground them with the koji and salt at Aros. He fermented the miso in the basement of Aros in 30-100 liter ceramic crocks. Initially Tim operated without a company name and sold the miso directly to stores and individual customers. Then in late 1988 he started and registered his first company, named Timoteus, which makes and sells two products: miso and koji. Tim is now employed by Ted, manufacturing and delivering tofu, but Tim still makes miso; he does not make tempeh.

Letter from, then talk with, then letter from Tim Ohlund, founder and owner of Malvabo and of Timoteus Kojiprodukter HB. 1991. May 14 and May 30 and June 5.

Tim was born in Seattle, Washington, and raised in America, but with Swedish ancestry. He first visited Sweden as a tourist in Dec. 1967 and liked it so much he decided to live there some day. But he was drafted into the U.S. Army for 2 years, spending 1 year in Vietnam. After being discharged in Fort Lewis, USA, he traveled directly to Japan to pursue his interest in Zen Buddhism. He spent 10½ months in Japan practicing Zen meditation. There, in Aug. 1970, he also became acquainted with miso (he was very interested in it, but didn't learn how to make it) and with macrobiotics. He left Japan and took the train across the USSR to meet his parents in Sweden. He has lived in Sweden since that time (1971). In Sweden his interest in both miso and macrobiotics grew. He started reading about miso, then he decided to return to Japan in the summer of 1973 to study food processing (including miso and tofu making) for 2½ months. He lived in Kyoto and learned a little about miso there and in Hida Takayama—but not enough to make his own miso. Back in Sweden he read books on miso by macrobiotic teachers Herman Aihara and Michio Kushi. Using their instructions, he started to experiment with making miso and koji at his home named Malvabo (pronounced MAL-vuh-bo), at 19063 Örsundsbro, Sweden in Jan. 1975. The instructions didn't work and for the first 2 years the results were "quite disastrous." He first was able to make koji and miso after reading *The Book of Miso* by Shurtleff and Aoyagi, and scientific journal articles by Hesseltine and Steinkraus.

When Aros Sojaprodukter began making tofu in Örsundsbro in Feb. 1981, Tim was a part owner and he was able to expand his miso production using space in the Aros basement. But production was still on a small, experimental scale and none of the miso was sold.

In Feb. 1982 Tim first started to sell the barley miso and rice miso he was making at home; initially he sold only very small amounts, and only directly to friends. The first year he sold about 35 kg of rice and barley miso to friends. Tim wanted to sell organic miso made with all organically grown ingredients, but initially he could not obtain organic polished rice or barley. In Sept. 1983 he first produced an organic miso using oat koji and yellow peas—but not for sale. In April 1984 he started using the brand and company name "Malvabo" (address 19063 Örsundsbro, Sweden) and first sold miso to a retail food store—actually to several stores. The brand "Malvabo" appeared on the hand-written labels for his rice and barley miso. Tim was the first person in Sweden or in Scandinavia to make miso commercially. At the time he started, two types of miso were being imported from Japan: Regular miso by Japanese food stores in Stockholm, and macrobiotic/natural food miso via Lima in Belgium. Natural Hatcho miso had been in Sweden in small quantities since at least 1971.

In Sept. 1985 Tim first sold the organic miso he had developed in late 1983. Then in 1986 he and his family

moved from the house name Malvabo to another house on the same farm named Härvstagård. In Nov. 1988 Tim registered his company: Timoteus Kojiprodukter Handelsbolag (HB), Härvstagård, 19 063 Örsundsbro, Sweden. Phone: 0171-65106. The largest amount of miso he has ever sold in one year is about 1,000 kg. He has never made any other fermented soyfoods commercially, except tempeh. Tim wasn't able to register his company name (after waiting nearly 2 years for the bureaucratic processing) as a trademark. Now he may have to change the name or remain small and lay low. Another big multinational company has a product with a similar name and also a grain-based foodstuff.

Innovations: Tim has been developing an oat koji since 1977, and has been making an oat-yellow pea miso, and a barley-yellow pea miso since 1978. In Feb. 1980 he started using water-lock stoneware crocks with superior results. His products have succeeded because of better flavor, use of organic ingredients, and because they are produced in Sweden and not pasteurized. See also Timoteus Kojiprodukter. 1988, Nov.

2456. Ontario Soya-Bean Growers' Marketing Board. 1982. Canadian soyabean mission, South East Asia, Feb. 12th–27th, 1982: Mission member reports. Chatham, Ontario: Ontario Soya-Bean Growers' Marketing Board. 12 p. Feb. 24 x 11 cm. [Eng]

• **Summary:** Contents: Comments, by Peter H. Epp, Chairman. Japan: Home Shokuhin Tofu Manufacturing Co., Komatsuya Shokuhin (natto mfg. plant), Nihon Miso (manufacturing plant), Japan Miso Assoc., Japan Tofu Assoc., Federation of Japan Natto Manufacturers' Cooperative Society, Wako Shokuryo Co. (makes natto; Jacob Hartz in Arkansas supplies them with "936X" variety small-sized natto soybeans; Wako also supplies Nihon Miso Mfg. Plant), X-Can Far East Ltd. Korea: Seoul meeting at embassy, Chung's Food Ltd., Agriculture and Fisheries Development Corp., Korean Soybean Curd Cooperative Manufacturing Assoc. Singapore: Okura & Company Ltd., Eng Huat Pte. Ltd., Intraco. Malaysia: Yeo Hiap Seng Co. Ltd. (the largest manufacturer of soymilk in Malaysia and Singapore). Follow-up. Conclusion.

Each of the following members of the mission wrote a chapter in this book, discussing each visit mentioned in the contents: Peter H. Epp, Bernard Calhoun, Otis McGregor, Richard I. Buzzell, M.D. Pennell (General Manager, R&D, H.J. Heinz Company of Canada Ltd.), Michael Loh (Export Development Specialist, Ontario Ministry of Agriculture and Food).

Details are given on the soybean characteristics desired for each type of soyfood product, especially in the chapter by Dr. Buzzell. Popular soybean varieties include: For Miso: Enlei [Enrei], Fujimejiro, Harcor. For natto: Jizuka, Suzuhime, Nattawa. For tofu: Amsoy, Coles, Harcor.

Letter from Fred Brandenburg of OSGMB. 1994. Nov. 9. "Regarding export promotion before 1982, any activities would have been part of larger government sponsored trade missions. For example, in 1979 Otis McGregor participated in a mission to Asia which was co-ordinated by Michael Loh. It included a number of marketing boards and associations from Canada."

Note: This is the earliest document seen (Dec. 1998) that (apparently) mentions the soybean variety Enrei. Address: P.O. Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

2457. Funcación Tao-Fu. 1982. Proyecto piloto para la produccion e introduccion de los productos derivados de la soya en Quito, Ecuador [Pilot project for the production and introduction of soyfoods to Quito, Ecuador]. Quito, Ecuador. iii + 21 p. March 1. Unpublished manuscript. [Spa]

• **Summary:** Proposal submitted by Richard Jennings and Ismael Janisch. In Feb. 1980 la Fundacion Tao-Fu began its work to introduce soy protein foods to Ecuador. To date, they have developed tofu (seasoned and natural), tempeh, soy yogurt, and soymilk. Address: Casilla 252-A, Quito, Ecuador.

2458. Belleme, John. 1982. Re: New developments at American Miso Co. Letter to William Shurtleff at Soyfoods Center, March 3. 2 p. Typed, without signature or letterhead.

• **Summary:** "We got a really good response from our light miso. People reported using it for dressings, dips and even desserts. We have decided to market our white miso through our wholesale company in bulk only during the winter. We also plan to market a mellow barley and a mellow rice miso, both of which should have a good shelflife.

"Mr. Onozaki just visited our factory for two weeks. He said our koji is some of the best he has ever seen. I was really worried about our koji and his comments settled my anxious mind. He also said our long-term miso is developing fine.

"The ownership of our factory is finally settled. The following will not be participating: Erewhon, Michio [Kushi], Mitoku, Johsen, Oak Feed and Sandy Pukel. This leaves only Barry Evans and myself, we are now the sole owners."

"I am sending you 10 pounds of Mr. Onozaki's rice miso. It is hopefully just like the miso we are making. We are getting a really good response from the East Coast macros; they love Mr. Onozaki's miso. Last year we imported 20,000 pounds.

"Barry and I are starting a wholesale company in Asheville. It's tentatively called Great Eastern Sun Trading Company. We are specializing in hard-to-get macrobiotic foods--will send you a catalog in a few weeks."

Note 1. This is the earliest document seen (March 2006) that mentions Great Eastern Sun, a macrobiotic trading company in North Carolina.

Note 2. On 31 May 1982 John wrote a 2-page typed letter to Dr. Hiroshi Ito at the National Food Research Institute asking for help in making a white miso. Address: Route 3, Box 541, Rutherfordton, North Carolina. Phone: (704) 287-2940.

2459. Root, Evan. 1982. Re: History of macrobiotics. Letter to William Shurtleff at Soyfoods Center, March 4--in reply to inquiry. 1 p. Typed, with signature on letterhead.

• **Summary:** "Here is my reply to your questionnaire." Discusses Sanae, Erewhon, Paul Hawken, Michio Kushi. The original Erewhon store started in April 1966 at 303 Newbury St. Prior to that, some food sales were done from the Kushi's home on a very small scale.

In Oct. 1967, Paul Hawken took over the management of Evan Root moved up the street to commence renovations for Sanae Restaurant. Paul was the main force in expanding and developing Erewhon in the early days. Prior to him it was mainly a cracker barrel style store where people came in to talk philosophy and swap recipes, whether or not they bought anything.

Sanae opened its doors to the public in Feb. 1968.

In the early days of Erewhon one of the suppliers not to be overlooked is Japan Food Corporation. From them we bought seaweeds, fish flakes, gourd strips, and most importantly from your point of view, Hatcho miso. Chico-san and Infinity Foods were in operation before Erewhon and we got most of the Japanese items from them except for a couple of kegs of miso that Junsei Yamaguchi put up in the Kushi's basement.

I do not know this for a fact, but I have speculated that the early tamari that was available when I first got into macrobiotics in 1964 may have been, in fact, real tamari as I distinctly remember that it was thicker and richer than what became available a little later. Address: Relationships, 39 Harvard St., Brookline, Massachusetts 02146. Phone: 617-739-3300.

2460. Aihara, Herman. 1982. Re: Introducing miso and soy sauce to America. Letter to William Shurtleff at Soyfoods Center, March 15--in reply to inquiry. 1 p. Typed, with signature on letterhead.

• **Summary:** "Miso and 'tamari' were imported in America by Ginza, Inc., managed by H. Aihara, in 1961 in New York City. The brand name was not remembered.

"After 16 families moved to Chico and started Chico-San, Chico-San imported Marushin soy sauce and miso. Ohsawa arranged the manufacture and export in Japan. Ohsawa always supervised and examined the products.

"Ohsawa told us to call natural soy sauce 'tamari'. The reason is, he named natural soy sauce 'Ohsawa Soy Sauce'

in Europe and gave its sole agency to someone else. This guy started to import bad soy sauce and called it 'Ohsawa Soy Sauce.' Then, Ohsawa began importing a good one by himself, but could not use the name 'Ohsawa Soy Sauce.' Therefore, he called soy sauce 'tamari.' (A mistake, I think.) Chico-San has been importing the best quality of miso and soy sauce (named 'tamari') even though the cost was higher than other, lower grades." Address: President GOMF, P.O. Box 426, Oroville, California 95965.

2461. Rothman, Sandy. 1982. Re: History of work with macrobiotics and soyfoods in America. Focus on Herman and Cornelia Aihara, and Chico-San. Letter to William Shurtleff at Soyfoods Center, March 17. 5 p.

• **Summary:** Also discusses Alcan Yamaguchi, Zen Teahouse, Paradox, Michio Kushi, Musubi, Irma Paule. Address: GOMF, Oroville, California.

2462. Kushi, Michio; Kushi, Aveline. 1982. Re: History of work with macrobiotics and soyfoods in Boston. Letter to William Shurtleff at Soyfoods Center, March 29. 2 p. Typed, without signature on letterhead.

Address: 62 Buckminster Rd., Brookline, Massachusetts 02146.

2463. *Better Homes and Gardens*. 1982. Cooking with miso. 60:Z5. March. *

• **Summary:** Includes recipes.

2464. **Product Name:** [Barley Miso].

Manufacturer's Name: Lima-Andiran.

Manufacturer's Address: Moulin d'Andiran, 47170 Mezin, France. Phone: 58-651-002.

Date of Introduction: 1982. March.

New Product–Documentation: Letter from Pierre Gevaert. 1981. Nov. 19. Letter from Sjon Welters. 1982. April 16. "Important news is that Lima started to market their miso. It is made in their own plant and farm in the southwest of France." Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 233. This miso plant, which started in 1981, was powered by hydropower. *Soya Bluebook*. 1986. p. 111. "Lima France. Affiliate of Lima Belgium. Le Moulin d'Andiran, 47170 Mezin, France. Mr. Stevens, Sales Mgr."

Talk with Don DeBona of American Miso Co. 1997. March 25. Lima-Andiran was acquired in early 1990 by Pierre Gevaert's son (Daniel) and his wife (Valérie), and renamed Danival. The location of their factory in Mézin, France, has not changed.

2465. Quebral, Florenco C. 1982. [Soybeans in] The Philippines. *INTSOY Series* No. 22. p. 166-71. J.B. Sinclair and J.A. Jackobs, eds. Soybean Seed Quality and Stand Establishment (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** Contents: Introduction. Cultivar improvement. Planting. Inoculation and fertilization. Pests and diseases. Intensive cropping. Utilization. Costs and returns. Marketing. Marketing program. Areas that need attention. Cooperating agencies.

"The domestic supply of soybeans has never been sufficient to meet national demands for food, feed, and industrial uses. Total domestic soybean production in 1978 was reported to be 7,099 metric tons. Approximately 176,000 metric tons of soybeans, costing \$30.8 million, were imported.

"To boost domestic production, the government has launched projects like Masaganang Maisan, the white corn and feed grains program, and the National Soybean Development Program...

"Researchers at the University of the Philippines at Los Baños have produced bottled soymilk (Philsoy) using the hot water grind technique... Fermented soybean products, such as soy sauce, soy cheese (tokwa [tofu]), soy paste (miso), soy curds (tahuri [tofu in brine]), and canned salted beans (tausi) are the most common soybean products used as ingredients in traditional Filipino dishes. A cheese-like product served with sugar syrup (taho) is sold by ambulant peddlers in urban centers." Address: Prof. of Plant Pathology, College of Agriculture, the Univ. of the Philippines at Los Baños.

2466. Shurtleff, William; Aoyagi, Akiko. 1982. History of the soyfoods movement in North America. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 50 p. March. Unpublished typescript.

• **Summary:** A comprehensive history of the subject. Contents: New image of soyfoods and causes of interest: Good health, nutrition and fatness, weight loss diets, low-cost protein, meatless and vegetarian diets, world hunger, appropriate technology and right livelihood, voluntary simplicity, ecology and conservation, interest in East Asian cultures, spiritual practices, and cuisines.

Allied movements: Macrobiotics, natural foods, Rodale Press, vegetarianism.

Characteristics of the soyfoods movement: Major foods and types of products, comparison of soy protein industry (high tech) and soyfoods industry (low tech), appropriate technology, relevance to the Third World, conclusion.

The Farm in Tennessee. *The Book of Tofu* and Soyfoods Center. Early soyfoods manufacturers. Soyfoods delis and restaurants. Second-generation soyfoods manufacturers and distributors (e.g. Swan Foods in Florida). Tofu kits and equipment. Soyfoods terminology. Founding of the Soycrafters/Soyfoods Association of North America: Richard Leviton. Growth of the Soyfoods Association: First conference, Soyfoods magazine, subsequent conferences, SANA problems, The New Soyfoods Association–Gary Barat and Michael Austin of New York City.

Soyfoods books and booklets. Media coverage. Growth of the soyfoods industry, including the Soycrafters Apprenticeship Program. Soyfoods Marketer/Distributors: Yellow Bean Trading Co., Garden of Eatin', Jolly Licks. Soyfoods in foodservice institutions. Influence and activities abroad. The future.

Note: This is the earliest document seen (Oct. 2008) that uses the term "Second-generation" in connection with soyfoods to refer to a soyfood product which uses a basic soyfood as its major ingredient. Thus, Tofu Cheesecake, Tempeh Lasagne, and Instant Miso Soup are all commercial "second-generation soyfood products." If made at home for home use, they would be "second-generation soyfoods." For some products, the line between basic and second-generation soyfood products is blurred, since some second-generation products that have as long history have come to be thought of as basic. For example: Deep-fried tofu burgers (*ganmodoki*), teriyaki sauce, etc. Address: Lafayette, California. Phone: 415-283-2991.

2467. Soy Plant Co-op Inc. (The). 1982. Price list effective 3/22/82 [22 March 1982]. Ann Arbor, Michigan. 1 p. 28 cm.
 • **Summary:** This typewritten sheet contains three columns: Supplier, product, and price. The Soy Plant is supplier of (packaged or in bulk): Tofu (1 lb tub), plain soy milk and flavored soy milk (quarts), tempeh (8 oz), soysage (8 oz), miso garlic dressing (16 oz), Soyanaise (soy mayo, 16 oz), carob tofu pies, missing egg salad, tofu spinach quiche, gomaseao [gomashio]. Other suppliers are Micro Farms (alfalfa- or mung bean sprouts), Westbrae Foods (miso-3 types), The Grocery (The Tofu Cookbooklet), and Learning Tree (tofu kit, \$13.50 each).

New products available soon: Tempeh salad. Tofu tahini spread. Address: 711 Airport Blvd., Suite #1, Ann Arbor, Michigan 48104. Phone: (313) 663-8638.

2468. *SoyaScan Notes*. 1982. Chronology of Great Eastern Sun Trading Company in North Carolina. 26 Jan. 1994. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1982 March—The company is founded by Barry Evans. Martin Roth is the first manager. The original purpose is to be a distributor for the miso made by American Miso Company. But the company soon decides to import Japanese macrobiotic products from Mitoku (the first order was placed in Jan. 1982) and later to become a manufacturer.

1984 July—Great Eastern Sun starts to import Ah Soy (soymilk, in chocolate, vanilla, and original flavors). Made in Japan by San-iku Foods, and sold in a stand-up foil retort pouch, it soon becomes very popular. Don DeBona is the first product manager. Address: 92 Macintosh Rd., Asheville, North Carolina 28806.

2469. Welters, Sjon. 1982. Re: Recent developments with soyfoods in Europe, and ties with macrobiotics. Letter to William Shurtleff at Soyfoods Center, April 16. 6 p.

• **Summary:** This letter, whose letterhead reads "Manna Natuurlijke Levensmiddelen," contains names and addresses of many new soyfoods companies, many of them started by people interested in macrobiotics. Names and addresses of the following companies are given: Tofu Denmark (in Valby, run by Per Fruergaard, a macrobiotic), Bernard Storup, Ab & Paulien Schaft (Dutch, setting up a small shop in Baillestavy, France, to make miso, shoyu, natto, and koji), Traditions du Grain (Jean Luc Alonso is setting up a macrobiotic tempeh shop in Ivry France; they will start this summer), Paul Jones (Tofu shop in London), Saskia de Jong (may make miso in Ireland), de Brandnetel (tofu shop in Antwerp, Belgium), Jonathan (makes tofu, ganmo, seitan, mochi in Ekeren, Belgium. Run by J. v. Ponsele), Seven Arrows (Leuven, Netherlands; making tofu), Lima Foods (now sell miso made at their plant and farm in France), Witte Wonder (Den Haag, Netherlands), De Morgenstond (Bakkeveen, Netherlands), Jakso (Heerewarden, Netherlands. Run by Peter Dekker. The first and only shop making tempeh from organic soybeans), Firma Lembekker (Amsterdam), Unimave (Lisbon, Portugal), Jose Parracho (Setubal, Portugal), Swame [sic, Swami] Anand Svadesha (Furth im Wald, West Germany), Bittersuess (Cologne, West Germany. Attn: Thomas Kasas/Karas). Three distributors of soyfoods and natural foods in Germany are YinYang (Berlin), Rapunzel (Heimraadshofe), and Mutter Erde (Werbelen). In Finland: Luonnonruokakauppa AUMA (Helsinki). In Switzerland: Verena Krieger of Sojalade (Engelberg, tofu shop), Hans Rudolph Opplinger (Cham, tofu shop), Marty Halsley (Nyon, tofu & tempeh), Restaurant Sesam (Bern). P. Ton van Oers is a Dutch priest who works in Kananga, Zaire. The natives have grown soya for 10 years and he is thinking of making tofu and soymilk from them.

"In Great Britain the East West Centre is very active in promoting soyfoods. As a part of the Kushi Institute program they have home-scale processing, in which tofu, tempeh, and miso-making are taught by Jon Sandler [Sandifer?]. He is the tempehmaker of the EWC too at Community Health Foundation, 188 Old St., London EC1. In the Netherlands, a great deal of soyfoods promotion is done by the East West Center and Manna. As you probably know, Manna was the first to introduce miso, tamari, shoyu, tempeh, tofu and koji to the larger public and we are still the main promoters of soyfoods as part of a more natural, vegetarian, and economic diet. Manna has been followed by a lot of other distributors of natural and health foods. We have two competitors in the tofu business: Witte Wonder and De Morgenstond.

"At the moment I'm the only teacher giving lectures on homescale miso-, tofu-, tempeh-, shoyu-, tamari-, natto-,

and koji-making in the Netherlands. Mainly at the East West Centre and sometimes at different places in the country. People are starting to get interested.”

Note: This is the earliest document seen (Jan. 2003) concerning the work of Swami Anand Svadesha of West Germany, and of Thomas Karas of Bittersuess (Cologne, West Germany). Address: Stichting Natuurvoeding Amsterdam, Meeuwenlaan 70, 1021 JK Amsterdam-N, Netherlands. Phone: 020-323977.

2470. Hawken, Paul. 1982. History of Erewhon and macrobiotics in America. Part I (Interview). Conducted by William Shurtleff of Soyfoods Center, April 18. 3 p. and 5 p. transcripts.

• **Summary:** Hawken played an important and very innovative role in establishing the natural foods industry in America and in building Erewhon into a major distributor of macrobiotic and natural foods.

Chico-San imported foods from Tokyo CI (Centre Ignoramus); Muso didn't exist at that time.

The Kushi's never made tofu or nigari tofu. They were not big tofu eaters, largely because tofu was considered too yin—ridiculous. Then people started craving it, and buying it from Chinatown. But the tofu they bought was not made with nigari.

By the mid-1960s there were roughly 300 to 2,000 people actively involved with macrobiotics in the USA—including Michio Kushi's students, Herman Aihara's students, and those in New York and Boston.

Beth Ann Simon had started using heroin again before she died [on her No. 7 macrobiotic diet]. The family covered it up, blaming Japanese and tamari. But she was not the only one who died. George and Lima Ohsawa's only child died within a year of being born in Tokyo (according to Lima) from excess salt.

Erewhon was started by Aveline Kushi, not by Evan Root. Paul does not know who gave Erewhon its name [it was Aveline Kushi]; of course, it is “Nowhere” scrambled, as in the title of the famous 1872 novel by Samuel Butler about a utopian island divested of machinery. Originally various people would drive to Pennsylvania to see the Mennonites and Walnut Acres. It was a buying club for students who lived in the Kushi's house in Cambridge, Massachusetts. Foods such as wheat, [whole-wheat] flour, oatmeal. Nothing imported from Japan. It was started with \$500 cash in the basement of the Kushi's house. It backed into being a store since it was cheaper to buy larger quantities. The food was divided up into little bags and a price was written on each. It was sort of a way of buying food for people at the Kushi's house, like Aveline doing her shopping for 10-12 people in the first big macrobiotic study house. It began to outgrow the house and outside students wanted good food. It was never seen as a business or a

money-making venture. Good food was so difficult to get in those days.

Another source of good food was Infinity Foods in New York City, started and owned by Howard Rower; they had a warehouse and were wholesaling by mid-1965. Soon Howard was importing miso and tamari (shoyu / soy sauce) from Tokyo CI. “This ‘guaranteed’ its quasi-medicinal effects. Otherwise it didn't work. It was actually the best food—really.” Then Howard started to import directly from the manufacturers of miso and shoyu in Japan: Hacho miso and Marushima shoyu (whose owner knew Ohsawa intimately). Paul visited Marushima in 1969. Paul thinks Marushima bought their shoyu from other shoyu factories on the island, or maybe they made it in the early days. Paul thinks there is a big difference in taste between shoyu made from whole soybeans and that made from defatted soybean meal (*dashi daizu*). Paul was suspicious of Marushima shoyu in 1970; he demanded that Muso Shokuhin change to Johsen [Sendai Miso Shoyu] as their source; Johsen has a long history and the owner was also one of Ohsawa's cronies.

Paul left Erewhon in 1973. He went to Japan three times. The first trip was in March 1969, when he set up Mitoku in the natural foods business; before that they were an importer or hockey equipment. Muso was called Osaka CI; neither of those two companies were exporters before that time.

In the early days of the below-ground store in Boston, more of the foods came from Lima Foods in Belgium than from Japan. The miso and shoyu in those days came from Infinity Foods in New York City. They did not carry tofu because there was no refrigeration. None of the food was sent by the Kushis' friends.

In the early days of that store, Evan Root just tended the store, which had sales of about \$20–\$30 a day. The store was Aveline's idea. Evan was Aveline's lover—and not the only one. The store was originally called simply “Erewhon.” Paul later added the words “Trading Co.” when he incorporated it in the late fall of 1967. Paul and Aveline each owned 50% of the corporation. During its first year as a corporation, sales went from \$1,000/month to \$9,000/month—and not because it was macrobiotic. Erewhon was the first natural food store (as opposed to health food store) in America. It sold no pills. Many of the customers were not macros; they wanted whole foods. In mid-1968, as Paul was ready to leave Erewhon, someone came into the store and asked: “How do you know the oil is cold-pressed? And how do you know the grains are organically grown? He couldn't answer. So he wrote letters and found out that most were not what they claimed to be. Then Paul decided to use Erewhon to create a true food supply. He went directly to farmers. He didn't trust anyone. The idea was to know where the food came from and to have no middlemen between Erewhon and the producers.

In Oct. 1968 the little Erewhon retail store moved up and across the street to a new location at 342 Newbury Street. At that time they began to sell wholesale and to import from Japan, by correspondence with Mr. Kazama. The first import order from Japan, dated Aug. 1968, was *aka miso* (red rice miso—superb) from Sendai Miso Shoyu and Marushima shoyu. Soon customers who used to drive 400 miles to buy staples from Erewhon started to open their own stores. The natural foods business mushroomed. Erewhon started selling tofu in 1968 at 342 Newbury; they got it from a Chinese tofu maker in Boston. Nigari came in much later, after 1973. Neither Evan nor anyone else wanted to work at or run Erewhon; they all wanted to teach macrobiotics.

Paul was selling whole dry soybeans at that, but mostly non-macros were eating those soybeans. Erewhon's first supplier, in mid-1968, was a wheat grower in North Dakota. Carl Garrich in Lone Pine, Arkansas, was much later. Paul got his first soybeans from a guy in a boxcar who was an insurance salesman, but who worked one day a week selling soybeans and wheat. Paul also bought soybeans from Deaf Smith County, Texas. Paul knew Frank Ford of Deaf Smith County in the early days. Paul was vice president of Arrowhead Mills before Roger Hillyard even worked for them. He ground his flour in a boxcar.

Paul wrote a long and detailed article about the early history of Erewhon titled "Erewhon: A biography. The view within," published in the Aug. 1973 issue of *East West Journal*. He was upset at the time. It was critical of the Kushis, and Paul explained why he was about to leave Erewhon. Robert Hargrove, editor of the journal, ran it anyway. Since then, Erewhon's history has been sanitized. Continued. Address: California.

2471. Hawken, Paul. 1982. History of Erewhon and macrobiotics in America. Part II (Interview). Conducted by William Shurtleff of Soyfoods Center, April 18. 3 p.

• **Summary:** Continued: Erewhon grew rapidly. One year after moving to the new location they had sales of \$35,000 to \$40,000 a month, both wholesale and retail. Paul thinks Erewhon had a retail catalog from 1967 to 1970. Paul was president (until 1973, when he left) and half owner. Then he left for Japan. Before leaving he made a great error, by signing over his half of the stock to the corporation in case something happened to him. It was put in escrow, but he could never get it back. When Paul left for Japan, Roger Hillyard, Bill Tara, Bruce Macdonald, and Jim Docker were all working for Erewhon. He had hired many or all of them, and everything was in place for takeoff. Erewhon did not get its big brick warehouse until July 1970.

When Paul first went to Japan in the spring of 1969, He traveled with Mr. Kazama of Mitoku, visited many factories, and set up sources. He tried to find out where

Tokyo CI and Osaka CI were getting their foods. He was in Japan for about 9 months, from March to December.

When he returned, he opened Erewhon in Los Angeles; Roger Hillyard was still in charge of Erewhon in Boston. Then he started Organic Merchants with Fred Rohe, and started writing "The Sugar Story," "The Oil Story," and other leaflets. His main interest was now in providing accurate information about foods. In mid-1970 Erewhon stopped its mail order catalog and business when it moved into the brick warehouse.

Originally Erewhon Los Angeles and Erewhon Boston were one; about 4 years later they split in two.

When Paul left in 1973, Erewhon was contracting directly with something like 57 farms in 35 states producing organically grown foods, including lots of produce. This program began in 1968, included the Lundberg Brothers (who grew brown rice organically in Northern California), and led to the wholesale business. Paul and Erewhon helped many other natural food companies to get started.

The Natural Food Distributors Association [Organic Merchants] was not successful because it was Paul's idea and he left. Lack of money and fundraising were secondary. His goal was to see cooperation in the industry.

In conclusion Paul says: "Read the article [in *East West Journal*] and then we should talk again. You'll have a lot more questions." He asks Shurtleff to send him a photocopy of the article as well as the final draft of the chapter on the history of macrobiotics (including Erewhon); he'll be glad to recheck it. Address: California.

2472. Okada, Teizo. 1982. Re: History of Muso Co. Ltd. (Muso Shokuhin) in Japan. Letter to William Shurtleff at Soyfoods Center, April 22. 2 p. [Eng]

• **Summary:** Muso was started in 1959 by Mr. Shuzo Okada, president of the World Macrobiotic Association in Osaka. George Ohsawa was not involved in establishing the company, but he was very much involved in the company's direction as an Associate. Muso started exporting soyfoods to the West in 1963. The first foods were shipped to Lima N.V. in Belgium. The first soyfoods were shipped to America in 1966, when mugi (barley) miso was shipped to Chico-San Inc. in Chico, California.

Note: Compare this history with that given by Ronald Kotsch. 1984. "Made in Japan—naturally: Natural foods from the Muso Company are popular worldwide." *East West Journal*. Dec. p. 14-21. Kotsch states that Muso was founded in 1966 and began to export macrobiotic foods from Japan to the West in 1969. Address: Export Dep., Otedori 2-5-1, Higashi-ku, Osaka, Japan. Phone: 06-945-0511.

2473. Dreyer, Lawrence. 1982. Re: International fair and symposium on soya products in Salzburg. Letter to William

Shurtleff at Soyfoods Center, April 27. 2 p. Typed, with signature. [Eng]

• **Summary:** “The Way of Nature (*Weg der Natur*), a foundation, was established in Austria with the express purpose of disseminating information about macrobiotics, food, and their relationship to our health. Each of the founding members have had at least 2 months training at a temple in Japan.” The foundation plans to hold an international fair named Bio Life 2000 in Salzburg from 17-20 Nov. 1982. “The foundation has, for the past two years been linked to a Natural Food Shop and has been, for this period, producing tofu and miso. This shop will be represented at the Fair and will be exhibiting and selling macrobiotic foods, snacks, and drinks. To run concurrently with the Fair, the Foundation is also planning a symposium on Soya products, Miso, Tofu, Tempeh, etc.

“The program will include lectures and discussions on planting and growing soya beans, making soya products, the suitability and advantages of soya products in the diet of Mankind with particular emphasis on the peoples of the West, and the substitution of soya products for animal products as a source of protein. There will also be demonstrations on cooking natural foods and the production of tofu and miso.

“The symposium will be conducted in both English and German and possibly also in French. The media, press, radio and TV have all expressed a keen interest in this fair, so a wide coverage is assured. We would be delighted if you, as the initiator of the use of tofu in the West, would be prepared to participate in this fair.”

Note: A handwritten letter from Lawrence Dreyer (1983 Feb. 15) states that this fair was never held. His company is still producing tofu with equipment purchased in Japan a couple of years ago. Address: Director.

2474. Endo, Y. 1982. [Re: Yamashin shiro shoyu (clear shoyu)]. Letter to William Shurtleff at Soyfoods Center, April 30—in reply to inquiry. 2 p. [Jap; eng+]

• **Summary:** Shiro shōyu was invented by the people of Mikawa-koku, Shinkawa-machi (presently Aichi-ken / Aichi prefecture, Hekinan-shi), after getting a hint from the seasoning liquid (*uwajiru*) that rises from Kinzanji-miso. The latter is a type of finger lickin’ miso (*namémiso*) which was tasty, light colored and was made about 180 years ago—at the end of the Edo / Tokugawa period, Kansei-Bunka. That are is well known for making tamari (which has a dark color and strong flavor) and red miso (*akamiso*) from the old days. It was probably from necessity that the local people worked to develop a seasoning that brings out the flavor of each food.

Therefore shiro shōyu is a very local product. It is made mainly in Aichi prefecture. At present, the largest manufacturer is Yamashin Shoyu K.K. [the writer’s company].

Shiro shōyu is different from regular Japanese [*koikuchi*] shōyu in that it has less fragrance and a lighter color. Therefore it is used in foods that require a subtle flavor, such as *nimono*, *chawanmushi*, *suimono* (clear soups), noodle dishes, etc. In early times, it was considered to be the best seasoning for enhancing the flavor in the food itself, and was used only in high class restaurants, noodle shops, etc. More recently, it has become popular among regular householders. For Japanese love subtle tastes and the natural colors of foods; this shōyu doesn’t mess up either of these. In Western-style cooking it is good in soups, stews, cabbage rolls, gratin, etc. In Chinese cooking try it in ramen noodles, sweet and sour pork (*subuta*), *happosai*, stir-fried vegetables, etc. In Japanese cooking it is tasty in clear soups, soba (buckwheat noodles), udon noodle broth (*tsuyu*), vegetable cooking, omelets (*tamago yaki*), and *zoni* (meatless soup with mochi and vegetables).

“Although you asked for early documents, we are not aware of any. Nor do we know how shiro shōyu was used in the olden days. In our company we have no old records; they were destroyed by fire. We are very sorry that we cannot help you on that.

“We have heard one interesting story. At the end of the Edo / Tokugawa period, in 1857 (Ansei 4), Townsend Harris, the United States’ ambassador, brought a letter from president James Buchanan [president 1857-1861] and visited Edo Castle to meet with the 13th shogun, Tokugawa Iesada (ruled 1853-1858). In the Willow Room (*yanagi no ma*) of Edo Castle they had a meal and shiro shōyu made by our company was used, under the name of Mikawa Shiro Tamari.

“Instead of answering your individual questions, we would like to give you this overview. Please excuse us. If you need further details, please let us know.” Address: Yamashin Shoyu K.K., 3-36 Nishiyama-cho, Hekinan-shi, Aichi-ken 447, Japan.

2475. Chico-San, Inc. 1982. Choice imported natural foods (Ad). *Bestways*. April. p. 65.

• **Summary:** A half-page black-and-white photo shows Lima Ohsawa, wearing a kimono and carrying a tray of Japanese foods, including Lima Soy Sauce. “Top quality natural foods and condiments are imported from Japan under the supervision of Mrs. Lima Ohsawa, Chico-San’s specialist in macrobiotic foods.”

Chico-San imports from Japan include Lima Soy Sauce, soybean puree (miso), mineral-rich mercury-tested seaweeds, azuki beans, black soybeans, barley koji, kuzu, nigari, and tekka. “Soon, a companion for Lima Soy Sauce—Lima Tamari—Wheat Free—Whole soy beans—Rice & zestful—Naturally brewed in wooden casks for about 2 years.” Address: Chico, California 95926.

2476. *East West Journal*. 1982. Bookshelf (Ad). April. p. 70-72.

• **Summary:** This mail order catalog includes four types of books; the first two are related to macrobiotics. 1. Getting started. 2. Cooking. 3. Exercise. 4. General topics: Incl. *The Book of Tofu* and *The Book of Miso* by Shurtleff & Aoyagi.

2477. Jacobs, Leonard. 1982. The Chico-San story: Popularizing rice cakes in America. *East West Journal*. April. p. 58-61.

• **Summary:** A history of Chico-San, including Bob Kennedy. In October 1961 Kennedy and 31 other pioneers left New York for California. Chico-San was founded that year by Kennedy and Herman Aihara. They soon began importing miso and shoyu from Japan. In 1968 Kennedy began negotiations for the Lundberg Brothers of Wehah Farm, Richvale, California, to grow brown rice for him organically. In 1974 Kennedy brought Junsei Yamazaki into the company to begin making miso and tamari soy sauce according to Chico-San's standards.

2478. Leviton, Richard. 1982. A new soy sauce from an old culture. *East West Journal*. April. p. 42-44.

• **Summary:** Hoang Van Chi, a native of Vietnam, makes Bodhi Sauce or tuong cu-da in Bowie, Maryland. Photos show: (1) Phan and Hoang Van Chi with bottles of both the sauces they make. (2) Hoang checking glutinous rice that has been steaming overnight. (3) Phan and Hoang involved in four steps in the preparation of sweet rice koji. Address: 100 Heath Rd., Colrain, Massachusetts 01340.

2479. Shieh, Y.-S. Carol; Beuchat, L.R. 1982. Microbial changes in fermented peanut and soybean pastes containing kojis prepared using *Aspergillus oryzae* and *Rhizopus oligosporus*. *J. of Food Science* 47(2):518-22. March/April. [14 ref]

Address: Dep. of Food Science, Univ. of Georgia, Athens, GA 30602.

2480. Evans, Barry. 1982. Amendment to Articles of Incorporation of Oak Feed Miso, Inc. Dade County, Florida. 3 p. May 5. Unpublished typescript.

• **Summary:** This amendment officially changes the name of the corporation to American Miso Company from Oak Feed Miso, Inc. The change was approved by the stockholders and board of directors at the annual meeting of the shareholders held on 19 April 1982 at the North Carolina office of the company in Rutherfordton, North Carolina. Signed on 5 May 1982 by Barry Evans, President, and Janet Belleme, Secretary.

A separate one-page document on State of Florida letterhead shows that this Amendment was filed with the State of Florida Department of State on 19 May 1982. The

charter number of this corporation is 613063. Address: Dade County, Florida.

2481. Deakin, Doris. 1982. Hand-me-down recipes that taste of tradition. *Washington Post*. May 26. p. E1, E8, E10.

• **Summary:** In this era of fast foods, we have lost the tradition of mothers handing down to daughters their favorite recipes—often handwritten and often together with stories about the family. These recipes and stories are a special kind of nourishment.

Yet many other cultures have their traditional dishes and story accompanies many of them. In China, one such dish is Ma-Po Tofu. Victoria Chen, formerly of Shanghai and Taiwan, who teaches Chinese cooking in Montgomery County, tells her students this story. “Ma” means smallpox scar and “Po” means woman. “Tofu” is bean curd. After this woman contracted smallpox, her face was scarred. Then her brother died, leaving a widow and two children. The family land was so small that they could not earn a living from it. To help her brother's family, the scarred woman tried to find a husband, but she could not. So the sisters-in-law developed this recipe, and sold it to passers by. In this way all were able to survive.

The recipe calls for “1 pound bean curd... 1 tablespoon black fermented beans, chopped... 2 tablespoons soy sauce... 1 tablespoon hot doe-ban paste [douban-jiang] for hot bean sauce.” Cut the “tofu” into 1 by 1 by ½-inch pieces. Saute the “black beans” for a few minutes but do not crush.

2482. Pautz, Jane Abe Cadwell. 1982. Re: Directory of soyfoods manufacturers in Sao Paulo, Brazil, and comments on the availability of these foods. Letter to William Shurtleff at Soyfoods Center, May 29. 3 p. Typed.

• **Summary:** List all known companies in Sao Paulo that may soyfood products A separate listing is given for each product with the full company name and address. Address: Rua Spinagés 1971 Apto. 61, 01258 Sao Paulo, Brazil.

2483. Krieger, Verena. 1982. Die tausend Talente von Tofu [The thousand talents of tofu]. *Natuerlich* 2(5):69-73. May. [Ger]

• **Summary:** An excellent overview, with numerous color photos of recipes, products, and plants. “Tofu found its way to Europe not over the steppes of Asia but through the kitchens of North America, starting with *The Book of Tofu* by Shurtleff and Aoyagi.”

Contents: What is tofu? Why tofu? Soya—king of the beans (Switzerland imports 100,000 tonnes of soybeans each year to feed to animals). Tofu and its brothers. Is soy an exotic plant? The most important traditional soyfoods of East Asia: Tofu, miso, soymilk, tamari, shoyu and soy sauce (*sojasauce*), tempeh, soy sprouts (*sojakeime*).

2484. Leviton, Richard. 1982. Discovering Japanese soyfoods. *Vegetarian Times* No. 57. May. p. 60-62, 65. [1 ref]

• **Summary:** Recently Richard Leviton traveled to Japan with a group of Americans to get a firsthand look at the Japanese soyfoods industry. He discusses tofu (the Japanese consume 10 million cakes a day) and tofu manufacturers (large and small), Takatsuka Marugo (a large tofu maker that churns out 100,000 lb/day of tofu), Yuba Han (a traditional yuba shop in Kyoto), Asahimatsu Kori-dofu Co., natto, Hamanatto, soymilk, cooked soybeans with wakame, soy sprouts, kinako powder, packaged green soybeans in the pods, miso (fresh and freeze-dried), Linda Barber (an American home economist who is teaching at Kobe Girl's College in Nishinomiya, and also teaching American-style tofu recipes to Japanese housewives via television and the print media), and Sasa-no-Yuki, a 279-year old restaurant that specializes in tofu cookery. Photos show dishes served at Sasa-no-Yuki, a man hanging up fresh yuba at Yuba Han, and the group enjoying a Japanese meal. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2485. Leviton, Richard. 1982. Tour: April 21-28, 1982. Itinerary and notes from trip to study soyfoods on the East Coast and in the Midwest. Colrain, Massachusetts. 21 p. Unpublished typescript. 28 cm.

• **Summary:** Visited: Nature's Grace (Honesdale, Pennsylvania), Real Foods (Allentown, PA), Cricklewood Soyfoods (Mertztown, PA), Kingdom Foods (Washington, DC), Sam Sung Tofu Co. (Washington, DC), Edward & Sons Trading Co. (Saluda, North Carolina), American Miso Co. (Rutherfordton, NC; April 24), Blue Ridge Soyfoods (Fletcher, NC), The Farm (Summertown, Tennessee), Everybody's Restaurant (Nashville, TN), Soya Food Products (Cincinnati, Ohio), Rising Sun Soy Farms (Columbus, OH), Hip Pocket Tofu Deli (Columbus, OH), Legume (Verona, New Jersey), The Bridge (Middletown, Connecticut). Includes directions by car to each place. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2486. Mori, H. 1982. Shôwa 56 nendo ni okeru shôyu, miso no kenkyû gyôseki [Review of annual achievements in shoyu and miso research]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 77(5):281-312. [743 ref. Jap]

• **Summary:** This important Japanese-language article, published each year in the May issue of this periodical, has two parts: (1) A review of the past year's major discoveries and developments in the fields of miso and soy sauce in Japan. (2) A bibliography related to those discoveries and developments. Address: Noda Sangyo Kagaku Kenkyusho.

2487. Shurtleff, William; Aoyagi, Akiko. 1982. Soyfoods directory and databook. 1st ed. Lafayette, California: Soyfoods Center. 21 p. May. 28 cm. [0 ref]. 2nd ed. published in June as Soyfoods Industry: Directory and Databook. 52 p. [24 ref]

• **Summary:** A detailed study of the rapidly emerging soyfoods industry and market. Contains original statistics compiled by the Soyfoods Center through interviews with companies. Contents of 2nd edition: 1. Terminology: The many types of soyfoods, traditional and modern. 2. Soyfoods industry directory: Names and addresses of over 850 soyfoods manufacturers in the Western world, plus major soymilk, miso, shoyu, and yuba manufacturers in East Asia. 3. Analysis of the soyfoods industry in the U.S. 4. Trends in U.S. and world soybean production. 5. Analysis of the tofu industry in the West. 6. Analysis of the tempeh industry in the West. 7. Analysis of the worldwide soymilk industry. 8. Analysis of the soy sauce/shoyu and miso industries worldwide. 9. Other: Analysis of the soy nuts industry in the U.S., North America's larger soyfoods delis, cafes & restaurants, soybean crushing industry; overview. 10. Soyfoods terminology and standards. 11. Names of soyfoods around the world: 40 products. 12. Key institutions working with soyfoods in the West.

Note: This is the first market study published by Shurtleff. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2488. Switzer, Larry. 1982. Spirulina: The whole food revolution. New York, NY: Bantam Books. vii + 135 p. Illust. by Akiko Aoyagi Shurtleff. No index. 18 cm. [78* ref]

• **Summary:** Contents: Acknowledgements. Why spirulina? 1. Introducing your venerable ancestors: The microalgae. 2. The history and rediscovery of spirulina. 3. Nutritional value. 4. A natural way to weight control: The diet of no-diet. 5. From vitamin food to vegetable protein breakthrough. 6. Survive and thrive: Food reserves and future microfarms. 7. Cooking with spirulina: Three favorites and thirty recipes. 8. State of the art: Algae farming around the world. 9. Marketing spirulina: Breaking the food barrier. 10. Spirulina and world protein politics. 11. The future: Farming deserts, oceans, and planets. Appendix A: The Proteus-Earthrise story. Appendix B: Product standards and quality controls.

Soy-related recipes include: Instant spirulina miso soup (p. 51). Aquamole dip or dressing (with tofu and tamari soy sauce, p. 53-54). Tofu dip (p. 54). Pro-miso canape (p. 56). Pro-miso soup (p. 57). Tofu eggless salad (p. 63). Miso salad dressing (p. 65). Pastalina (with tofu chunks, p. 68).

"Nature's oldest protein is now a perfect food supplement for diet, energy, and total health." Appendix A expands on the history of Proteus-Earthrise from the 1980 edition of this book. In 1979 Proteus launched the first U.S.

market test of spirulina, first in aquatic specialty feeds and then in the health foods market, under the Earthrise brand. Earthrise products have been marketed through Spruce Street Marketing of Boulder, Colorado, run by Bob Bellows and Terry Cohen, formerly of Celestial Seasonings.

Pages 126-27 note: "One possible criticism of single-cell proteins, such as microalgae and yeast, is their relatively high level of nucleic acid (RNA and DNA) compared to other common foods. The ingestion of large amounts of nucleic acid can raise the uric acid level in the body and increase the chances of kidney stones and gout. The Protein Advisory Group of the United Nations currently recommends that daily nucleic acid intake be limited to 2 grams. These levels are conservative. They allow significant intake with no ill effects. Two grams would be found in 45 grams of Spirulina, which provides 45% of the U.S. RDA adult protein intake. Spirulina will present no problem when taken at the 10 to 20 gram level daily, as suggested by Earthrise." Address: Founder and President, Proteus Corp.

2489. **Product Name:** [Shoyu, and Miso].

Manufacturer's Name: Tozan.

Manufacturer's Address: Bairro Carolos Gomes s/nº, Campinas (SP), Brazil. Phone: (011) 278-2495 or 5826.

Date of Introduction: 1982. May.

New Product–Documentation: Letter from Jane Cadwell Pautz. 1982. May 29. "The misso is called 'misso.'" Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

Letter from Luiz Simas and Bobbi Joels. 1986. Jan. 7. A large company named Tozan claims to devote part of its production to naturally-fermented miso and shoyu, with no sugar. The same address is given, plus a phone number.

2490. Re: First International Natural Food and Health Exhibition. 1982. Letter to William Shurtleff at Soyfoods Center, June 21. 1 p. Typed, on letterhead. [Eng]

• **Summary:** "We were introduced to you by Mr. Lawrence Dreyer from "Weg der Natur" in Austria who forwarded us all the mail received from you.

"At the moment we are organizing the "First International Natural Food and Health Exhibition, Conference, Seminar and Film Festival," which will be held in West Germany in autumn 1984, with the expected attendance of over 40,000 persons.

"We will appreciate very much if you join us to organize within our exhibit the "First International Soyaproducts Conference."

"For this matter we would urgently need your "Soyfood directory" and "Data Book" as well as the "Soyfood Mailing List."

"Also we are very interested to establish a Soya Food Center in Munich, Germany. Please send us information and application forms.

"Also we want a one year subscription to the "Soyfoods Magazine." When possible we want to buy a camera-ready copy of pamphlets about Tofu and Miso in German." Address: Weg der Natur, Amalienstrasse 45, D-8000 Munich 40, West Germany. Phone: (089) 28 37 51.

2491. Bunka Shuppan Kyoku. 1982. *Miso no hon: Tsukutte tabeyō*. The miso [The book of miso: Let's make and eat]. Tokyo: BSK. 96 p. June. Illust. 25 cm. [Jap]

• **Summary:** This colorful book, with many color and black-and-white photos, is packed with Japanese miso recipes. Pages 18-21 describe how to make koji at home in a home-made incubator. Pages 30-31 are a review by Wataru Kawamura of *The Book of Miso* by Shurtleff and Aoyagi; includes a photo of the two authors. Page 22 describes how to use koji to make amazake. Address: Shibuya-ku, Tokyo, Japan.

2492. Chico-San, Inc. 1982. Mail order–Price list. P.O. Box 1004, Chico, CA 95927. 4 p. June. 28 cm.

• **Summary:** Products include: Rice Cakes (6 varieties, with 4 new ones coming soon); all in 3 different packages. Carob coated rice cakes in plain or mint flavors. Yinnies brand products: Taffy, Caramel, or Rice Syrup. Grains, beans, and seeds: Incl. Sweet brown rice, azuki beans, black [soy] beans (the latter two imported from Japan since 1962). Tea. Natural condiments from Japan (some imported since 1962): Lima soy sauce. Mugi (barley) miso. Kome (rice) miso. Rice malt vinegar. Tekka (soy plus). Nigari (for tofu making). Kuzu (wild arrowroot). Salt plums (umeboshi). Sesame oil (dark). Koji, barley. Seaweeds from the Orient: Wakame (curly dulse). Kombu. Hijiki. Kanten (gel). Nori. Household goods: Incl. The Yinnies Brand Rice Syrup Cookbook.

Introducing a new Chico-San Product: Tamari Soy Sauce. Address: Chico, California. Phone: 916-891-6271.

2493. Lappé, Frances Moore. 1982. *Diet for a small planet*. Tenth anniversary edition. Completely revised and updated. New York, NY: Ballantine Books. xiv + 498 p. Illust. by Marika Hahn. Index. 21 cm. [250* ref]

• **Summary:** Listings of soyfoods in index: Soy flour & grits p. 16, Tofu p. 14, Soybeans p. 7, Soy foods (tofu, tempeh) p. 229. Tempeh p. 3. The section titled "Recommended paperback cookbooks" (p. 454-55) includes *The Book of Tofu*, *The Book of Miso*, and *The Book of Tempeh*, by William Shurtleff and Akiko Aoyagi, and an invitation to send a long, self-addressed stamped envelope to their Soyfoods Center in Lafayette, California. Address: Inst. for Food & Development Policy, San Francisco, California.

2494. Leviton, Richard. 1982. *Tofu, tempeh, miso and other soyfoods*. New Canaan, Connecticut: Keats Publishing Inc. 26 p. June. No index. 22 cm. [46 ref]

• **Summary:** Contents: The neighborhood soy deli. What are soyfoods? Soybeans from China. Soyfoods have marched west. The nutritional side of soyfoods. Soyfoods in your kitchen (3 recipes from other cookbooks). The future. Bibliography. A list of soyfoods cookbooks. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2495. Tamura, Shôzaburo. 1982. Re: History of the Japan National Miso Association. Letter to William Shurtleff at Soyfoods Center, June—in reply to inquiry. 3 p. [Jap; eng+]

• **Summary:** The Japan National Miso Association (*Zenkoku Miso Kogyô Kyôdô Kumiai Rengôkai*) was founded on 17 Nov. 1960. Japan's first nationwide miso trade association was founded on 11 Jan. 1940. Its name was *Zenkoku Miso Kogyô Kumiai Rengôkai*. In 1944 [during World War II] it became a controlled company (*Tôsei Gaisha*), and in 1948 its name was changed to *Zenkoku Miso Kogyô Kyôkai*. Finally in 1960 it became the present *Zenkoku Miso Kogyô Kyôdô Kumiai Rengôkai*.

According to Dr. Hideo Ebine, the earliest known article on miso published in a scientific journal was: Kellner, O. [Oskar Johann]; Nagaoka, M.; Kurashima, Y. 1889. "Researches on the manufacture and composition of miso." *Bulletin of the College of Agriculture, Tokyo Imperial University* 1(6):1-24. Dec. Dr. Ebine is head of the Central Miso Research Center, which is in the same building as the miso association.

Concerning statistics on the amount of miso produced in Japan over the past century: There are good statistics on shoyu since it has been taxed nationwide since the Meiji period, but there are no such reliable statistics on miso because it was not taxed, and also because a great deal of miso was made in individual homes in the early days. Address: *Zenkoku Miso Kogyô Kyôdô Kumiai Rengôkai*, Tokyo, Japan.

2496. Tofu Shop (The). 1982. Take-out deli (Menu). 768 18th St., Arcata, CA 95521. 6 panels. Undated. Front and back.

• **Summary:** This 6-panel leaflet and menu is mostly hand-written but partly printed. On the front cover is the logo of a dragon in a circle. "9-6 Monday–Saturday. Hot food served 12-6 daily. In a hurry? Call ahead: 822-7409. Your local soyfoods producer." One panel, titled "Welcome to the tofu shop," states that this is "one of only a handful of traditional-style tofu shops in the Western Hemisphere."

Another titled "Inside our sandwiches" lists the ingredients in each sandwich. Soy-related menu items include: Sandwiches: Tofuburger. Dragonburger. Tofucadoburger. Spinach turnover (with tofu filling). Sesame tofu pocket. Mexican pastry (a mini-burrito filled with spicy tofu). Fuji roll (with rice, [mung] bean sprouts, tofu, and miso). Sushi roll (with nattoh miso filling). Tofu

burrito. Salads: Potato-tofu. Tahini-tofu. Desserts. Beverages: Soymilk. Sides: Tamari, olive and lemon. Sesame tofu dressing. Miso onion sauce. Tofu veggie patty. Baked tofu cutlet. Specialty groceries: Tofu, miso, condiments, crackers, recipes, supplies for tofu and miso making. Address: Arcata, California. Phone: 707-822-7409.

2497. Bhatnagar, P.S. 1982. Re: Request for proforma invoice for publications and materials. Letter to William Shurtleff at Soyfoods Center, July 8. 1 p. Typed, with signature on letterhead.

• **Summary:** He would like to order popular books on miso, tofu, and tempeh. Address: Project Coordinator, All-India Coordinated Research Project on Soybean, G.B. Pant Univ. of Agriculture and Technology, Pantnagar (Uttar Pradesh), India. Phone: 291-292 Rudrapur.

2498. Chen, Shu-hua. 1982. [Utilization of soy bean extracted residue]. *Nung Lin Hsueh Pao [Kuo Li Chung Hsing Ta Hsueh] (J. of Agriculture and Forestry [National Chung Hsing University])* 31(1):27-43. July. [13 ref. Chi; eng]

• **Summary:** Fresh okara was collected from a tofu factory, dried with hot air, and milled into powders, which could be used at levels of 15-50% to fortify flours or other ingredients to make western- or Chinese-style snacks, bread, hot pepper sauce, or miso. Address: Assoc. Prof., Dep. of Food Science, College of Agriculture, National Chung-Hsing University, Taiwan.

2499. Leviton, Richard. 1982. American Miso makes a big move down south. *Soyfoods*. Summer. p. 18-22.

• **Summary:** A feature cover story about John and Jan Belleme and their American Miso Co. in North Carolina. Richard Leviton visited the company in April. "Jan and John Belleme are serious about making miso. After a strenuous 8 months apprenticeship in Japan with master misomaker Takamichi Onozaki and a \$300,000 investment in buildings, land, and equipment, the Bellemes began fulltime, large scale miso production at their Rutherfordton, North Carolina, plant in August, 1981."

Situated on 100 acres in the rural southwestern corner of North Carolina, the occupies two buildings, including a 3,400 square foot Butler style metal-frame concrete base structure for miso processing and a smaller 1,000 square foot garage-style building for rice polishing and storage. The Bellemes live in a comfortable farmhouse up the hill, just a 5-minute walk away. Its important to be near the koji room when you are trying to carefully monitor the growth of 1,200 pounds of rice koji in a traditional koji room with no thermostat. The company "has struck a careful balance between the traditional approach (as with koji, which requires skill and personal attention) and labor-saving mechanization (as with bean washing, soaking, cooking,

mixing,” and moving). The company has the capacity to make 500,000 lb/year [226.8 metric tons/year] of miso. They presently make 3,000 to 4,800 lb/week of light and dark misos. A color photo on the cover shows John Belleme making miso with Kaoru Onozaki (Mr. Onozaki’s eldest daughter) and Haruo (his adopted son—since he had no sons of his own).

Minnesota-grown Prize soybeans are mechanically washed, then transported by conveyor into a 200-gallon (400 lb capacity) pressure cooker, which is controlled by a push button. When done, the removable steamer basket inside the cooker is moved by overhead crane and the soybeans are discharged through the bottom onto a large cooling table, where they are spread by shovels then allowed to cool—with the aid of at least one electrical fan. A push button then causes the table to tilt; the beans are then run into an extruder, and ground to a paste, which is later mixed with the handmade koji. “Belleme’s koji room combines both traditional and automatic features, from manually operated vents to complex humidity and temperature monitors. The koji room is actually two adjoining rooms with a connecting door.”

This excellent article concludes: “For the American Miso Company, the immediate future is replete with energetic plans. The Bellemes will convert their present home into a summer residential center for students interested in studying fermented foods and natural living. Meanwhile John and Jan will build another house for themselves elsewhere on the property. A new plant for packaging prepared miso products is envisioned and there is much talk of shoyu production in a few years. With misomakers as serious about their venture as the Bellemes, the American Miso Company will certainly have a major influence on miso awareness in America.”

Thirteen black-and-white photos show in detail how miso is made at American Miso Co.

A full-page sidebar (p. 22), titled “Roots of the American Miso Company,” tells about the family of Takamichi Onozaki and shows a magnificent half-page black-and-white photo the family—16 members strong.

Talk with Barry Evans, owner of American Miso Co. 2000. July 6. In 1982 the company’s capacity was far less than 500,000 lb/year; there were only eight vats, each of which held about 6,000 lb of miso (which took one year to mature), for a total capacity of about 50,000 lb/year—or roughly one-tenth of what the article says. Moreover Bellemes made much less than 3,000–4,800 pounds of miso per week. Nor did the company make any light miso during the first few years. Address: Colrain, Massachusetts.

2500. Leviton, Richard. 1982. Touring for soyfoods. *Soyfoods*. Summer. p. 32–37, 41.

• **Summary:** At The Farm in Tennessee, the soy dairy, managed by Chuck Haren, “operates 3 days a week, turning

out 7,500 lb/week of calcium sulfate tofu for immediate consumption by the Farm’s 1,300 soyfood lovers.”

Legume: “Gary and Chandri Barat and Robert Shapiro have a booming company on their hands after 1 year of business with an impressive line of prepared frozen tofu entrees and desserts. Jan. 1981 rented facility in Verona, New Jersey. May 1981 Celantano started co-packing. Photos show: Chandri Barat, Gary Barat, and Robert Shapiro of Legume (see also photo on p. 3).

The following people and their companies are also discussed, with photos: Tim Nusser of Rising Sun Soy Farms (Columbus, Ohio). Jim Saunders of Real Foods (tofu shop in a supermarket in Allentown, Pennsylvania). Renate and Karl Krummenoehl of Cricklewood Soyfoods. Jamie and Nancy Stunkard of Nature’s Grace. Joel Dee of Edward & Sons in Saluda, North Carolina (marketers of Miso-Cup). Henry Salazar of Sam Sung Tofu Co. Eileen Foote and Eileen Judge of Kingdom Foods. Bob Hunt of Blue Ridge Soyfoods. Soya Food Products in Cincinnati (Ben & Nina Yamaguchi). Rising Sun Soy Farms. Bill Lutz of Hip Pocket Tofu Deli (Columbus, Ohio). Robert Marrochessi and Bill Spear of The Bridge (Middletown, Connecticut). Suzy Jenkins and Laurie Praskin of Plenty (Summertown, Tennessee). Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2501. **Product Name:** Tree of Life Miso [Mugi Miso, Genmai Miso, Hatcho Miso, Kome Miso].

Manufacturer’s Name: Tree of Life, Inc. (Importer/Distributor). Made in Japan.

Manufacturer’s Address: 315 Industrial Dr., P.O. Box 410, St. Augustine, FL 32084. Phone: 904-829-3483.

Date of Introduction: 1982. July.

How Stored: Shelf stable.

New Product–Documentation: Brochure. Undated. Tree of Life natural foods of Japan. Talk with Donna Detoro at Tree of Life. 1988. Sept. 23. These 4 miso products were introduced in April 1982. Talk with Greg Leonard of Tree of Life. The miso products were launched on 15 July 1982.

2502. Brown, Judy A. 1982. Soyfoods are catching on. The soyfoods industry has shown astonishing growth. Who created the boom and why? *Whole Life Times* No. 20. p. 34–36. July/Aug.

• **Summary:** Contents: Introduction. Idealism guides many soycrafters. Soybean goldmine. Tofu. Tempeh. Miso. Soymilk. Soy inhibitions. Wave of the future. Photos show: William Shurtleff and Akiko Aoyagi. Richard Leviton. Michael Cohen.

2503. **Product Name:** Miso+Plus. All Natural Dip Mix [Chive, or Jalapeno].

Manufacturer’s Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer's Address: Route 1, Box 153, Saluda, NC 28773.

Date of Introduction: 1982. August.

Ingredients: Jalapeno: Miso (soybeans, rice, seasalt), onion, garlic, parsley, oregano, cumin, turmeric, jalapeno pepper. Chive: Miso, onion, parsley, garlic, chives, nutmeg, ginger, dill weed.

Wt/Vol., Packaging, Price: 6 oz (17 gm).

How Stored: Shelf stable.

New Product–Documentation: Spot in Soyfoods. 1983. Winter. p. 49. "Miso Dips Without Compromise." Slogan: "Convenience Without Compromise." Prepare by adding sour cream, yogurt, avocado, etc. Leaflet. 8½ by 11 inches, color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Label. 1986. 8 by 6 inches. Plastic packet. Red, green, orange, yellow, black. Chive has an olive-green background. Jalapeno has a burgundy background. Both have color photo of vegetables surrounding dip. "No additives. No preservatives. Convenience without compromise." Gives serving ideas. "The story of Miso+Plus: Miso (pronounced mee'-so) is one of East Asia's most important soy foods. Recipes for this savory vegetarian delicacy date back over 2,000 years! Miso's flavor and versatility have been prized for centuries as the foundation for soups, stews, and many traditional dishes..."

2504. McGregor, Otis. 1982. Soybeans—The human consumption approach. *Notes on Agriculture (Guelph, Ontario)* 18(1):13-14. Aug.

• **Summary:** "In 1974 the Ontario Soya-bean Growers' Marketing Board launched a program directed to the human consumption market... In 1974 the Ontario soybean export market represented a single shipment of white hilum soybeans to Japan for processing into tofu, miso and natto. Today tofu and miso are becoming popular in Ontario.

"Since 1975 the Ontario Soy-Bean Board has experienced remarkable success in moving soybeans into the human consumption market and the diets of Canadians. Two cookbooks have been printed by the Board and distribution has exceeded 70,000. Tofu shops have emerged in Ontario, to the extent that franchising is in the offing. Toronto has restaurants serving soybean meals... Today, the Ontario Soya-Bean Growers' Marketing Board actively promotes whole soybeans in one pound bags in various supermarkets." Address: Ontario Soya-bean Growers' Marketing Board, Chatham, ONT, Canada.

2505. Sattilaro, Anthony; Monte, Tom. 1982. Physician, heal thyself: A doctor's remarkable recovery from cancer and the diet he's convinced was responsible. *Life*. Aug. p. 62, 64, 68, 70. [1 ref]

• **Summary:** "This article was excerpted from *Recalled by Life: The Story of a Recovery from Cancer*, (c) 1982 by

Anthony J. Sattilaro with Tom Monte, due from Houghton Mifflin in September."

Four years ago, Dr. Sattilaro, President of the Methodist Hospital in Philadelphia, was dying of cancer. Today, after changing his lifestyle [primarily by adopting a macrobiotic diet, including brown rice, miso soup, and sea vegetables,], prescribed by Deny Waxman and Michio Kushi, he is totally free of this disease. Several photos show Dr. Sattilaro—and two x-rays of his upper body. Address: 1. M.D., Philadelphia.

2506. Martin, Debra. 1982. 1000 years old and very new [Shin-Mei-Do Miso]. *Comox District Free Press (Canada)*. Sept. 17. Friday.

• **Summary:** Six years ago, Lulu and her husband, Yoshi Yoshihara moved to Denman Island from Vancouver, where Yoshi worked as a projectionist for Pacific Cinematheque. He continued to commute from the Island to work, seeing his family only once a week—an arrangement that was not satisfactory. So they both decided to figure out a way to make a living on the island.

An idea came from a cookbook [The Book of Miso] she purchased in Seattle at a Japanese supermarket. They already knew about miso, so they tried making some small experimental batches at home. But they soon decided the only way to really learn the process would be from a Japanese master.

"Lulu took their four-year-old son and went off to Japan for eight months, staying with Yoshi's mother, and then with a family that operated a large miso factory in Iida City, located in a mountainous part of Japan with a climate similar to Denman Island's.

"She was fortunate to be taken under the wings of a miso master who had worked at the factory for 40 years and was in charge of the hand-made miso division there."

"This hands-on experience gave her an idea of what the koji should look like, taste like, and smell like, knowledge hard to gain from books.

Lulu and Yoshi started making miso in earnest from 1979. Photos show: (1) Yoshi standing by a stack of koji trays in sauna-like koji incubation room. (2) Lulu at her stove making miso soup. (3) Yoshi standing on a ladder by a wooden vat of miso, handing a pail down to Lulu. (4) Different Shin-Mei-Do miso products, packaged and bulk.

2507. Corn Country Whole Foods, Inc. 1982. Fall-winter 1982: New & improved (Catalog). 132 South Market St., Champaign, IL 61820. iv + 26 p. No index. 28 cm.

• **Summary:** The cover of this natural foods, vegetarian catalog is printed on orange paper with brown ink. Corn Country has increased the number of products it distributes, both those under its own Market Street brand and those made by many other companies. Corn Country trucks deliver throughout the Midwest: Freight is free with a

minimum order of \$400. Product categories: Refrigerated products. Bulk foods. Packaged foods. Snacks. Other.

Interesting products: (1) Tofu: Packaged (\$0.82/lb) or bulk (\$80/lb). (2) Market Street bread: Cinnamon raisin and Whole wheat both contain “whole soy flour.” (3) Stoneground flours: Soy flour-full fat (OG = Organically Grown) (\$0.42/lb). Corn Country uses old fashioned granite stone mills to keep the temperature low, which “preserves the nutritional value and flavor of the whole grain... Whole soy flour is milled from soybeans which have been heated first to destroy an enzyme which interferes with protein digestion. It is milder tasting compared to the defatted soy flour typically sold commercially.” (4) Market Street granolas: Of the 7 varieties, 6 contain small amounts of “soy flour.” (5) Beans, peas, and lentils: Soybeans OG (\$0.28/lb). Azuki beans. Chickpeas (Garbanzos). Lentils (green or red). Mung beans. (6) Market Street meals (vegetarian): Nutburger (incl. soy flour). Soyburger (soy flour is main ingredient). (7) Sea vegetables (9 types). (8) Westbrae miso (6 types). (9) Market Street nut butters: Peanut butter (“coarsely ground to retard oil separation”). Almond butter. Sesame tahini. (10) Natural oils: Sesame oil. Safflower oil. (11) Condiments. Nigari (bulk or 5 lb). Umeboshi plums. Shoyu (pints to 4.75 gal tin). Tamari (with dispenser to quarts). (12) Seeds: Alfalfa seeds. Sesame seeds whole brown. Sesame seeds hulled white. Sunflower seeds. Pepitas. (13) Market Street snack nuts: Shoyu almonds. Shoyu suns (sunflower), Shoyu cashew pieces. (14) Soy & corn snacks: Soy nuts salted. Soy nuts unsalted. (15) Market street mixes (unsulfured dried fruits, nuts and seeds): Sweet & shoyu mix (ingreds: Raisins, date pieces, dried bananas, shoyu almonds, shoyu cashews, shoyu sunflower seeds). Flatland mix (incl. unsalted “soynuts” {soybeans, vegetable oil}, fancy cashew pieces, and pumpkin seeds). (16) Health and beauty aids: Dr. Bronner soap (14 types). (17) Literature: 25 Talking Foods pads. (18) Traditional medicinal herb teas (27 types). (19) Celestial Seasonings teas (38 types); (20) Packaging supplies and kitchen help: Tofu kit (\$12.56). Address: Champaign, Illinois. Phone: 217-359-8843.

2508. Fantastic Foods. 1982. It's 6:15. You're home and hungry for something quick and wholesome (Ad). *Natural Foods Merchandiser*. Sept. p. 55.

• **Summary:** This full-page color ad is for Quick Pilaf: Brown Rice with Miso. The text begins: “And the last thing you want is the mess of cooking from scratch. This is the perfect time to open a package of Quick Pilaf from Fantastic Foods. Just pour it into boiling water, add butter, and simmer. In twenty minutes you'll be savoring the flavor of brown rice and whole grain pasta cooked in our special blend of seasonings.” A color photo shows the package between a glass quart of milk and a brown paper shopping bag, with some car keys and dark glasses to one side.

Address: 106 Galli Dr., Novato, California 94947. Phone: (415) 883-7718.

2509. Leviton, Richard. 1982. In a small bright building: Cottage soy industries on Vancouver Island. Colrain, Massachusetts. 15 p. Sept. Unpublished typescript.

• **Summary:** Discusses Sooke Soyfoods (Wayne Jolley), Thistledown Soyfoods, Shin Mei Do Miso, and Metta Tofu. Note: This article was commissioned by *East West Journal* but never paid for or published. For a good summary, see: *Soyfoods*. 1983. Winter. p. 36-37. “Cottage soy industries thrive on Vancouver Island.”

Concerning Shin Mei Do on Denman Island: Lulu Yoshihara recalls: In 1976 we picked up *The Book of Miso* at Uwjimaya department store in Seattle. It didn't look like it would be all that hard [to make miso] or take that much time or technology. Plus miso wasn't perishable and didn't need to be marketed right away. Ray [Lipovsky] was already here doing tofu and that gave us the idea we could do a little home soy business on the island and make a living. So I went to Japan in 1977 to find a miso teacher. We've been together since 1971. Address: Colrain, Massachusetts 01340.

2510. Miyako Oriental Foods, Inc. 1982. Re: Invitation to open house of new miso factory (Folded card). Baldwin Park, California. 2 panels. [Eng; Jap]

• **Summary:** One panel is in English, the facing panel in Japanese. “You are cordially invited to an open house of our new Miso factory... on Friday, September 24, 1982 5:00 p.m. to 7:00 p.m., 4287 Puente Avenue, Baldwin Park, California 91706. Phone: (213) 962-9633. Sadao Nakagaki, Chairman. Noritoshi Kanai, President. Teruo Shimizu, Factory Manager.” At the bottom of the English panel is a map showing the way to the new facility. Address: Baldwin Park, California.

2511. Photographs taken at South River Miso Co. 1982. Conway, Massachusetts.

• **Summary:** Four color photocopies of color photographs (each 3½ by 5 inches) were sent to Soyfoods Center on 1 Dec. 1999 by Anpetu Oihankesni, who took the photos while living and working at South River Miso Co. in 1982-83. They show: (1) Two strong Belgian draft horses pulling a cart carrying about ten recycled empty oak whiskey barrels—originally from Ohio Miso Co. The barrels are being moved to the shop from a barn across the river. Each barrel will later hold about 400 lb of special types of miso. From left to right: Christian (in front of the horses), Don Wheeler standing on the cart with his son on his shoulders, Thom Leonard (seated atop a barrel; he came for 3-4 weeks to teach miso making in Oct/Nov. 1982), and Anpetu. In the background is the front of the miso shop—post and beam construction with cedar shakes. The building has five main

parts. The koji is made downstairs in the center part; upstairs is a small living space or loft. The koji room protrudes out toward the front. To the right of the main part is a low-roofed entryway to the shop where the shipping is now done. To the right of the entryway is a 36-foot-long storage building, where the miso vats are stored. Each vat, made of recycled virgin cypress, holds about 4,500 lb of miso. To the left of the main building, under a roof that slopes downward, is more of the miso shop plus storage for smaller miso barrels. To the far left is a firewood storage shed. The Ellwells live in a trailer across the river—out of view (Fall 1982). (2) Anpetu seated at a wooden table, making *miso dama* (balls), and wrapping them in rice straw from rice grown in the field (Dec. 1982). (3) Christian and Anpetu ladling cooked soybeans from a cauldron into long rectangular stainless steel container; here they will cool, then be mixed with koji. Hannah Bond is in shadows to the left. “The cauldron was recycled from a dairy, part of the original equipment from Ohio Miso Co. Originally we left spirit holes in the floor and the koji room to allow *ki* to rise up from the earth... The upper part of the shop is where Hannah and I lived the first year of miso production. All of us used to enjoy steaming buns in the cauldron from the residual heat after cooking and saving the rich soy steaming water to use like lecithin.” (4) A view of the back of the miso shop with snow on the roofs, surrounded by snow. Two empty cypress vats lie on their sides to the left in the snow (Winter 1982-83). Address: Conway, Massachusetts.

2512. Quirk, Beatrice Taylor. 1982. Ah, so you want to try miso: A mountain couple is practicing the ancient art of making this Japanese food. *Carolina Lifestyle*. Sept. p. 23-25.

• **Summary:** Describes the work of John and Jan Belleme, and their American Miso Co. in Rutherford County, North Carolina. John Belleme is a 39-year-old Florida native who worked as a research biologist for the Veterans Administration in Miami, dealing mostly with cancer and chemotherapy. Thinking that there had to be a better way to deal with it, John started reading about natural foods, natural lifestyles, and traditional medicines in traditional cultures. In the mid-1970s the Bellemes adopted a macrobiotic diet, which is based on grains and includes only foods from the local environment. They eat no animal foods or dairy products, but they do eat fish.

Then in 1979 they left for Japan to study miso making with Takamichi Onozaki and his family, with whom they lived and worked for 8 months—in their 300-year-old home. They then returned to North Carolina, and spent almost a year building their miso factory, which began production in Sept. 1981. They made about 90,000 lb of light and dark miso in the first 9 months of operation.

A photo shows Jan Belleme and Japanese helpers preparing rice to make koji. Contains recipes for Light miso

dressings for salad, Miso-broiled fish, and miso soup. Address: Charlotte, North Carolina.

2513. Shurtleff, William; Aoyagi, Akiko. comps. 1982. Soyfoods labels, posters & other graphics. Lafayette, California: Soyfoods Center. 185 p. Sept. Illust. No index. 28 cm. 2nd ed. 1984. 6 vols. 685 p. total.

• **Summary:** Contents: 1. Tofu. 2. Other tofu types. 3. Secondary tofu products. 4. Tempeh. 5. Secondary tempeh products. 6. Soymilk. 7. Soymilk products. 8. Soy sauce, shoyu & tamari. 9. Miso. 10. Soynuts. 11. Other soyfoods. 12. Letterheads & business cards. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2514. Asunaro Eastern Studies Institute. 1982. Natural foods preparation with Sensei Noboru Muramoto (Poster). P.O. Box 2546, Escondido, CA 92025. 1 p.

• **Summary:** Noboru Muramoto, author of *Healing Ourselves*, will be presenting a series of 2 week classes on natural foods preparation at the Asunaro Institute in rural southern California. Students will participate in the preparation of miso, tamari, koji, amasake, mochi, tofu, and tekka. Address: Escondido, California.

2515. Elwell, Christian. 1982. Log of miso made at South River Miso Co. (Log—unpublished). Conway, Massachusetts. Unpublished log. 28 cm.

• **Summary:** The first entry on the first day reads: Variety: Two year barley—10/10/4.6/7.5. Starting date: 25 Oct. '82. Age: Two years. Used red rice koji starter. Lot #1-1. Container #B1, B2. Packed, covered 27 Oct. '82. Don & Thom [co-workers Don Wheeler and Thom Leonard].

Day & time: Day one, 11:30—Wash & soak 180 lb, barley (Living Farms—Fan next batch). 13:35—Fire lit, barley drained. 14:45—Steam through barley. 15:30—Barley cooked. 16:25—Koji 100°. Inoculate after cooling with 4 tsp. red rice starter. Put in crib.

Day two, 7:00—Koji 103°. Stir koji in crib. 9:00—Koji 94°. Koji room 85°. Koji put in trays. 9:50—Koji 101°. Trays staggered, koji heating up quickly... etc. Address: Founder and Owner, South River Miso Co., South River Farm, Conway, Massachusetts 01341.

2516. Leviton, Richard. 1982. The Perriers of soy foods: With large initial capital investments and national marketing plans, these companies are positioned for rapid growth. *In Business*. Sept/Oct. p. 53-56.

• **Summary:** Discusses three soyfoods companies: Legume, Soyfoods Unlimited, and American Miso Co. “While most companies in the industry operate on local or regional levels at best, these three progressive firms uphold nationwide market goals, have tied up large amounts of capital, and nurture vigorous plans to capture the American mainstream market. Legume, located in Caldwell, New Jersey, and run

by Gary and Chandri Barat, and Robert Shapiro, “distributes an impressive line of tastefully packaged, prepared convenience soyfoods in 40 states. Legume practically invented the product category, which includes tofu pizza, lasagna, ravioli, egg-plant Parmesan, tofu-vegetable pot pies, muffins, cakes, and tofu cheese-cakes. Currently the company, with weekly sales of \$8,000, contracts out all its food production, thereby allowing its lean staff of three to concentrate on sales and marketing. The Barats expect 1982 sales to top \$1 million with three employees, and \$3 million by 1983 with only five workers.” A good history of Legume begins: “Gary and Chandri Barat first caught wind of the swelling enthusiasm for soy products in July, 1979 at the Second Soycrafters Conference in Amherst, Massachusetts. They gathered over 500 pages of industry documentation and while uncertain of a specific product line, they were convinced that soyfoods, particularly prepared convenience offerings, were to be *the growth* area of the general food industry. Yet in their search for venture capital, holding only their prospectus as bait, they experienced difficulty... ‘Let’s taste the product,’ potential investors demanded.

“The Barats lacked a track record in the food industry,... But today, investment money firmly in hand, Gary reflects: ‘When raising money, make it a learning experience.’ Ask a lot of questions. Find out why people say no, listen carefully, study their answers, then make adjustments to address their concerns. Then ask again. Never take the rejections personally. Developing a business plan is an ongoing venture; it never stops and never ends. In the summer of 1980 the Barats took their fledgling concept to the streets of New York City, where they served their new line of prepared tofu products to a series of street fairs. “They served over 10,00 meals of tempeh chili, tofu chocolate mousse, and tofu cutlets, and studied faces carefully for reactions. Buoyed by the positive response,” they added tofu muffins, then vegetarian quiche to their line. The “R&D Taste Testing” at the street fairs eventually secured them \$50,000 in capital and \$100,00 in loans. They still managed to hang on to 51% ownership in their new company. They did careful market research using the influential SAMI (Standard Area Marketing Index) data, read reports, and interviewed industry leaders. They began to promote frozen tofu entrees but the profit margins were too slim. Their latest 1982 plan “calls for introducing six or eight boxed, frozen tofu entrees for national distribution.”

Valerie, John and Gary Robertson launched Soyfoods Unlimited in San Leandro, California in Feb. 1981. They focus on making and marketing selling. A big break came when New England Soy Dairy in Massachusetts bid to distribute 2,700 lb/month of their tempeh burgers. Once a week Valerie delivers the cases of frozen tempeh to the San Francisco airport.

John and Jan Belleme started the American Miso Co. in Aug. 1981 in Rutherfordton, North Carolina, after a

\$300,000 investment in plant and equipment. They hope to produce 500,000 lb/year of miso. They did an 8-month apprenticeship in Japan with a master misomaker.

Photos (by Richard Leviton) show: (1) Valerie Robertson of Soyfoods Unlimited with a tray of freshly-made tempeh. (2) John, Valerie, and Gary Robertson; the two men are wearing masks. (3) John Belleme of American Miso Co. empties hot, steaming soybeans. Address: Colrain, Massachusetts.

2517. Product Name: Mellow Barley Miso, Mellow Brown Rice Miso, Mellow Flint Corn Miso. The Mellow Brown Rice Miso was renamed in 1990 to Sweet Tasting Brown Rice Miso.

Manufacturer’s Name: South River Miso Co. Inc.

Manufacturer’s Address: South River Farm, Conway, MA 01341. Phone: (413) 369-4057.

Date of Introduction: 1982. October.

Ingredients: In 3/92: Deep well water, organically grown brown rice and soybeans*, and unrefined sea salt. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 9 lb, 18 lb, and 45 lb white plastic buckets.

How Stored: Refrigerated preferably (at home).

New Product–Documentation: Letters from Christian Elwell. 1981. Feb. 12 and Nov. 29. “Historical Sketch.”

Catalog and price list for spring 1983. 1983. Feb. Lists Mellow barley miso, Mellow brown rice miso, and Mellow flint corn miso. This hand-lettered catalog is (according to a letter from Christian Elwell of 28 May 1992) the company’s first catalog, which was sent out to a few hundred people in late 1982 and/or early 1983.

Ad in East West Journal. 1983. Nov. p. 87. “Wisely given miso gives its own wisdom.”

Soyfoods. 1983. Summer. p. 40-41. “Rural Miso Making.” Shurtleff & Aoyagi. 1983. Book of Miso. 2nd ed. p. 238. “Having bought out Ohio Miso Co. in Nov. 1980, Christian and Gaella Elwell started their own production in October 1982.”

Hill. 1986. Hampshire Gazette. March 14. “Making Miso.”

Product with Label sent by Christian Elwell. 1992. March 13. 1 lb beige plastic tub with black and brown text. “Unpasteurized. Please refrigerate. Vintage. Winter 1987.” There is a statement about traditional miso making signed by Christian and Gaella Elwell, a recipe for everyday miso soup, and an illustration of a silhouette of a mother handing a bowl of soup to her son seated across the table.

Talk with Christian Elwell. 1999. Nov. 3. South River Miso Company originally sold miso only in bulk, in 9 lb, 18 lb, and 45 lb white plastic tubs. Each tub had a plastic lid and heavy plastic bag liner. The label was on the side of each tub. The company sent some entire tubs to customers

via UPS, and advised that the miso be refrigerated at home—especially the sweet and mellow misos. The tubs were not refrigerated in the retail stores, but the same advice about refrigeration was given to consumers.

Letter from Anpetu Oihankesni. 1999. Nov. “The Flint corn miso was especially good. The oil from the maize seemed to temper the salt in a way neither rice or barley did, more mellow. We cooked the corn with pickling lime or hardwood ash (as hominy is prepared) before inoculating with rice koji culture. The growth was not as abundant appearing as with rice and because of the extra labor Christian eventually discontinued it. It was a uniquely ‘American’ miso. Longfellow Flint, a deep golden translucent maize, native to New England for centuries, from the original Algonquian peoples. We also used the corn koji to make a deeply satisfying amasake—all corn.”

2518. Belleme, John. 1982. Re: Developing a white miso. Letter to William Shurtleff at Soyfoods Center, Nov. 4. 1 p. Typed, without signature or letterhead.

• **Summary:** John would like to develop and sell white miso in a one-pound package, unrefrigerated, like Cold Mountain. John was a bit disappointed with the story about American Miso Co. that appeared recently in *East West Journal*. Richard Leviton had many good photos, but they used only one. Address: Route 3, Box 541, Rutherfordton, North Carolina. Phone: (704) 287-2940.

2519. Furth-Kuby, Wolfgang. 1982. Re: New developments with tofu and soyfoods in Europe. Letter to William Shurtleff at Soyfoods Center, Nov. 4. 2 p. Typed, with signature on letterhead. [Eng]

• **Summary:** “The term ‘Tofurei’ was invented by Gabriele Furth-Kuby. We thought it would be nice to have a similar name as ‘Backerei’ for bakery, ‘Metzgerei’ for butchery, etc. Consequently a miso shop would be called ‘Misorei’ or a soy foods shop ‘Sojarei’ or a Tempeh shop ‘Tempehrei.’

To date, the German edition of *The Book of Tofu* has sold 2,203 copies and *The Book of Miso* 3,040 copies. There are two new books about soyfoods out in German. One is *Kochen mit Tofu* (originally published by Autumn Press), the other *Soja Total* the new Farm cookbook. Sojaquelle has a full-page ad in each of them. Advertising our Tofu-kit we will get the addresses of people interested in soyfoods and then they will also buy our soybooks.

Wolfgang will see Herr Wolf in Vienna [Austria] “within the next two weeks and then will get copies of the two soybooks [that Shurtleff requested]. As soon as I have them I will send them to you.”

In December the German TV will broadcast a six-minute film about Tofu. Gabriele’s brother has done the film and we expect a breakthrough with it.”

Note: Sojaquelle became inactive in 1986.

Letter from Bernd Drosihn of Viana. 1995. April 19. Wolfgang Furth-Kuby’s new address is: Nelkenstrasse 11, 83125 Eggstätt, Germany. Phone: 08056 240. Fax: 836. “Wolfgang is now working as a consultant mostly for natural food stores and seems to be a little bit disappointed by the soyfoods business. He wants to get in contact with you again.” Address: President Sojaquelle and Ahorn Verlag, Weidgarten 2, D-8091 Soyen, West Germany. Phone: 08071-4220.

2520. Nelissen, Tomas. 1982. Re: Jakso and soyfoods in the Netherlands. Letter to William Shurtleff at Soyfoods Center, Nov. 9. 2 p. Typed, with signature on letterhead.

• **Summary:** “Maybe you still remember me from the time we were in Japan; once we met at Kichijoji station, next to Mitaka station. You tasted my genmai [brown rice] miso at a coffee-bar (next door).

“At this moment I am living in Holland with my wife Yvonne and two children. We set up a farm called Jakso. The whole idea is about becoming self-sufficient from the 30 hectares of land (including 6 hectares of fruit trees), a sourdough bakery, a soyfoods workshop, a futon workshop and educational activities.

“For the three workshops we “cut” the big barn into two halves and made a third floor. We built a very nice wood-burning bakery which produces all kinds of bread, cookies and savorys. The soyfoods workshop makes tempeh and tofu, as well as seitan. Year-round we produce an average of about 1,500 pieces of tempeh a week at 210 grams each, about 50 kg of tofu a day and a little less than 100 kg of seitan.

“We distribute our products all over Holland... in a 100 km circle around the farm. Our future products will be miso, shoyu, amasake and mushrooms. These are the products we studied in Japan for about 4 years...

“There are 12 people working on the farm (plus 7 children)... The meals are on a macrobiotic base.” Address: Director, Jakso, St. Natuurlijke Land- en Tuinbouw, Voorne 13, 6624 KL Heerewarden, Netherlands. Phone: 08877-2189.

2521. Aihara, Herman. 1982. History of work with macrobiotics and Chico-San (Interview). Conducted by William Shurtleff of Soyfoods Center, Nov. 29. 5 p. transcript. Address: Oroville, California.

2522. Greenwood, Rebecca. 1982. Smokey Mountain miso: Traditional and modern methods unite to create a fine domestic miso. *East West Journal*. Nov. p. 50-53.

• **Summary:** About John and Jan Belleme and the American Miso Co., located in the Smokey Mountains [sic, Great Smoky Mountains] in the small town of Rutherfordton, North Carolina. The company started making miso in

August 1981 and now makes 5,000 pounds a month. "John has a determined air about him. You get a sense that here is a man who, if he's going to do anything, is going to do it all the way." John's main interest is in making high-quality miso.

Almost all miso sold in the U.S. today is made by a fully automated process and pasteurized. The Bellemes spent seven strenuous months studying miso-making with Takamichi Onozaki in Japan. They now have three goals in making miso: (1) Sell unpasteurized miso—which should be refrigerated. (2) Produce miso using traditional methods, including wooden vats, handmade koji, and slow, natural fermentation—rather than the faster and more commonly used forced heat method. (3) Use the high quality ingredients, including certified organically grown soybeans and rice, unrefined sea salt, and deep well water. This miso will be distributed by Great Eastern Sun Trading Co. which is partially owned by the Bellemes' friend and fellow investor, Barry Evans, of Miami, Florida.

The American Miso Co. is located on 100 acres of rural land and consists of two buildings totalling some 3,400 square feet. The small building is used for storage and milling rice. The big one is where the miso is made and aged—for up to 18 months in huge, custom-made cypress vats which hold 8,000 pounds of miso each. When each vat is full, it is topped with 1,000 pounds of rocks which add pressure during the fermentation. Presently three types of miso are aging here: three short term (Sweet White Miso, Mellow Rice Miso, and Mellow Barley Miso) and one long term (Red Brown Rice Miso).

The secret of good miso lies in making good koji—by hand. John removes up to 90% of the bran from the rice for short-term miso, but only 10-30% for long-term miso. The company's pride is its koji room.

The Bellemes' dream is greater than just making miso. They have started constructing another home on their rural property to accommodate students in a living and learning environment. Each summer they plan to hold workshops which will include miso-making, gardening, natural foods cooking, philosophy, and meditation. A large photo shows John Belleme standing by the soybean cooling table and as the huge steamer basket overhead discharges a load of freshly cooked soybeans.

Note: The Great Smoky Mountains (often shortened to Great Smokies) is a range of the Appalachian Mountains extending along the North Carolina-Tennessee boundary. A part has been set aside as Great Smoky Mountains National Park. Address: Co-director, Rocky Mountain Inst. of Macrobiotics, Boulder, Colorado.

2523. JETRO (Japan External Trade Organization). 1982. *Beikoku no miso shijō* [The American miso market]. Los Angeles, California: Nihon Boeki Shinkokai. 32 p. Nov. [7 ref. Jap]

• **Summary:** Contains detailed statistics on the total U.S. market and on individual miso manufacturers in the contiguous 48 states and Hawaii. Of the miso consumed in the USA, about 63% is consumed by Asian Americans and 37% by Caucasian Americans. The age of miso consumers: 20s 10%. 30s 32%. 40s 26%. Fifties 32%. Sixties 10%. Address: Nihon Boeki Shinkokai, Los Angeles, California.

2524. Kushi, Michio. 1982. *Cancer and heart disease: The macrobiotic approach to degenerative disorders*. Tokyo: Japan Publications, Inc. 224 p. Nov. Illust. Index. 26 cm. [50* ref]

• **Summary:** Contents: Foreword, by Michio Kushi. Foreword by Edward Esko. 1. The macrobiotic approach, by Michio Kushi. 2. Cancer and diet. 3. Diet and heart disease. 4. Macrobiotics, preventive medicine, and society. 5. Case histories. Appendixes: Food policy recommendations for the United States, by Michio Kushi. East West Foundation—Diet and health related activities, 1972-1982. Bibliography.

Many of the subchapters in this book are written by physicians. For example, William P. Castelli, M.D., contributed a 5-page original article titled "Lessons of the Framingham Heart Study." There are also articles by Robert S. Mendelsohn, M.D., Keith Block, M.D., and Christiane Northrup, M.D. Miso, tempeh, natto, tofu, and soy sauce are all discussed as foods that can be used to help in the prevention and cure of these two major diseases. Address: Brookline, Massachusetts.

2525. Leviton, Richard. 1982. Soyfoods come of age. *Vegetarian Times*. Nov. p. 28-29, 31. [1 ref]

• **Summary:** "Soybean based foods made with simple technology are gradually replacing meat in America diets. Originally developed in the Far East, foods like miso, tofu, and tempeh are becoming Westernized as manufacturers add convenient packaging, modern marketing and pizzazz to their soyfoods. Discusses: New tofu marketing techniques, the impact of *The Book of Tofu* by Shurtleff & Aoyagi and other tofu cookbooks, secondary soy products (prepared, convenient soyfoods), Legume, Quong Hop, Garden of Eatin', Edward & Sons, the soy deli, interest in tofu by large American food companies (Del Monte and Kraft).

Includes "A Guide to Soyfoods" the briefly defines miso, soy sauce, texturized soy protein, tofu, and tempeh. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2526. *Manna Bulletin (Amsterdam, Netherlands)*. 1982. Fermentatieprodukten essentiële aanvulling op plantaardige dieet [Fermented products, an essential supplement to a vegetarian diet]. 4(3):9-11. Autumn. [Dut]

• **Summary:** Mentions tamari soy sauce (*Tamari-sojasaus*, fermented for 2 years), miso (*Miso-sojapasta*, fermented for 2 years), tempeh, and natto.

2527. Oak Feed. 1982. Catalog and price list. Coconut Grove, Florida. 1 p. Back to back. 36 cm.

• **Summary:** At top of page 1: “Your Japanese connection: Importers and wholesale distributors of macrobiotic foods. Lowest wholesale prices available. Abbreviations: E = Erewhon. M = Mitoku. W = Westbrae. * = New product. Contents: Miso and tamari. Sea vegetables. Tea. Noodles. Condiments. Vinegars, pickles & mirin. Beans. Crackers. Miscellaneous foods. Kitchen utensils. Body care products. Medicinal products.

Miso and tamari: Onozaki miso (11 lb or 44 lb). Tamari-filled dispenser (W). Organic shoyu (Lima Ohsawa). Authentic tamari (4.75 gal. or dispenser). Hatcho miso (M). Soybean mame miso (M). Mugi (barley) miso (unpasteurized). Mugi miso (W). Genmai (brown rice) miso (W). Genmai (brown rice) miso (unpasteurized, 44 lb). Organic brown rice miso (unpasteurized, 22 lb). Kome (white rice) miso (W). Instant miso soup (light or red, M). Soba (buckwheat) miso (M). Natto miso (22 lb or 2.2 lb).

Condiments: Goma muso. Goma muso furikake (M). Tekka. Jinenjo tekka (M). Seitan condiment. Umeboshi. Roasted sesame oil. Black sesame salt. Black tahini.

Also: Barley miso pickles. Aduki beans [azuki]. Black soybeans. Kuzu. Address: 3030 Grand Ave., Coconut Grove, Florida 31333. Phone: (305) 448-7595.

2528. Cauwenberghe, Marc van. 1982. Re: George Ohsawa’s early work with soyfoods from 1956, especially miso and soy sauce. Letter to William Shurtleff at Soyfoods Center, Dec. 2. 5 p. [12 ref]

• **Summary:** The earliest document seen, written by Ohsawa, that mentions miso is the *Guide Pratique de la Medicine Macrobiotique d’Extreme-Orient*, which appeared in 1956. He arranged for miso and soy sauce to be imported to Europe from Japan and he organized the production of miso and soy sauce in France and Belgium in the Lima Foods factory by putting two of his Japanese students, Clim Yoshimi and “Jim” Takanami, to work there. Both are still living in Belgium. Clim’s address: c/o Kusa, Sportstraat, 319, 9000 Gent, Belgium. The home-made tofu he sells at his store is known as the best.

Klim wrote a book in Japanese on macrobiotics titled *Shin Shokuryo-ho*, which he translated into English as *Macrobiotics—The biological and physiological foundation of Zen*. It contains recipes using miso, tamari, soy sauce, and tofu. “In 1972 I attended cooking classes by Aveline Kushi where she was teaching tofu making and tofu recipes. In 1974 Michio Kushi gave a month long seminar on natural agriculture and food processing. This included the preparation of tofu and miso. The seminar was published in the series ‘Michio Kushi Seminar Reports.’” Address: East West Foundation, 62 Buckminster Rd., Brookline, Massachusetts 02146. Phone: 617-734-3853.

2529. Aihara, Cornelia. 1982. Traditional barley miso and koji. *GOMF News (Oroville, California)*. Dec. p. 3.

• **Summary:** Describes how to make each on a home scale yielding about 100 pounds. Address: GOMF, 902 14th St., Oroville, California 95965.

2530. **Product Name:** Natto Miso (Aged & Fermented Soybeans with Kombu & Ginger).

Manufacturer’s Name: Eden Foods, Inc. (Importer from Muso). Made in Japan.

Manufacturer’s Address: Clinton, MI 49236.

Date of Introduction: 1982. December.

Ingredients: Barley miso—soybeans, barley, water, sea salt, and *Aspergillus oryzae* (Koji)—barley malt, kombu (edible seaweed), ginger.

Wt/Vol., Packaging, Price: 22 lb (10 kg) plastic tub. Retail for about \$80 (1/92, Boulder, Colorado).

How Stored: Shelf stable.

New Product—Documentation: Richard Leviton. 1984. *East West Journal*. April. p. 20. “The organic Garden of Eden.” In 1982 Eden imported 25 container loads (each weighing 35,000 lb) of Japanese natural foods, including natto miso and buckwheat miso.

Eden Foods catalog. 1987. Nov. Includes: Natto miso “Kinzanji.”

Talk with Scott Stoltz of Nederland, Colorado. 1992. Jan. 6. This product has been available from Eden for at least 6 years. The price in stores is typically about \$6/lb. He reads off the ingredients and container type.

Label sent by Scott Stoltz. 1991. 8 by 6 inches. Self adhesive. Black, red, and green on white. Multi-colored Eden crane logo and green sprouts logo. “A condiment with a sweet, spicy flavor. Use on grains, noodles, mochi, beans, vegetables, and as a spread or dip.”

2531. **Product Name:** Eden Hacho Miso, and Soba Miso.

Manufacturer’s Name: Eden Foods, Inc. (Importer). Made in Japan.

Manufacturer’s Address: Clinton, MI 49236.

Date of Introduction: 1982. December.

New Product—Documentation: AD in *Vegetarian Times*. 1982. Dec. p. 24.

2532. Eden Foods, Inc. 1982. George Ohsawa first introduced “tamari” to North America. The product he gave us was a traditionally brewed SHOYU... (Ad). *East West Journal*. Dec. p. 11. Also in *Vegetarian Times*, Jan. 1983, p. 36.

• **Summary:** “... made of soybeans, wheat, water & sea salt, fermented for many months and pressed.

“He called it Tamari because he thought that Shoyu was too difficult a word for Westerners to say and because it

would differentiate Shoyu from commercial, chemical soy sauces.

“In Japan, Tamari is the by-product of making soybean miso, from soybeans, sea salt, and water. A very small amount of this is made compared to the amount of Shoyu brewed. In Japan, Tamari is most commonly used in food processing while Shoyu is used in cooking and on the table. Both are excellent foods. The original ‘Eden Tamari-Shoyu’ is macrobiotic soy sauce. This is the product Eden has marketed as Tamari since 1967, because George Ohsawa called it ‘Tamari.’

“Recently, real Tamari (Wheat Free) has been imported into the U.S.A. Mr. Ohsawa did not anticipate this. Now there are two products on the market being called Tamari. Shoyu & Tamari”

Note: This is an early macrobiotic effort to distinguish between tamari and shoyu. “Eden offers: Tamari Natural (Shoyu) Soy Sauce and Tamari Wheat Free.” Address: Clinton, Michigan 49236.

2533. Eden Foods, Inc.; Muso Shokuhin. 1982. What was once a flight of fancy... (Ad). *Vegetarian Times*. Dec. p. 24.
 • **Summary:** This full-page color ad shows the colorful Muso crane logo flying at the top. Across the bottom in bold letters is written “Eden.” The page is filled with boxes of macrobiotic natural food products imported by Eden from Muso in Japan. These include: Bulk miso, bulk kuzu, ramen, bulk sea vegetables, bancha tea, natural soy sauce (tamari), umeboshi, soba miso, Hacho miso, and vegetable brush. In the background is a landscape of terraced rice paddies. Address: [Clinton, Michigan].

2534. Bo, Thi-an. 1982. Hishio to shōyu no engen to sono seisan gijutsu ni tsuite. I. [On the origins of chiang and shoyu, and their production technology. I.]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 77(6):365-71. [9 ref. Jap; eng]

• **Summary:** This is one of the most interesting and carefully researched articles seen up to this time on this subject. The author (Ho Keian in Japanese), is a Chinese graduate of Iwate University in Japan. He sent this article to the university alumni association on the university’s 80th anniversary. Shoyu has become a world-class seasoning. Even in Moscow they have built plants to produce soy sauce and chiang (miso).

The earliest chiang was made with meat, fish, and shellfish; later, as agriculture advanced, beans and grains were used. The two main types of chiang are (I) those made using flesh as a main ingredient and (II) those made solely from plants. The flesh chiangs can be further subdivided: IA. Those made from animal and bird flesh. IA1. Made without bones (mentioned in the Shih Ching [Classic of Food], the Chou Li [Rituals of the Chou Dynasty, 3rd century B.C.], the Li Chi [Book of Rites, 2nd to 3rd century

B.C.], and the I Li); IA2., Made with a large amount of liquid (mentioned in the Chou Li and Li Chi); IA3. Made with flesh and bones (mentioned in the Chou Li, I Li, and Ch’i-min Yao-shu [Essential techniques for the peasantry of Ch’i, written by Chia Ssu-hsieh in A.D. 535]); IB. Made with fish or shellfish, including IB1. Fish chiang (mentioned in the Chou Li, Ch’i-min Yao-shu), and IB2. Fish intestine chiang (mentioned in the Ch’i-min Yao-shu). The non-flesh or vegetable chiangs (II) can be divided into: IIA. Those made with beans including IIA1. Chiang (mentioned in the Chou Li (3rd century B.C.), Lun Yu [Analects of Confucius, after 479 B.C.], Shih Chi [The Historical Record by Ssu-ma Ch’ien, ca. 90 B.C.], and Chi Chiu P’ien [48 to 33 B.C.]). IIA2. Bean (Soybean) chiang (tou-chiang, mentioned in the Ch’i-min Yao-shu). IIA3. Small (Red/Azuki) bean chiang (mentioned in the Nung Sang I Shih Chi Yao [+1314]). IIB. Chiang made from other vegetable materials including: IIB1. Wheat chiang (mentioned in the Shih Ching); IIB2. Wheat flour chiang (mentioned in the Pen-ts’ao Kang-mu [Compendium of Materia Medica, by Li Shih-chen, A.D. 1578-97] and the Chü Chia Pi Yung Shih Lei Ch’uan Chi [+1301]); IIB3. Coconut chiang (Mentioned in the Ch’i-min Yao-shu); IIB4. Barley chiang (mentioned in the Pen-ts’ao Kang-mu); and IIB5. Mustard chiang (mentioned in the Li Chi and Chih Ching).

It is interesting to note that the earliest meat and fish chiang was made with koji, typically millet koji. Koji is also used today to make some of the fish sauce called Shottsuru in Akita prefecture in Japan. Shottsuru has a 3,000 year history.

The use of the terms “hai” (meat chiang) and “chiang” in the Chou Li imply that some chiang was made from ingredients other than meat. An illustration from the Han dynasty shows a hole in the bottom of a chiang pot for drawing off soy sauce. The *Ssu Min Yüeh Ling* by Ts’ui Shih from the Later Han (25-220 A.D.) uses the term “ch’ang chiang” to refer to refined/filtered soy sauce. The *Ch’i-min Yao-shu* also uses two terms for refined chiang that seem to be referring to types of soy sauce. Thus it seems relatively sure that chiang has a history of about 3,000 years from the Chou dynasty (1122-256 B.C.) and soy sauce has a history of over 2,000 years since the Ch’in (221-206 B.C.) or Han (206 B.C.–A.D. 220). In the literature of the T’ang dynasty it is not rare to use soy sauce for medicinal purposes.

Soy sauce came from chiang, which was made from soybeans and wheat flour or wheat; it is still widely produced today. But from shih (soy nuggets) came tamari and kuan-tou soy sauce (kuan-tou is a region in Fukien/Fujian in southeast China). Only soybeans were used to make these types of soy sauce. The first tou-shih (soy nuggets) was made from soybeans only, with *Aspergillus oryzae* mold. If salt was added, the product was called hsien tou-shih; if none was added, it was called tan tou-shih. Later

they started to use *Mucor* (as in Szechuan tou-shih) or *Rhizopus* species. Today most tou-shih is made with *Aspergillus*. This is the ancestor of tamari shoyu and kuan-tou soy sauce. Address: Iwate Daigaku Nôgaku-bu, Sogaku 80 shunen no gosukuji ni kaete; Present address, China.

2535. Bo, Thi-an. 1982. Hishio to shôyu no engen to sono seisan gijutsu ni tsuite. II. [On the origins of chiang and shoyu, and their production technology. II.]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 77(7):439-45. [9 ref. Jap; eng]
Address: Iwate Daigaku Nôgaku-bu, Sogaku 80 shunen no gosukuji ni kaete; Present address, China.

2536. Eden Foods, Inc. 1982. Catalog 1983. 701 Tecumseh Rd., Clinton, MI 49236. 70 p.
• **Summary:** "Founded in July 1967, Eden Foods began as a small retail outlet of macrobiotic foods in Ann Arbor, Michigan." Address: Clinton, Michigan.

2537. **Product Name:** Quick Pilaf: Brown Rice with Miso.
Manufacturer's Name: Fantastic Foods.
Manufacturer's Address: 106 Galli Dr., Novato, CA 94947. Phone: 415-883-7718.
Date of Introduction: 1982.
New Product-Documentation: Ad (full page, color) in Natural Foods Merchandiser. 1982. Sept. p. 55. "It's 6:15. You're home and hungry for something quick and wholesome." Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239; Spot in *Gourmet Today/Telefood*. 1985. Nov/Dec. p. 18. With photo of package. 7 oz.; Leaflet. 8½ by 11 inches. Color. "It's 6:15. You're home and hungry for something quick and wholesome."

2538. Far Pavilions. 1982. Menu. 116 N. Oak Street (Box 69), Telluride, CO 81435.
• **Summary:** The front panel of this 8-panel menu (Green on tan paper) states: "International vegetarian cuisine. Welcome hospitality. Located below the opera house." The menu (which gives no prices) begins: "Our recipes are traditional as well as our own creations, all using pure and natural foods." Gives a definition of tofu and how it is made, then notes: "We make tofu in this traditional way regularly at Far Pavilions. In our kitchens, tofu is prepared in a wide variety of ways to show how this new high-protein, non-dairy food can be included in your menu. We also make regular use of the nutritious by-products of tofu-making: the soymilk and the soy fiber (okara)."

Soy-related menu items include: Soup of the day. Salad (dressings include "tamari sauce"): Mixed vegetable and sprouts with guacamole, full (or half) plate salad with tofu and guacamole. Salad specialties: Tofu and vegetable, okara salad, hummus, tabouli. Daily specials from the wok: Stir-fried tofu, rice, and vegetables, tofu and vegetables, stir-

fried okara and vegetables. Stuffed pitas: Grilled tofu and vegetables, guacamole and tofu, falafels. Burgers: Soy burger, tofu burger, okara burger. Burritos: Spicy tofu and rice filling with guacamole. Extras: Fresh tofu, grilled tofu. Smoothies: Carob shake (with banana and sesame). Carob-honey soymilk. Nutritional yeast-20 cents extra. Other refreshments: Hot miso broth (cup). Soy milk. Desserts: Ask us! "For reservations, catering, or take out, call 728-4441." Address: Telluride, Colorado. Phone: 728-4441.

2539. Gilman Street Gourmet: Natural Foods & Delicatessen. 1982. Menu. Berkeley, California. 1 p.
• **Summary:** In the Deli Menu, soy related items include: Tofu miso ginger. Tofu burgers. Tofu "meat" balls. There is also a bakery menu. Hours: Monday-Friday 10-7. Sat. 10-6. Closed Sundays. Address: 1334 Gilman St., Berkeley, California 94706. Phone: 415-524-0505.

2540. **Product Name:** Vegetarian Baked Beans with Miso.
Manufacturer's Name: Health Valley Natural Foods.
Manufacturer's Address: 700 Union St., Montebello, CA 90640.
Date of Introduction: 1982.
New Product-Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239.

2541. **Product Name:** Corn Chips with Miso.
Manufacturer's Name: Health Valley Natural Foods.
Manufacturer's Address: 700 Union St., Montebello, CA 90640.
Date of Introduction: 1982.
New Product-Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 239.

2542. **Product Name:** Miso [One Year Rice, Four Season Barley, Two Year Corn Miso, or Moromi].
Manufacturer's Name: Imagine Foods, Inc.
Manufacturer's Address: Moniteau Farm, R.R. 1, Box 11, Jamestown, MO 65046. Phone: 816-849-2583.
Date of Introduction: 1982.
New Product-Documentation: Form filled out by David Carlson, ca. 1982. They opened on 6 Jan. 1982 and now produce tempeh, tofu, and miso. Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 238. Dale Deraps of Imagine Foods/Moniteau Farm began making miso in 1982; Leaflet. 1984, undated. Talk with Robert Nissenbaum. 1988. Jan. 5. Dale Deraps made miso at home before Imagine Foods was founded. After 1982, Imagine then distributed some of his products, both packaged and in bulk.

2543. **Product Name:** [Kikkoman Instant Shiro Miso Soup (Soybean Paste Soup, White)].
Foreign Name: Shiro Misoshiru.
Manufacturer's Name: Kikkoman Corporation.

Manufacturer's Address: Noda 278, Chiba-ken, Japan.

Date of Introduction: 1982.

Ingredients: Powdered miso, dried seaweed, wheat gluten, bonito powder, monosodium glutamate, dried green onions, disodium inosinate, disodium guanylate.

Wt/Vol., Packaging, Price: 1.4 oz (40 gm). Foil packed containing 4 individual packets. Each makes 2/3 cup.

How Stored: Shelf stable.

New Product–Documentation: Label. 1982. 5.5 by 7 inches. Plastic packet. Orange, red, brown and green on white. Full color picture of wooden bowl of soup on tray. Foil packets inside are 2.75 by 4 inches. Red, brown and black on white. Bowl of soup on front, instructions on back. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Distributed by Kikkoman Corporation, Noda 278, Japan." Text on label in both English and Japanese.

2544. **Product Name:** [Kikkoman Instant Aka Miso Soup (Soybean Paste Soup, Red)].

Foreign Name: Aka Misoshiru.

Manufacturer's Name: Kikkoman Corporation.

Manufacturer's Address: Noda 278, Chiba-ken, Japan.

Date of Introduction: 1982.

Ingredients: Powdered miso, dried seaweed, wheat gluten, bonito powder, monosodium glutamate, dried green onions, disodium inosinate, disodium guanylate.

Wt/Vol., Packaging, Price: 1.4 oz (40 gm). Foil packet containing 4 individual foil packets. Each makes 2/3 cup.

How Stored: Shelf stable.

New Product–Documentation: Label. 1983. 5.5 by 7 inches. Plastic packet. Red, purple, black and brown on white. Full color picture of wooden bowl of soup on tray. Individual packets are 2.75 by 4 inch foil. Red, brown and black on white. Picture of bowl of soup on front, instructions on back. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Distributed by Kikkoman Corporation, Noda 278, Japan." Text on label in both English and Japanese.

2545. Maki, Toshio. 1982. Shokuhin oyobi kankyô-chû no N-nitroso kagô-butsumo-ganryô to bakuro-ryô ni tsuite [N-nitroso compounds in foods and the environment—the occurrence and exposures]. *Eisei Kagaku (J. of Hygienic Chemistry)* 28(5):249-58. [Jap]*

• **Summary:** Volatile and non-volatile N-nitrosamines were sampled in foods. The highest volatiles were in broiled dried fish, chewing tobacco, niboshi (dried small sardines), and smoked and flavored fish.

0.1 to 0.8 micrograms per kilogram (parts per billion, ppb) of N-nitroso-dimethylamine (NDMA) was detected in miso and shoyu. Similar amounts were also found in other Japanese foods. The author thinks that there is no danger in consuming these foods because of the very small amounts of NDMA, mostly less than 1 ppb.

2546. **Product Name:** Cold Mountain Freeze Dried Miso, and Spray Dried Miso [Red, or Light Yellow].

Manufacturer's Name: Miyako Oriental Foods, Inc.

Manufacturer's Address: 4287 Puente Ave., Baldwin Park, CA 91706.

Date of Introduction: 1982.

New Product–Documentation: Food Technology. 1986. Jan. Talk with Mr. Teruo Shimizu of Miyako Oriental Foods. 1995. May 3. These two products were first introduced at the IFT show in 1982. For many years Miyako imported them from Yamajirushi, its parent company in Japan. But Yamajirushi no longer makes the products and the high cost of Japanese imports resulting from the steady decrease in the value of the U.S. dollar has led Miyako to develop its own freeze-dried product in California. They are working with Mercer Processing Inc. in Palo Alto, which does the freeze drying. They also plan to develop a spray-dried miso (which is lower quality and less expensive, and contains maltodextrins). For years they sold both freeze dried and spray-dried miso to Fantastic Foods for use in their products. But Fantastic now buys these products from Japan—even though the price is very high (over \$4/lb) and increasing. Fantastic would like to buy from Miyako again.

2547. **Product Name:** The New Deli Brown Rice & Tofu (Sandwich in a Chapati).

Manufacturer's Name: New Deli (The).

Manufacturer's Address: Del Monte Plaza, 624A San Pablo Ave., Pinole, California. Phone: 415-724-5335.

Date of Introduction: 1982.

Ingredients: Brown rice, tofu, sprouts, carrot & miso, on whole wheat tortilla.

How Stored: Unrefrigerated and perishable.

New Product–Documentation: Talk with Paul Duchesne. 1989. July 31. They made this product from about 1982-85. Label sent by Paul Duchesne. 1989. Aug. 11. 3 by 2.25 inches. Black on gray-green. "No added fats or oils."

2548. Shin-Mei-Do Miso Company. 1982. What is miso (Leaflet). Denman Island, British Columbia, Canada. 2 p. Front and back. 28 cm.

• **Summary:** Side 1 is an introduction to miso. Side 2 is recipes, plus a plug for *The Book of Miso*, by Shurtleff & Aoyagi. Address: Denman Island, BC, Canada, V0R 1T0. Phone: 335-0253.

2549. **Product Name:** Black Barley Miso (made with black soybeans). Later renamed Black Soy Barley Miso.

Manufacturer's Name: South River Miso Co. Inc.

Manufacturer's Address: South River Farm, Conway, MA 01341. Phone: (413) 369-4057.

Date of Introduction: 1982.

Ingredients: Incl. Black soybeans, barley.

New Product–Documentation: Ad in East West Journal. 1983. Nov. p. 88. “South River Miso. Wisely given miso gives its own wisdom.” Mentions Black Barley (made with black soybeans).

Brochure from South River Miso Co. 1991. Sept. “Varieties available this year.” “Black Soy Barley” was introduced in 1982. “Black soybeans are known for their deep, rich sweetness and, in Oriental medicine, for their healing properties.”

2550. Tofu Shop (The). 1982. Take-out deli foods–Naturally (Menu). 768 18th St., Arcata, CA 95521.

• **Summary:** “In our coolers and ready to go. Ready to eat or take home to reheat.” Tofu burgers. Tofu-spinach pies. Vegetable pastries (arabian rice, hijiki, burritos). Avocado sandwiches (On 9-grain bread). Vegetable sushi rolls (brown rice, tofu, carrot, green onion, flavored with miso). Tofu-tahini salad. Tofu-herb dip (for chips, raw vegies or as salad dressing). Tofu cream pie (with real maple syrup and fresh fruit). Tofu pumpkin pie (on whole wheat crust with walnuts). Carob-soy pudding (creamy, topped with coconut & nuts). Plus more! The logo is a circular dragon by a circle. “Mon-Sat 9-6. Makers of fine tofu and other soyfoods.” Address: Arcata, California. Phone: 822-7409.

2551. Abiose, Sumbo H.; Allan, M.C.; Wood, B.J.B. 1982. Microbiology and biochemistry of miso (soy paste) fermentation. *Advances in Applied Microbiology* 28:239-65. [135 ref]

• **Summary:** Contents: Introduction. Fermented soy products. Fermented rice products. History of miso production. Types of miso. Raw materials for miso production: Soybeans, rice, barley, salt. Ratio of raw materials. Treatment of raw materials. Koji. Moromi. Chemical composition of miso. Future developments of miso production.

The first author, a woman, acknowledges the generous support given to her by the Government of Nigeria. Address: Dep. of Applied Microbiology, Univ. of Strathclyde, Glasgow, Scotland.

2552. Adachi, Iwao. 1982. *Nihon shokumotsu bunka no kigen* [Origins of Japanese food culture]. Tokyo: Jiyu Kokuminsha. 470 p. See p. 69-70, 113. [Jap; eng+]

• **Summary:** Kinako (Yayoi period): Also called “mametsuki” in Japanese, kinako is written with characters that mean “yellow soy flour.” In the *Wamyosho*, it is called “Daizu-iri” or “Mametsuki.” From these expressions we can learn that since ancient times, people have pounded soybeans in a mortar (*usu*). Stone mortars came to Japan during the Nara period (A.D. 710-784) and finally became popular among the people in about the middle of the Edo/Tokugawa period. Kinako was brought to Japan from China through Korea. Kinako is probably mentioned in the *Engi*

Shiki. At a certain festival the people served at the altar 5 measures each of magarimochiki and mametsuki, and 10 measures of daizumochiki. These may have been the early names for kinako-mochi and/or azuki mochi.

Tamari: The original form of shoyu was tamari. The by-product of tamari was miso. And the original form of miso was *kuki* [soy nuggets], which was a seasoning developed in China. More on the history of *kuki* is given under “miso.” The government office (*yakusho*) for miso was built at the imperial court (*kyutei*) in A.D. 701 (Taiho 1). Therefore tamari started there at the same time. In the book *Yamato Honso* (Japanese materia medica) by Ekiken Kaibara, tamari (written with the characters for bean + oil) was mentioned. But on the sign board (*kanban*) of Yuasa Shoyu (which was started in the Tenshō period, 1573-1592), Tamari Shoyu was written (and “tamari” was written with the single character for “tamaru”). In the *Vocabulary of the language of Japan* (1603; Nippo Jisho) tamari was defined in Portuguese: “Tamari, a very delicious liquid taken from miso which can be used as a seasoning when cooking foods.” Furthermore, in the *Oshufushi* (1684) it is written that “The liquid from shoyu is tamari.” During the Middle Ages (*chūsei*) in Japan, shoyu was written with the characters for bean + oil, but during the Tenshō period (1573-1592) it came to be written with the single character for “tamaru.” Tamari and shoyu were first distinguished during the Kyōhō period (1716-1735). In the Chubu region of central Japan (Chūbu-chiho; Toyama, Ishikawa, Fukui, Yamanashi, Nagano, Gifu, Shizuoka, and Aichi prefectures) one special kind of miso, which is a by-product of shoyu, is called “tamari-miso.”

2553. Aidoo, K.E.; Hendry, R.; Wood, B.J.B. 1982. Solid substrate fermentations. *Advances in Applied Microbiology* 28:201-37. [144 ref]

• **Summary:** Contents: Introduction. History of solid-substrate fermentations: Pre-Pasteur period, post-Pasteur period and current developments. Design considerations and types of solid-state fermentors. Characteristics of solid-state fermentations: Physiological aspects of microbial growth on solid substrates. Advantages and disadvantages of solid-state fermentation. Future developments of solid-state fermentation systems. Conclusions. Address: Biotechnology Unit, Univ. of Strathclyde, Glasgow, Scotland.

2554. Aihara, Cornellia. 1982. *Macrobiotic kitchen: Key to good health*. Tokyo: Japan Publications, Inc. 140 p. Illust. Index. 26 cm. A revised edition of *The Chico-san Cookbook* (1972).

Address: Chico, California.

2555. Aihara, Cornellia. 1982. *The dō of cooking: Complete macrobiotic cooking for the seasons*. Oroville, California: GOMF Press (George Ohsawa Macrobiotic Foundation). 230 p. Illust. by Carl Campbell. Index. 28 cm.

• **Summary:** This is a compendium of four seasonal cookbooks, each with the title *The Dô of Cooking (Ryorido)*, first published individually in 1971. Contents: Preface. Introduction. Selecting good foods. The secret of cooking. Spring. Summer. Autumn. Winter. Glossary. Cutting styles. Topical index (within each major food category {grains, grains with vegetables, seaweeds, beans and tofu, etc. }, recipes are listed alphabetically). Recipe index (of all recipes).

Contains many recipes calling for: Miso, natto, tofu (regular, deep-fried, and frozen). Also: Amazake, azuki beans, kuzu, mochi, sea vegetables, seitan (wheat gluten), sesame seeds and gomashio.

Near the front of the book is a biographical sketch and photo of Cornelia Aihara. She was born in 1926 in Fukushima, Northern Japan. She learned macrobiotics from George Ohsawa when he came to her town (Aizuwakamatsu) for lectures; this changed her life. While in school, she began corresponding with Herman Aihara, who was living in New York. In 1955 he invited her to New York. Although they had never met, she trusted him and went to America with only ten dollars in her pocket. They were married soon after her arrival in New York. There they engaged in retail business. When Mr. and Mrs. Ohsawa came to the USA from Europe, Cornelia studied macrobiotic cooking by helping Mrs. Lima Ohsawa at the first macrobiotic summer camps on Long Island in 1960; in the Catskill Mountains in 1961; at the University of California at Chico in 1963; and at the Big Sur Camp in 1964. Since 1961 Cornelia has devoted her life to the teaching of macrobiotic cooking, childcare, home remedies, and philosophy. Since 1965 Cornelia and Herman Aihara have organized fourteen macrobiotic summer camps in California; her cooking has been the biggest attraction.

On the cover is a large color photo of freshly prepared food, including deep-fried tofu slices. Address: 902 14th St., Oroville, California 95965.

2556. American Soybean Assoc. 1982. Tofu and the American soybean. *Checkoff Successfile*. Japan #105. 2 p.

• **Summary:** Contents: Summary. The problem. ASA's program and execution. Results. "In 1958 Japan's tofu industry used only 955,000 bushels of U.S. soybeans. Government restrictions and the tofu industry's quality standards held back the growth of U.S. imports by the tofu industry." Meanwhile Japanese tofu makers were using nearly 8 million bushels of soybeans grown in Japan or imported from China.

Step 1. ASA arranged for two senior Japanese food scientists to spend several months at USDA's Northern Regional Research Lab in Peoria, Illinois. They conducted research on tofu and miso to determine which U.S. soybean varieties worked best. "At the same time, ASA, the Japan Tofu Association, and the Food Research Lab of the

Japanese Ministry of Agriculture repeated the tests using various varieties of U.S. soybeans.

"The result was the development of a soft tofu production method, which gave reduced loss of water-soluble proteins and higher yields of tofu [because the tofu contained more water]. "Most important to U.S. farmers it was discovered that U.S. soybeans were the most suitable to the new process."

Next a "series of technical seminars were held in which demonstrations were presented to illustrate the superior quality of U.S. soybeans and the new processing methods." Gil Griffis, ASA director for Asia, says, "We succeeded in destroying the myth that only Japanese and Chinese soybeans could serve the tofu market."

ASA's next goal was to increase tofu consumption in Japan. In cooperation with the Japan Tofu Association, ASA conducted a nationwide series of cooking classes from the back of a kitchen-equipped bus that traveled from city to city. New tofu recipes were developed to appeal to the young homemaker. Several of the cooking seminars were televised, thus expanding the audience. "In addition, attractive posters were created and displayed outside nearly 25,000 tofu shops in Japan.

"Results: After 22 years of promoting U.S. soybeans to the Japanese tofu industry, the U.S. has made great inroads into the market. Last year Japan's tofu industry used nearly 17 million bushels of soybeans. Nearly 16 million bushels of the total industry purchases [about 94%] came from the U.S.—the production of over half a million acres of U.S. soybeans."

A large graph shows "Consumption of whole soybeans in foods" from 1975 to 1980 [in Japan]. Tofu and others has risen from 525,000 tonnes (metric tons) to about 590,000 tonnes. Miso has remained unchanged at about 180,000 tonnes. Photos show: (1) ASA's Ms. Kojima with a Japanese man making tofu in a traditional shop. (2) An ASA cooking class attended by women. (3) A Kentucky Fried Chicken outlet in Japan. Address: St. Louis, Missouri 63141.

2557. Coyle, L. Patrick, Jr. 1982. The world encyclopedia of food. New York, NY: Facts on File, Inc. xv + 790 p. Illust. Index. 28 cm.

• **Summary:** Contains basic information (sometimes interesting, often superficial, with quite a few errors) about some 4,000 foods and beverages, including worldwide staples (potatoes, soybeans, apples), local specialties, delicacies, major brand-name products (Coca-Cola) and oddities (penguin eggs, grasshoppers). With 200 line drawings, 150 black-and-white photos, and 50 color plates.

See entries for soybean (incl. black soybeans, fermented tofu, miso, soybean flour, soybean milk, soybean oil, soy sauce, tempeh; tofu, "white soybeans"), and Worcestershire sauce (which "is said to contain more than 100 ingredients,

including soy sauce, vinegar, molasses, chili, anchovies, garlic, shallots, tamarinds, limes and many spices”).

Also has entries for: Almond, chufa, peanut, peanut butter, peanut oil, seaweed (incl. algae, dulse, laver, rock weed / sea wrack, agar-agar, carrageen, kelp), sesame (with illustration of leaves, flower, and pods). Address: Freelance writer, Oceanside, California.

2558. Ebine, Hideo. 1982. Fermented soybean foods in Japan. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. *Traditional Food Fermentation as Industrial Resources in ASCA Countries*. xvii + 259 p. See p. 41-52. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia.

• **Summary:** Production statistics for miso and natto from 1970-1979 were presented. Miso increased from 552,207 tonnes in 1970 to a peak of 590,137 tones in 1973, followed by a gradual decrease to 567,776 tons in 1979. Natto production increased from 100,000 tonnes in 1970 to 158,000 tonnes in 1979. Statistics on the production of soy nuggets (Tera Natto or Hama Natto) are not available, but are roughly estimated at 10,000 tons.

An outline is then given of the chemical composition of the different types of miso and natto as well as their methods of manufacturing. Of the many beneficial characteristics of miso, the following are worthy of note: it has strong antioxidative activity, a strong buffering activity, and a bactericidal like effect against pathogens.

“Natto is one of the typical and popular soybean foods in the Japanese diet. It is classified into 2 major types; one is called Hama Natto which resembles soybean miso in colour and flavour; the other is called itohiki natto. When referred to simply as natto, it generally means itohiki natto. Natto is a unique soybean food, fermented by *Bacillus natto*. The surface of fermented natto is covered with characteristic viscous and slimy substances consisting of *B. natto* cells and polymers of glutamic acid.” Address: Applied Microbiology Div., National Food Research Inst., Ministry of Agriculture, Forestry and Fisheries, Yatabe, Ibaraki-ken, Japan.

2559. Hagler, Louise. 1982. *Soja Total. Das vegetarische Kochbuch der Tennessee-Farm [Total soya. The vegetarian cookbook of the Tennessee-Farm]*. Hamburg, West Germany: Papyrus Verlag. 200 p. Translation by Elizabeth Leih of *The Farm Vegetarian Cookbook* (1978, English). Illust. 21 cm. [Ger]

• **Summary:** This interesting vegan cookbook book is loaded with creative recipes, illustrations (line drawings), and black-and-white photos. Contents: Beans. Soyameat (TVP). Italian dishes. Chili rellenos, nixatamal and masa. Nutritional yeast. Knishes. Soups. Uncle Bill’s recipes. Gluten. Tempeh. Miso. Soymilk. Ice Bean (Soymilk ice cream, p. 4, 96-98). Soy yogurt. Tofu. Pureed tofu. Yuba.

Soy coffee. Soynuts. Soya pulp (okara). Soy flour. Vegetables. Bread. Cereal grain recipes. Breakfast breads and pancakes. Desserts. Nutritional advice.

Note: This is the earliest German-language document seen (March 2007) that mentions soy ice cream, which it calls *Soja-Eiskrem*, *Eis-Bohnen*, or *Schokoladen-Bohnen-Eiskrem*. Address: Summertown, Tennessee.

2560. Henderson, Bruce R. 1982. *Oakland organic: A vegan primer*. Albany, New York: Caboose Press. 200 p. Illust. 23 cm. [24 ref]

• **Summary:** This is a book about veganism which contains a few vegan recipes near the back. It focuses on the San Francisco Bay Area and urban areas, and contains extensive information about soybeans and soyfoods, much of it inspired by *Yay Soybeans*, from The Farm in Summertown, Tennessee. As follows: Miso, and Soya-Mineral Bouillon (Dr. Bronner’s) (p. 19). Soy as an alternative protein source (p. 37-43). Soymilk (p. 53-56; Jethro Kloss). More soy (p. 57-61; soy pulp [okara] pudding, soysage, Garden of Eatin’ Soy Jerky (illustration of package), Brightsong Missing Egg Tofu Salad (illustration), soy yogurt (fermented), soy tofu—hard, baked, or fried). Sprouting (p. 67-70; incl. soybeans). Fermented foods (p. 71-74; incl. tempeh, raw tofu). Snacks & quick foods (p. 88-96; incl. Ice Bean—soy ice cream, Ice-C-Bean). Miso and soy sauce (p. 120-21). Soy-related recipes: Baked apples with miso (p. 185-86). Tofu cheesecake (p. 188-89). Soysage (p. 193). Soy ice bean (p. 195). Note: Bruce Henderson was born in 1946. Address: Oakland, California.

2561. Hirayama, Takeshi. 1982. Relationship of soybean paste soup [miso soup] intake to gastric cancer risk. *Nutrition and Cancer* 3(4):223-33. [15 ref. Eng]

• **Summary:** Consumption of miso soup was found to protect against stomach cancer, as long as the soup’s salt concentration was kept to a minimum. “Daily intake of soybean paste soup was found to significantly reduce standardized mortality rates for gastric cancer in an ongoing large-scale prospective study of 122,261 males and 142,857 females aged 40 and above in 29 Japanese health center districts, 1966-1978. The gastric cancer standardized mortality rates were 171.9, 210.2, 240.0, and 255.9 per 100,000 males, and 77.8, 85.3, 97.5, and 113.6 per 100,000 females in daily, occasional, rare, and noningesters, respectively... The risk-reducing effect has also been observed in case-control studies in the past, for both males and females and in urban and rural areas. This beneficial effect could arise from selected compounds such as protease inhibitors and/or other nutritious substances included in the soybean, but it is also possible that it merely reflects the effect of some frequent accompaniment to soybean paste soup, such as green-yellow vegetables...”

“According to the national nutritional survey conducted by the Ministry of Health and Welfare in 1979 for 6,000 randomly selected households (21,000 persons), 40.5% of Japanese ingest soybean paste soup daily at breakfast. Another 6.7% ingest it at their evening meal.”

In both men and women smokers, frequent consumption of miso soup was found to protect against stomach cancer (Table 3).

“Recently, an animal experiment bearing on the present issue was conducted in Korea [Kim, J.P.: Personal Communication, Oct. 1981]. Rats were fed various gastric carcinogens, and incidence of gastric cancer was reported to be significantly lower in those animals also fed soybean paste soup.” Address: Epidemiology Div., National Cancer Center Research Inst., Tsukiji 5-1-1, Chuo-ku, Tokyo, Japan 104.

2562. Ko Swan Dijen. 1982. Indigenous fermented foods. *Economic Microbiology* 7:15-38. A.H. Rose, ed. Fermented Foods. [67 ref]

• **Summary:** Contents: 1. Introduction. 2. Foods fermented by moulds: Roles of the moulds. 3. Foods fermented by bacteria: Fermented vegetable products, fermented fish products, fermented seeds (natto, thua-nao, dagé), fermented starch-rich raw materials (fermented maize products, fermented rice products, fermented cassava), fermented plant juice.

4. Foods fermented by a mixture of moulds and yeasts: Ragi, micro-organisms, fermented starch-rich raw materials.

5. Foods firstly fermented by moulds [as in making koji], followed by a fermentation with a mixture of bacteria and yeasts (the salt-tolerant yeasts are species of *Saccharomyces* and *Torulopsis*; the bacteria are species of *Pediococcus* and *Streptococcus*): Tane koji, soy sauce, other fermented soybean products (tauco {porridge or dry consistency}, miso, hamanatto {which is soft and has a high moisture content}, tou-shih {which has a much lower water content than hamanatto and is therefore not so soft}). These “fermented soybean products are also used as flavouring agents in cooking as well as table condiments or as a side dish”.

6. Specific aspects of fermented foods: Mould species, lactic-acid bacteria, yeasts, salt. 7. Acknowledgement. References.

Concerning soy sauce (p. 30-31): “Japanese *shoyu* is made from equal amounts of soybeans and wheat.” The “raw materials are inoculated with tane koji which contains spores of selected strains of *Aspergillus oryzae* and *A. soyae*. In less sophisticated soy sauce factories throughout South East Asia, mould species grow spontaneously on the soybeans by natural contamination from the air and from the bamboo trays on which soybeans of former batches were incubated (Bhumiratana et al., 1980). The moulds involved are species of *Aspergillus*, *Rhizopus*, or *Mucor*. Some

Indonesian *kecap* manufacturers inoculated the cooked soybeans with tempe [tempeh] inoculum which contains spores of *Rhizopus oligosporus*.”

Tables: (1) Conferences discussing aspects of indigenous fermented foods (1977-1981, chronological). (a) Symposium / Workshop on Indigenous Fermented Foods, Nov. 21-26, 1977, Bangkok, Thailand. (b) World Conference on Vegetable Food Proteins, Oct. 29–Nov. 3, 1978, Amsterdam, The Netherlands, (c) Symposium on Fermented Foods, Nov. 22, 1978, London, England. (d) International Symposium on Oriental Fermented Foods, Dec. 10-14, 1979, Taipei, Taiwan. (e) United Nations University Workshop on Research and Development Needs in the Field of Fermented Foods, Dec. 14-15, 1979, Bogor, Indonesia. (f) VIth International Fermentation Symposium, July 20-25, 1980, London, Canada. (g) Eighth Conference of Association for Science Cooperation in Asia (ASCA), Feb. 9-15, 1981, Medan, Indonesia.

(2) Origins of various fish sauces. (3) Origins of various fish pastes. (4) Names given in various countries to an inoculum used to manufacture food products. (5) Names given in various countries to fermented glutinous rice (*Oryza sativa glutinosa*). (6) Names given in various countries to rice wine. (7) Names given to soy sauce in different countries (*Chiang-yu* in China, *Kan jang* in Korea, *Kecap* in Indonesia, *Shoyu* in Japan). (8) Soybean foods produced by a two-stage fermentation (*Hamanatto and miso* in Japan, Soy sauce in the Orient, *Taoco* in Indonesia, *Tao-si* in the Philippines, and *Tou-shih* in China). Address: Dep. of Food Science, Agricultural Univ., Wageningen, Netherlands.

2563. Kushi, Micho; Kushi, Aveline. 1982. Macrobiotic dietary recommendations. East West Foundation, P.O. Box 850, Brookline Village, MA 02147. 48 p. 22 cm. [15 ref]

• **Summary:** Contents: Introduction. Standard dietary recommendations. Recommended daily proportions. Foods to reduce or avoid for better health. Way of life suggestions. Daily reflections. Suggestions for patients with cancer or other serious illnesses. Special dishes. Home remedies. Baby food suggestions. Kitchen utensils. Nutritional considerations. East West Foundation information. Glossary. Bibliography.

Compiled with the help of Edward Esko, Murray Snyder, Bill Spear and Bill Tara. Address: Brookline Village, Massachusetts. Phone: -.

2564. Lee, Cherl-Ho; Jul, Mogens. 1982. The effect of Korean soy sauce fermentation on the protein quality of soybean. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. Traditional Food Fermentation as Industrial Resources in ASCA Countries. xvii + 259 p. See p. 209-20. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [11 ref]

• **Summary:** Contents: Introduction. Changes in the composition of N-compounds during fermentation. Changes in the protein quality by the fermentation methods. Discussion.

Tables: (1) Per capita daily consumption of fermented foods in Korea in 1970 was as follows: Kimchi (all kinds) 43.7 gm, soybean sauce 23.3 gm, red pepper soybean sauce 13.9, soybean paste 10.4 gm, fermented marine foods 0.6 gm.

(2) Production of fermented soybean foods in Korea, 1971 (in 1,000 metric tons): Soybean sauce: industrial 107, home-made 116, total 223. Soybean paste: industrial 56, home-made 168, total 224. Red pepper soybean paste: industrial 23, home-made 89, total 112.

(3) Retention of the nutrients in soybean during the traditional meju making (%). (4) Chemical score and essential amino acid index (EAAI) of soybean and meju-brine mixtures ripened for 8 months.

(5) The lysine availability of soybean and meju-brine mixtures ripened for 8 months. (6) Effect of 20% protein supplementation with the fermented soybean products on the protein value of the rice diet in the rat feeding. (7) Comparison of protein conversion rates of soybean fermentation and animal production: Beef 5% (BV {biological value} 74). Milk 23% (BV 85). Egg 24% (BV 99). Home-made meju products 74% (BV 67*). Improved meju products 85% (BV 73*). Asterisk (*) = "Rice protein added with 20% of the product protein.

Figures: (1) Cartoon diagram of the process for making Korean soysauce and miso. (2) Flowsheet of improved method of making meju. (3) Graph of Changes in the content of soluble nitrogen, free amino nitrogen, and amino nitrogen in the total nitrogen of soybean during meju making. (4) Changes in the content (%) of methionine and cystine during cooking, 3-month meju fermentation, and ripening. (5) Changes in the concentration (%) of basic amino acids during cooking, 3-month meju fermentation, and ripening. (6) Changes in the concentration (%) of total amino acid in the crude protein of soybean during the ripening of different types of meju-brine mixture. Address: 1. Dep. of Food Technology, Korea Univ., Seoul, Korea; 2. Dep. of Food Preservation, the Royal Veterinary and Agricultural Univ., Copenhagen, Denmark.

2565. Lie Goan Hong. 1982. Nutritional aspects of fermented foods in Indonesia: An overview. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. Traditional Food Fermentation as Industrial Resources in ASCA Countries. xvii + 259 p. See p. 115-30. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [23 ref]

• **Summary:** Discusses the preparation of tempe, oncom, taucu, kecap, tempe bongkreng (an bongkreng poisoning), tempe gembus (okara tempeh), oncom ampas tahu (okara onchom), soysauce (kecap), and fermented fish products.

Tempeh is a good source of vitamin B-12 and of certain antibacterial agents. Certain minor legumes should also be used in preparing these traditional foods.

Table I shows the most important traditional fermented foods in Indonesia, with the name and type of product, organism used, substrate, nature of product (solid, liquid), and area of production and consumption. Address: Nutrition Unit Diponegoro, National Inst. for Health Research and Development, Ministry of Health, Jakarta, Indonesia.

2566. Lifespan Community Collective Ltd. 1982. Full of beans. Sheffield, England: Lifespan. 24 p. Illust. 21 cm. [1 ref]

• **Summary:** "This is a book about cooking pulses and beans," with several vegetarian recipes for each type. Contents: Introduction. Red kidney beans. Brown lentils. Soya beans. Chick peas. Butter beans [Lima beans]. Haricot beans. Red lentils. Field beans. Aduki beans. Split peas. Marrowfat peas. Black eye beans. Mung beans. Tofu or bean curd. Miso or bean paste. Bean sprouts.

Soya bean recipes: Soya and carrot pistou. Soya bean curry. Soya swede pie. The section on tofu describes "Tofu using soya beans" and "Tofu using soya flour. There is also a section on miso.

"Who we are: Lifespan is a workers' collective registered under Industrial & Provident Society rules. We live communally in two terraces of houses and share our work including childcare, domestic work, gardening, building maintenance, craft workshops and the printing business. We are part of a network of communities, seeking to provide an alternative lifestyle to the nuclear family, patriarchy and the nuclear state." Address: Townhead, Dunford Bridge, Sheffield S30 GT6, England. Phone: Barnsley (0226) 762359.

2567. McDonnell, Christine. 1982. Toad food & measles soup. New York, NY: The Dial Press. 111 p. Illust. by Diane de Groat. 20 cm.

• **Summary:** In this children's story, "toad food" and "measle soup" are Leo Nolan's words for tofu and miso soup (see p. 14-16). Though he (secretly) liked the first miso soup with tofu that his mother made and served as part of a new family experiment with vegetarian cooking, he quickly grew to dislike them, and to dread mealtimes. Leo liked hot dogs, hamburgers, french fries, and Coke. He had his troubles at school too. "In five funny, very real episodes mischievous Leo copes with many of the problems and insecurities that beset children today." A color illustration on the cover shows Leo seated at the table, looking wryly at a bowl of miso soup with cubes of tofu floating in it. A black-and-white illustration (p. 11) shows a bowl of miso soup.

2568. Mheen, T.I.; Kwon, T.W.; Lee, C.H. 1982. Traditional fermented food products in Korea. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. *Traditional Food Fermentation as Industrial Resources in ASCA Countries*. xvii + 259 p. See p. 63-81. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [13 ref]
- **Summary:** Discusses and gives a flow sheet and nutritional analysis for the following fermented soybean products: Meju, kochujang (soybean paste with red pepper added), doenjang, kochujang. "According to the available old literatures, the history of soybean cultivation for food uses in the Orient dates back to 4,000–5,000 years ago in China, 2,000 years ago in Korea, and 1,000 years ago in Japan (KIST, 1970; Watanabe et al. 1971)." Address: 1-2. Korea Inst. of Science and Technology, Seoul, Korea; 3. Korea Univ., Seoul, Korea.
2569. Nagai, Masaki; Hashimoto, Tsutomu; Yanagawa, Hiroshi; Yokoyama, Hideaki; Minowa, Masumi. 1982. Relationship of diet to the incidence of esophageal and stomach cancer in Japan. *Nutrition and Cancer* 3(4):257-68. [8 ref. Eng]
- **Summary:** In a study of food intake in 1,040 Japanese households, consumption of tofu was negatively related to these two cancers—after adjustment for income, population ratio of census industry, and other dietary variables. Thus, high rates of tofu consumption were associated with low rates of these cancers. An inverse association between the consumption of miso soup and stomach cancer seen in women was not significant on multivariate analysis. Address: 1-3. Dep. of Public Health, Jichi Medical School, Tochigi-ken, Japan.
2570. Nagano Miso Co. 1982. JEPRON, a protein rich food raw material. Ueda city, Nagano prefecture. 8 p.
- **Summary:** Describes production using ethyl alcohol, and composition of the three types. Address: Nagano prefecture, Japan.
2571. Reddy, N.R.; Pierson, M.D.; Sathe, S.K.; Salunkhe, D.K. 1982. Legume-based fermented foods: Their preparation and nutritional quality. *CRC Critical Reviews in Food Science and Nutrition* 17(4):335-70. [125 ref]
- **Summary:** Contents: 1. Introduction. 2. Soy sauce. 3. Tempeh. 4. Meitauza. 5. Miso. 6. Natto. 7. Sufu. 8. Fermented soybean milk and other fermented legume milk products. 9. Kenima. 10. Oncom (fermented peanut press cake). 11. Waries. 12. Papadams. 13. Dhokla. 14. Khaman. 15. Idli. 16. Dawadawa. 17. Other legume-fermented foods. 18. Future of legume-based fermented foods. References. Nutritional composition is given. Address: 1-2. Virginia Polytechnic Inst. and State Univ., Blacksburg, Virginia; 3. Univ. of Arizona, Tucson; 4. Mahatma Phule Agricultural Univ., Rahuri, Maharashtra State, India.
2572. Reed, Gerald. ed. 1982. Prescott & Dunn's industrial microbiology. 4th ed. Westport, Connecticut: AVI Publishing Co. xii + 884 p. Illust. Index. 23 cm.
- **Summary:** Chapter 12 (p. 492-538; 129 refs.), by H.L. Wang and C.W. Hesseltine, is titled "Oriental Fermented Foods." It discusses: Soy sauce, miso, tempeh, ontjom, hamanatto (known as tou-shih in China, tao-si in the Philippines, and tao-tjo in the East Indies [No! Tao-tjo is Indonesian-style miso]), sufu (also called Chinese cheese or bean cake), natto, idli, ang-kak, fermented fish products (incl. nuoc-mam), absence of mycotoxin in fermented foods, summary. Address: Vice president, Amber Labs, Milwaukee, Wisconsin.
2573. Rose, Anthony H. ed. 1982. Fermented foods. *Economic Microbiology* 7:1-337. (New York: Academic Press, Inc.)
- **Summary:** Includes: 1. History and scientific basic of microbial activity of fermented foods by Anthony H. Rose. 2. Indigenous fermented foods by Ko Swan Djien. 3. Soy sauce and miso by Brian J.B. Wood. Address: School of Biological Sciences, Univ. of Bath, Claverton Down, Bath, BA2 7AY England.
2574. Saono, Jenny K.D.; Baba, T.; Matsuyama, A. 1982. Problems to be assessed for further development of traditional food fermentation in Indonesia. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. *Traditional Food Fermentation as Industrial Resources in ASCA Countries*. xvii + 259 p. See p. 189-99. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [6 ref. Eng]
- **Summary:** Contents: Introduction. Tape. Brem wine. Brem cake. Palm wine and vinegar. Oncom. Tauco and kecap. Tempe bongkreng (which can cause fatal food poisoning). Concluding remarks.
Unconventional substrates for tempe, oncom, and kecap include winged beans, mungbeans, cowpeas, leucaena beans, faba beans, jack beans, sesban beans, and string beans. Address: Agricultural Products Processing Pilot Plant Project, JICA-FATEMETA, IPB, Bogor, Indonesia.
2575. Saono, S.; Winarno, F.G.; Karjadi, D. eds. 1982. Traditional food fermentation as industrial resources in ASCA countries. Jakarta, Indonesia: Indonesian Institute of Sciences (LIPI). xix + 259 p. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. No index. 28 cm.
- **Summary:** ASCA, the Association for Scientific Cooperation in Asia, was established in 1970. Each of the many interesting papers from this symposium that relates to soya is cited separately. Address: Indonesia.

2576. Sattilaro, Anthony J.; Monte, Tom. 1982. Recalled by life. Boston, Massachusetts: Houghton Mifflin Co. x + 223 p. No index. 22cm.

• **Summary:** “Four years ago, Dr. Sattilaro, President of the Methodist Hospital in Philadelphia, was dying of cancer. Today, after changing his lifestyle [primarily by adopting a macrobiotic diet], prescribed by Michio Kushi, he is totally free of this disease. Before this book was published, his remarkable story appeared in *Life Magazine* and the *Saturday Evening Post*, and he has told his story on television.” Address: M.D., Philadelphia.

2577. Shulman, Martha Rose. 1982. Fast vegetarian feasts. New York, NY: The Dial Press. 312 p. Illust. Index. 24 cm.

• **Summary:** This is a book of “delicious healthful meals in under 45 minutes. It is interested in protein complementarity with a low-fat diet. Soyfoods are used extensively. Wherever a heart symbol appears next to a recipe, it is acceptable for low-salt and low-fat dishes. The ingredients section (p. 13-18) discusses and defines soybeans (“the king of beans, as far as nutrients are concerned”), soy flakes, soy grits, miso, and tofu. “Tofu is my mainstay. It is a miracle food.” Savorex, Marmite, and Vegex are three different brand names for the same product, a yeast extract that comes in the form of a dark viscous paste.” Never cook soybeans in a pressure cooker. They tend to foam and clog the safety valve, which can cause an explosion.

Page 14 states: “Soy flakes: Soybeans that have been cooked, split, and dehydrated. Because they take only 30 minutes to cook and are as high in nutrients as soybeans, they are a perfect high-protein convenience food. Soy flakes can always be substituted in recipes for soybeans.

“Soy grits: Cracked soybeans. These are a nutritious addition to grain dishes (you can cook them along with the grains), have a nutty texture and taste, and take only 40 minutes to cook—another good convenience food.”

Soy-related recipes include: Tofu mayonnaise (p. 57). Tofu cream sauce. Tofu béchamel (p. 58). Morning tofu spread or evening pudding (p. 59). Roasted soybeans [dry roasted soynuts] (p. 60). Tamari-bouillon broth (p. 62). Instant tamari-bouillon broth (p. 63). Simple miso soup (p. 68-69). Miso soup with buckwheat noodles (p. 70).

One chapter is titled “Grains, legumes, tofu, and vegetables” (p. 91). Easy hiziki [hijiki] and squash dinner with soba and soy (flakes and tamari, p. 101). Brown rice “risotto” with soy flakes. Eggplant stuffed with rice and soy “risotto” or risi e bisi (p. 110). Fried rice and soy grits with vegetables (p. 114). Spicy eggplant miso sauté with bulgur. Purple cabbage, tofu, onions, and winter squash with miso (p. 125-26). Cabbage leaves stuffed with kasha, with creamy tofu sauce (p. 130). Tofu cutlets (p. 131). Chilled tofu with dipping sauces (p. 132). Teriyaki sauce (p. 133). Tahini-tamari sauce. Miso toppings for tofu and grains (adapted from *The Book of Miso*, p. 134-35). Tofu

vegetable curry (p. 136). Chinese-style tofu with vegetables and grains (p. 138-39). Tomato sauce with soy grits (p. 205). Tofu tomato sauce. Pasta with tofu cream sauce (p. 209). Pesto with miso (p. 217). Potato, tofu, and tomato tacos (p. 226). Tofu and poblano tacos (p. 228). Green tomato, corn, and tofu tacos (p. 230). Tofu mayonnaise (p. 237). Green tofu dressing (p. 238). Watercress, mushroom, and tofu salad (p. 252). Cottage cheese and tomato salad with miso dressing (p. 256). Tofu noodle kugel (p. 279).

Note: A revised 356-page edition was published in 1986. The author is now living in Paris (May 1985) and there is an added chapter of fish recipes. She has become “a more serious fish cook...” How can a vegetarian book contain a chapter of fish recipes? Address: Paris, France.

2578. Slamet, Dewi Sabita; Ubaidillah, -; Ganjar, Indrawati. 1982. Winged bean tauco. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. *Traditional Food Fermentation as Industrial Resources in ASCA Countries*. xvii + 259 p. See p. 221-26. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [7 ref]

• **Summary:** Tempe is also discussed. Table I. Some biochemical changes occurring in the substrate during the winged bean tempe fermentation. Table II. The total nitrogen, amino nitrogen, total acids and soluble carbohydrates of winged bean tauco prior to the addition of the ingredients (two treatments at 20% or 24% salt). Table III. The organoleptic test of winged bean tauco prepared from 1 48 hour fermented tempe, brined in 20% NaCl (salt) for 15 days. Conclusion: Winged bean tauco is acceptable for consumption. Address: 1-2. Nutrition Research and Development Centre, Dep. of Health, Bogor, Indonesia; 3. Faculty of Mathematics and Natural Sciences, Univ. of Indonesia, Jakarta, Indonesia.

2579. Steinkraus, Keith H. 1982. The indigenous fermented foods. *Nestle Research News* 1980/81. p. 23-28. [19 ref]

• **Summary:** Contents: Introduction. Classification of indigenous food fermentations. Modern methods of introducing meat textures into vegetable substrates. Indigenous methods for introducing meat-like textures into vegetable substrates. Fermented foods involving development of meat-like flavor. Fermented foods involving an acid fermentation. Fermented foods involving an alcoholic fermentation. Germination (malting). Production of sweet/sour alcoholic pastes from high starch substrates. Leavened bread without the use of wheat. References. Contains many interesting color photos of indigenous fermented foods, some of them soy-based. Address: Prof. of Microbiology and Food Science, Inst. of Food Science, Cornell Univ., Geneva/Ithaca, New York.

2580. Steinkraus, K.H. 1982. Fermented foods and beverages: The role of mixed cultures. In: A.T. Bull and J.H.

Slater, eds. 1982. *Microbial Interactions and Communities*. Vol. 1. New York: Academic Press. See p. 407-42. [100+ ref]

• **Summary:** Contents: 1. Introduction. 2. Development of meat-like flavors through fermentation. 3. Development of meat-like textures through fermentation. 4. Foods and beverages involving an alcoholic fermentation. 5. Foods involving an acid fermentation. 6. Summary. Address: Cornell Univ., Geneva, New York.

2581. Steinkraus, Keith H. 1982. Traditional food fermentations as industrial resources. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. *Traditional Food Fermentation as Industrial Resources in ASCA Countries*. xvii + 259 p. See p. 3-16. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [30 ref]

• **Summary:** Contents: Introduction. Production of meat-like flavours from vegetable proteins. Soysauce (Japanese Shoyu) and miso fermentation. Fish/shrimp sauces and pastes. The koji principle. Meat substitutes (analogues). Indonesian tempe kedele: Traditional tempe fermentation, industrial production of tempe. A process for raising the protein content of high starch substrate. Leavened bread-like foods without the use of wheat or rye. Coconut protein as an industrial resource. Summary. Address: Prof. of Microbiology, Inst. of Food Science, Cornell Univ., Geneva, New York 14456.

2582. Wang, H.L.; Hesseltine, C.W. 1982. Oriental fermented foods. In: G. Reed, ed. 1982. *Prescott & Dunn's Industrial Microbiology*, 4th ed. Westport, CT: AVI Publishing Co. xii + 883 p. See p. 492-538. Chap. 12. [129 ref]

• **Summary:** Contents: Introduction. Soy sauce. Miso. Tempeh. Ontjom. Hamanatto. Sufu. Natto. Idli. Ang-kak. Fermented fish products (esp. nuoc mam). Absence of mycotoxin in fermented foods. Summary. Address: NRRRC, Peoria, Illinois.

2583. Winarno, F.G. 1982. The nutritional potential of fermented foods in Indonesia. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. *Traditional Food Fermentation as Industrial Resources in ASCA Countries*. xvii + 259 p. See p. 31-40. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [5 ref]

• **Summary:** Discusses tempe, tempe fish rice (TFR), oncom (onchom), tempe bongkreng (from coconut presscake), tempeh gembus (from okara), and tauco. Indonesian tempeh may contain 30 nanograms of vitamin B-12 per gm of tempe. If average daily consumption were 60 gm per person, tempeh would provide 60% of the daily requirement of B-12. In 1978, estimated annual tempe production in Indonesia was about 75,600 tons.

“Taucu is a very popular fermented food in Indonesia particularly for people who live in West Java. So far Taucu is utilized mainly as a seasoning and is used in vegetable soups, fish and meat, to enhance their flavour...”

“A study on the development of a ‘New Taucu Product’ is now being conducted at the Food Technology Development Centre, Bogor, to make Taucu a mass consumption product, by experimenting with different soup recipes to meet the Indonesian taste, both in the urban and rural population.” Address: Food Technology Development Centre, FATEMETA-IPB, Bogor, Indonesia.

2584. Yokotsuka, Tamotsu. 1982. Industrial application of proteinous fermented foods. In: S. Saono, F.G. Winarno, and D. Karjadi, eds. 1982. *Traditional Food Fermentation as Industrial Resources in ASCA Countries*. xvii + 259 p. See p. 145-80. Proceedings of a technical seminar, held 9-11 Feb. 1981 at Medan, Indonesia. [130 ref]

• **Summary:** Contents: Introduction. Japanese shoyu: Koikuchi, usukuchi, tamari, shiro, saishikomi, fish-soy, JAS grades. The soysauce produced in other Oriental countries (Korea, Taiwan, Singapore, southern China; Inyu, tamari-style). Miso. Manufacture: Koikuchi shoyu (treatment of raw materials, koji making, mash making and aging, pressing of the mash, refining), tamari shoyu, miso. Some recent research and technological progress in shoyu and miso manufacturing: Whole and defatted soybeans as raw materials, treatment of raw materials, koji molds, koji making, control of mash, refining (pressing of the mash, pasteurization), product (colour, flavour, flavour components).

Tables: (1) Annual production of 5 different kinds of shoyu in Japan, and total, 1979. (2) Typical composition of 6 different kinds of shoyu (analyzed by Kikkoman Shoyu Co., Ltd., 1978). For each gives: Be (Baume), NaCl, total nitrogen, formol nitrogen, reducing sugars, alcohol %, and pH. (3) Composition of 7 types of typical Japanese miso (Ebine, 1980). (4) NK cooking method of soybeans as compared to the conventional method (Tateno and Umeda, 1955). (5) Chemical analyses of shoyu fermented from soybeans denatured by methanol and by conventional cooking (Yamaguchi, 1954). (6) Analysis of liquid part of shoyu mash after 40 days prepared from defatted soybean meal denatured by ethanol, isopropanol, or NK cooking (Fukushima and Mogi, 1955, 1957). (7) Effect of cooking conditions of soybeans on the enzymatic digestibility of protein (Yokotsuka et al., 1966). (8) Cooling speed and digestibility of protein. (9) Fraction of proteases produced by *Aspergillus sojae* through Sephadex G-100 (Nakadai, 1977). (10) Changes of viable counts of yeast in shoyu mash (Mogi Keitaro et al., 1968).

Figures: (1) Flow sheet—Koikuchi shoyu fermentation. (2) Flow sheet—Miso fermentation. (3) Cross-sectional illustration—Continuous soybean cooker: Screw type and net

conveyor type. (4) Temperature change of materials during koji cultivation by the conventional method using wooden trays (Shibuya, 1969). (5) Koji cultivation at 25°C (Haga et al., 1967). (6) Preferable temperature change of the materials during 3-day koji cultivation (Haga et al., 1967). (7) Temperature change of the materials during mechanical koji cultivation with a through-flow system of aeration during 3 days (Shibuya, 1969). (8) Temperature change of the materials during mechanical koji cultivation with a through-flow system of aeration during 4 days (Shibuya, 1969). (9) Koji culturing machines with a through-flow system of aeration: Rectangular type, circular type (batch), circular type (continuous). Address: Kikkoman Corp., Noda-shi, Chiba-ken, Japan.

2585. Yoneda, Soei; Hoshino, Koei; Schuefftan, Kim. 1982. Good food from a Japanese temple. Tokyo, New York, and San Francisco: Kodansha International. 224 p. Illust. Index. 27 cm.

• **Summary:** An outstanding, beautiful book, the best seen to date on Buddhist Vegetarian Cookery (*shojin ryori*)—after you get past the poor, almost embarrassing introduction, written by Robert Farrar Capon of New York. The author, Sōei Yoneda, is a great Zen Abbess and cook, and a visit to Sankō-in, a Rinzaï nunnery, is an unforgettable experience. The recipes are arranged by season: Spring, summer, autumn, winter, all seasons. For every recipe, both a Japanese and an English-language name are given. Soy-related recipes include: Soybean rice (*mame gohan*, p. 73). Unohana rice (with fried okara, p. 75). Thick-rolled sushi (with dried-frozen tofu, p. 75). Tofu rice (p. 80). Soy bean dashi (p. 82). Miso soups (p. 85-88; 14 recipes, one for each month but two for Jan. 1 and 2—White miso Ozoni and Zen temple ozoni—and one for all seasons—Saké lees soup). Pickling with miso (p. 89). Rape blossoms with miso-mustard dressing (p. 93). Bamboo shoots with vinegar-miso dressing (p. 98-99). Quick oden (with tofu, p. 107-08). Green beans with miso dressing (p. 113-14). Eggplant with miso sauce (p. 123). Zucchini with sesame-miso sauce (p. 129). Steamed zucchini with three-color miso (p. 130-31). Jade nuggets (*kizami nattō no ao-jiso age*, p. 136). Pine cones (*matsukasa*, with tofu, p. 151). Miso-pickled vinegared konbu kelp (p. 153). Crisp turnip with sesame-miso dressing (p. 158). Amazake (p. 162). Daikon with miso sauce (*daikon oden*, p. 170). Brussels sprouts with miso sauce (p. 179-80). Dried-frozen tofu mélange (p. 181-82). Not exactly hamburger (“patties” with dried-frozen tofu and okara, p. 182). Simmered dried-frozen tofu (p. 182-83). Dried-frozen tofu tempura (p. 183). Konnyaku in miso dressing (p. 184). Fried unohana (*iri unohana*, with thin deep-fried tofu and okara, p. 187; “The mash or lees (*okara*) remaining after making tofu are inexpensive, plentiful, and nourishing—ideal everyday temple food. By itself *okara* is not interesting, but it is brought to life by the addition of a

little oil and a few other ingredients”). Inari-zushi (p. 189-90). Grilled usuage (with thin deep-fried tofu, p. 190). Deep-fried usuage (p. 190-91). Golden sushi rolls (with usuage, p. 191). Rōbai (Sanko-in fresh wheat gluten, p. 192-93). Deep-fried dried yuba (p. 195). Fried and simmered dried yuba (p. 196). Sesame “tofu” (with kuzu, p. 196-99). Almond tofu (p. 202). Salt-grilled tofu (from old Naniwa, today’s Osaka, p. 203-04). Steamed tofu loaf (p. 206). Salad with white [tofu] dressing (*shira ae*, p. 206-07). Steamed tofu cup (*otōfu no chawan mushi*, p. 208). Deep-fried tofu in thick sauce (p. 209). Tofu sauté (*yaki-dofu no atsuyaki*, p. 213). Bean flowers (*nattō no mochi gurumi*, p. 215). Buckwheat-miso topping (p. 215-16). Miso mayonnaise (with sweet white Saikyo miso, p. 216-17). Contains 17 pages of color photos showing dishes prepared from recipes in this book. The 510 delicate illustrations (both line drawings and simple brush paintings) clarify and enhance the text throughout.

In 1987 this book was re-issued with a new title: The Heart of Zen Cuisine: A 600-year Tradition of Vegetarian Cookery. Address: 1. Abbess, Sanko-in Zen temple, Honcho 3-1-36, Koganei-shi, West Tokyo (Musashi Koganei Station).

2586. **Product Name:** Meiji Seifun Miso [Mugi, or Kome]. **Manufacturer’s Name:** Chico-San, Inc. (Importer). Made in Japan. **Manufacturer’s Address:** P.O. Box 810, Chico, CA 95927.

Date of Introduction: 1982?

New Product–Documentation: Crackerbarrel. 1983. Jan. No. 1. p. 1. And Crackerbarrel. 1983. April. p. 5. Meiji Seifun is in Hiroshima.

2587. Desert Gardens. 1982? New soyfoods restaurant or deli. 702 Main St., Safford, AZ 85546.

• **Summary:** Menu sent by owner Katerina Lewis about 1982. “One of our main staples is tofu...” Soy-related recipes include—Appetizers: Eggless salad (with tofu), Brazilian bean dip (with tofu), French onion dip (with tofu & miso), California guacamole (with tofu). Side dishes: Potato tofu knish, Chili beans & tofu, Baked potatoes (with tofu sour cream), Tofu pizza. Deli: Tofu cottage cheese, Soy sour cream, Tofu cream cheese. Entrees: Sicilian eggplant Parmesan (with tofu), Tofu & fresh vegetable saute, The combo (featuring breaded tofu cutlets). Sandwiches: Tofuburger with millet, Sizzling tofu, Guacamole, Tofagel (tofu, sprouts, and tomato on a toasted bagel). Beverages: Soy milk, Soy shakes. Desserts: Tofu cheesecake. Soybean ice cream. Address: Safford, Arizona. Phone: 428-5132.

2588. **Product Name:** Brown Rice Miso, Barley Miso, Soybean Miso (Aged 1 Year).

Manufacturer’s Name: Full of Beans Wholefoods.

Manufacturer's Address: 97 High St., Lewes, East Sussex, BN7 1XH, England. Phone: 079-16-2627.

Date of Introduction: 1982?

New Product–Documentation: Form filled out by John and Sarah Gosling. ca. 1982. They started in Aug. 1978. Now make tofu, soy milk, and three types of miso.

2589. Belleme, John. 1983. Re: Developing new products at American Miso Co. Letter to William Shurtleff at Soyfoods Center, Jan. 6. 1 p. Typed, without signature or letterhead.

• **Summary:** John is developing three new types of miso: (1) Traditional red miso (with less salt and more koji than the aka-miso currently imported from Sendai Miso-Shoyu under the Johsen brand). (2) Mellow barley miso (unpasteurized, it should be refrigerated for long-term storage). (3) Mellow White Miso (unpasteurized, it should be refrigerated for long-term storage). He sends a sample of each and asks for comments. Address: Route 3, Box 541, Rutherfordton, North Carolina. Phone: (704) 287-2940.

2590. Kennedy, J. Robert. 1983. History of Chico-San and macrobiotics in America (Interview). Conducted by William Shurtleff of Soyfoods Center, Jan. 6. 2 p. transcript.

• **Summary:** Discusses rice cake production, George Ohsawa, Paul Hawken, Michio Kushi, early relationship with Erewhon and Lundberg Brothers (rice farmers). Kennedy and his group came to California for two reasons: brown rice and nuclear safety. They started to make rice syrup (amé) in 1972. Future plans to make miso and shoyu in America. Chico-San first imported miso from Ohsawa, himself, in Tokyo starting in 1961. Herman Aihara in New York ordered 2-3 shipments. Then they started to order from Muso Shokuhin. Address: Chico, California.

2591. Sheraton, Mimi. 1983. Restaurants: Japanese fare for theater nights. *New York Times*. Jan. 14. p. C18.

• **Summary:** This is a review of Sushiko, a Japanese restaurant at 231 West 55th St., between Broadway and Eighth Ave. in New York City. They sell: “fried half-eggplant mellowed with miso sauce, topped with sesame seeds; soybean cakes [tofu] in seaweed soup with vegetables; oshitashi [o-shitashi, o-hitashi], a salad of marinated spinach with soy sauce and crunchy flakes of dried bonito, and natto, winy, fermented soybeans in an egg and scallion sauce.”

And “zaru soba, cold buckwheat noodles with soy sauce, horseradish and scallions were refreshing.” “Broiled fish, meats and poultry, done teriyaki-style are stringy and less interesting...”

2592. Gevaert, Pierre. 1983. Re: Making miso, tofu, and soy sauce in Europe. Questions answered on Soyfoods Center letterhead (26 Jan 1983) and returned to SC. 1 p.

• **Summary:** Q1. Are you now making soy sauce (shoyu or tamari) in Both Belgium and France? Please give the address and phone numbers of each plant where you are making soy sauce. When did you start making soy sauce in France?

Ans1. We will finally start making shoyu in April 1982, only in France. At Lima-Andiran, 47170 Mezin, France. Tel. 5365 1002. Lima is presently making miso at their plant in Mezin.

Q2. Do you make miso at your plant at Sint-Martens-Latem? Ans2. No.

Q3. Are you making tofu, yourselves, anywhere in Europe or is it made for you by other companies? Ans3. Jonathan at Antwerp, Belgium, makes it for us using our organic soybeans.

Q4. Can you tell me (if it is not a secret) roughly how much of the following in metric tons you produced in 1892? Ans4. Soy sauce 0. Miso 5 tons. Tofu 2/3 tons. Address: Lima Foods, Edgar Gevaertdreef 10, Sint-Martens-Latem 9830, Belgium. Phone: 09-52-4176.

2593. Hughes Markets; El Rancho Markets. 1983. Hughes Markets ham and egg sale! (Ad). *Los Angeles Times*. Jan. 27. p. J34.

• **Summary:** The section titled “Foods of the Orient—in our fresh produce dept.” includes: “19-oz. Pkg. Hinode Tofu—59¢. Ramen noodles... Yamaizumi Miso—16-oz. cup Soy Bean Paste—\$1.19. Morinaga Tofu—10 oz. Pkg. Soy Bean Curd—47¢.”

2594. Arasaki, Seibin; Arasaki, Teruko. 1983. Vegetables from the sea: Low calorie, high nutrition, to help you look and feel better. Tokyo: Japan Publications. 196 p. Illust. (color plates and line drawings). Index. Jan. 26 cm. [Eng]

• **Summary:** This is probably the best English-language book written about sea vegetables. Contents: Preface. Part I: General information. Introduction. 1. In the human diet: In general, in Japan. 2. Dietary and medical applications: Chemical composition (polysaccharides, proteins, amino acids and peptides, fats and lipids, vitamins, minerals, nutritional value, pigments), flavor and taste (specific Japanese seaweeds as foods), medical applications (antilipemic and blood-cholesterol reducing substances, blood anticoagulants, antitumoral {anti-cancer} effects, antibiotics, toxic compounds, medical uses of alginate), folk medicine, thalassotherapy and algotherapy, longevity. 3. Biology of the algae: Differences, pigment systems, photosynthetic products and storage substances, land and marine vegetation, life-spans and seasonality, generation alterations. 4. Harvesting and farming: General (Monostroma and Enteromorpha), brown algae (Laminariales and Undaria, artificial cultivation), red algae (Porphyra, Euclima and Gelidium), freshwater algae. 5. Processing and preserving: General, amanori and aonori,

green algae (*Caulerpa*, sea grapes), brown algae (wakame, kombu, arame and hijiki, mozuku), red algae, nostoc freshwater algae, domestic algae. 6. Illustrations of major sea vegetables.

Part II: Cooking with sea vegetables. Kombu (*Laminaria*). Wakame (*Undaria pinnatifida*) and Matsumo (*Analipus japonicus*). Hijiki (*Hizikia fusiforme*). Arame (*Eisenia bicyclis*). Asakusa nori (*Porphyra tenera*). Tosakanori (*Meristotheca papulosa*). Kanten (*Agar*). Green laver (*Enteromorpha*).

Index of scientific names of sea vegetables. Index of Japanese names of sea vegetables. List of recipes. Address: 1. Prof. and lecturer on Fisheries Botany and Marine Ecology, Univ. of Tokyo and Nihon Univ., Japan; 2. Prof. Kobe-Yamate Women's College, Lab. of Biochemistry.

2595. **Product Name:** Yamaki Organic Miso [Hatcho, Mugi, or Genmai], and Yamaki Organic Soy Sauce. **Manufacturer's Name:** Chico-San, Inc. (Importer). Made in Japan. **Manufacturer's Address:** P.O. Box 810, Chico, CA 95927.

Date of Introduction: 1983. January.

New Product–Documentation: Crackerbarrel. 1983. Jan. No. 1. p. 1. "Our new line of organic imports. Long awaited soy sauce and miso from organically grown ingredients introduced... The Yamaki Co. [Yamaki Jôzo], owned by Tomio Kitani, contracts directly with family farmers for his organically grown grains. Yamaki miso is unpasteurized. The organic soy sauce has 16.9% salt."

Note: The Yamaki Co. is located in Kamiizumi-mura, about 75 miles from Tokyo, Japan.

2596. Kennedy, Robert. 1983. A message from our president [History of Chico-San]. *Crackerbarrel (Chico, California)* 1(1):2. Jan.

• **Summary:** This article, which gives a brief history of Chico-San, Inc., is in the first issue of a new Chico-San newsletter. Also includes an articles on imports from Japan and winter recipes using miso and soy sauce.

Chico-San was incorporated in March 1962. Address: Chico-San, Inc., P.O. Box 810, Chico, California 95927.

2597. Mountain Ark Trading Company. 1983. Catalog–Jan. 1983 [Mail order]. 109 South East St., Fayetteville, AR 72701. 30 p. 27 cm.

• **Summary:** This is a mail order catalog for macrobiotic whole foods, specialty cookware, cookbooks and books on natural healing, futons, furniture, etc. A detailed description of each product is given. The owners of the company are Frank & Phyllis Head, Tom & Toby Monte, Bill & Carol Tims, and Joel & Wendy Wollner.

Concerning seitan and *fu*, we read (p. 34): "Seitan 'Wheat Meat' Condiment–Chewy chunks of wheat gluten

simmered in a savory broth of shoyu and ginger. Rich, meaty flavor. A very concentrated food: 100% wheat protein. Ready to eat or add to a favorite recipe. How about Seitan and Tofu Stew! Sweet and Sour Seitan! Seitan in Split Pea Soup! \$2.95 per 3.5 oz. jar (not incl. shipping cost). Note: This seitan was made in Japan.

"'Fu' Wheat Gluten–Steamed and dried cakes of nutritious wheat gluten, extremely light, simple to serve and easy to digest. Fu's light chewy texture and subtle wheat flavor adds new life to your cooking–and, with the greatest of ease. Soak briefly and add to your favorite recipe. Goes well with all foods. Soups. Stews. Beans. Vegetables. Sifted wheat fu rings \$1.25 per pkg. of 12. Sifted wheat fu sheets \$1.85 per pkg. of 5. Whole wheat fu rings \$1.75 per pkg. of 12." Address: Fayetteville, Arkansas. Phone: 501-442-7191.

2598. Hattori, Terumitsu. 1983. The soy sauce / shoyu industry in the United States (Interview). *SoyaScan Notes*. Feb. 4. Conducted by William Shurtleff of Soyfoods Center. • **Summary:** The production of soy sauce in the United States has been growing (on average) at 7-8% a year since about 1970, and Kikkoman production has been growing at 13% a year during that same period.

Kikkoman presently makes 20,000 kl (kiloliters) a year; estimated total U.S. production (fermented + HVP) is 40,000 kl/year. Imports of soy sauce to the USA are 10,000+ kl/year. Thus in 1982 total US consumption was 50,000 kl (58,750 metric tons) per year. Kikkoman produced about 50% of the soy sauce made in the USA; this was 40% of total U.S. consumption.

In Feb. 1983 U.S. per capita consumption was 216.1 ml = 253.9 gm = 14.65 tablespoons of shoyu.

Conversion figures–Relative density: (1) Regular shoyu: 1.17 to 1.18 (so 1 gallon weighs 9.8 lb). (2) Milder shoyu: 1.13 to 1.14. Usukuchi shoyu (20% salt): 1.19 to 1.20. 1 million gallons = 3.785 million liters = 3.785 kiloliters. 1 kiloliter = 264.18 U.S. gallons = 2,200.6 lbs of water.

Note: Comparing this with miso. In Sept. 1981 total U.S. miso consumption (production + imports) was 1,500 metric tons. This is only 2.5% as much as U.S. soy sauce consumption. So per capital U.S. miso consumption = 6.34 gm/year = 1.1 tablespoons per year. 1 level tablespoon of miso weighs 17.3 gm. 1 level teaspoon of miso weighs 5.76 gm. 1 tablespoon of regular shoyu weighs 17.33 gm. Address: Kikkoman International Inc., 50 California St. #3600, San Francisco, CA 94111. Phone: 415-956-7750.

2599. Elwell, Christian. 1983. Work with miso in America (Interview). *SoyaScan Notes*. Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Thom Leonard plans to go to southern Ireland in the spring of 1983 with his wife, Derbhail (pronounced der-VAL) to set up a miso shop. They were married in

August 1981. Thom's wife's father is an important Irish politician.

Ask Charles Kendall about early Caucasian miso makers; he is in Ashburnham, Massachusetts.

Ira Leviton took a lot of photos while he was at the Elwell's researching an article about miso. Christian will send Shurtleff color slides; Shurtleff will pay the cost of reproducing and shipping.

Christian has now harvested "mellow corn miso," made using yellow Longfellow flint corn as the grain. He cooked the corn in water with ash and lime to dissolve the outer skin. He can make 2,400 lb/week of miso, and he plans to do six such cycles [good name] more. Next year he hopes to do 20 cycles. He is shooting for 48,000 pounds of miso production and sales a year. He has found the book *Miso Production*, by Shurtleff and Aoyagi to be "extremely helpful." Address: Conway, Massachusetts.

2600. Hawken, Paul. 1983. Erewhon and miso in America (Interview). *SoyaScan Notes*. Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In the early days, the first Erewhon retail store (located downstairs) got miso from Infinity (in New York City), Chico-san, and perhaps a little from Lima in Belgium, plus Hatcho miso from a Japanese trading company (perhaps JFC or Nishimoto).

Paul doesn't know of any early Caucasian miso makers. Address: California.

2601. Kushi, Aveline. 1983. Miso in Boston (Interview). *SoyaScan Notes*. Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Aveline thinks Junsei Yamazaki made miso in New York then brought it to Cambridge before the group went to Chico, California. Best to ask him. Aveline and others called Yamazaki to ask him to come to Cambridge to make miso there; he came and made miso and rice cakes, then he brought the things [such as miso] he had made elsewhere. She can't remember where; it could have been, either Cambridge or New York—probably New York.

Aveline does not remember who the first Caucasian to make miso in America was. But in about 1973 Aveline held some informal miso-making classes for those interested in doing so. They brought ready-made store-bought koji and made miso using that koji. She held these classes in several places. At each class they made about 1 keg = 18 liters. They also made mochi.

Aveline always calls George Ohsawa "Sakurazawa sensei." Important.

In about 1978-79, after Aveline's book *How to Cook with Miso* was published [in Dec. 1978], Yamazaki came to Boston to teach koji-making. Address: Brookline, Massachusetts.

2602. Leonard, Thom. 1983. Pioneering work with miso in America (Interview). *SoyaScan Notes*. Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In the fall of 1974, Thom Leonard made his first batch of barley koji and barley miso using a recipe in Herman Aihara's new book titled *Soybean Diet*. The 80-pound batch of miso was aged in a soy sauce keg from Hong Kong. He then made 80-pound batches of chunky wheat miso in the fall of 1975 (he later pickled tofu in it) and of barley miso in early 1976. After moving to Fayetteville, Arkansas, he and Jim Hemminger made larger scale miso equipment and on 15 April 1977 packed their first 35-gallon cedar vat with brown-rice miso. Soon over 1,000 lb were aging in the vats. This miso was sold to and distributed by the Ozark Cooperative Warehouse.

Thom and Richard Kluding founded the first Caucasian-run miso company in North America, Ohio Miso Co. in Monroeville, Ohio. They began production on 13 March 1979. By Jan. 1980 Ohio Miso was making several varieties of miso: brown rice, barley (one or two year), mellow brown rice, mellow red, and black soybean; output was 2,400 lb/week.

Then in the spring of 1980 Leonard and Kluding split up, largely because of interpersonal problems. In the summer of 1980 Leonard taught miso classes at the macrobiotic Spiral Inn and Moniteau Farm in Missouri. Then in late 1980 he taught 2 classes on making miso, natto, tofu, and tempeh at the Kushi Institute in Boston, Massachusetts, with 30-40 people per class. In 1981 and 1982 he taught 8 similar classes out of his home in Boston, plus four 3-day residential workshops on the same subjects. All were sold out every time. In 1983 he plans to travel Ireland to start a miso plant in County Kilkenny. Friends of his own several old buildings. The Irish government will help pay startup costs, covering 45% of the required startup capital plus 25% of the rent for the first 5 years. He hopes to be start in July 1983 and be producing miso by late 1983. He hopes to make 100,000 to 200,000 pounds of mostly barley miso, both mellow barley and 12-24 month barley miso. Thom's constitution is so yang that he can't eat much miso—which is also very yang. But this week he enjoyed miso soup twice, which is more than he has had for the past year.

Note: Thom and his wife went to Ireland but they never started a miso plant or commercial miso production there. Address: Brookline, Massachusetts.

2603. Root, Evan. 1983. Miso in Boston (Interview). *SoyaScan Notes*. Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** When Evan arrived in Boston in March 1966, there were three 18-liter kegs in the Kushi basement containing aging miso that had been made by Junsei

Yamazaki. Evan is not sure when Junsei made them, but probably on the East Coast.

He can't remember any early people making miso. Now Thom Leonard is teaching miso-making classes at the Kushi Institute and Christian Elwell is making miso on his own. It seems to Evan like lots of people are doing it now. Address: Brookline, Massachusetts.

2604. Yamazaki, Junsei. 1983. Work with miso and macrobiotics in America (Interview). *SoyaScan Notes*. Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Junsei arrived in the U.S. in May 1963. He first went to Chico, California, to help with the installation of small rice cake machines. After the July 1963 summer camp at French Meadows, California, he went to New York, arriving in August. Initially, he did nothing with soyfoods in New York. But there was a group in New York, composed of a woman or women; he can't recall the name. It was not Irma Paule, but rather some woman whose husband had died in a car accident. They asked him to teach them how to make miso, and he taught her how to make miso.

Initially Herman Aihara (pronounced AI-ha-ra) had to work as a guard to earn money in Chico; the macrobiotic group in Chico had no income. Some group raised money for him to do something in New York or Chico.

In about Nov. 1963 Michio Kushi opened the Genpei restaurant on the first floor of the Diamond Jim Building on 46th Street in New York City. In the basement Junsei made koji, then about 100 pounds of miso. He showed the process to a Caucasian woman and child. The miso was not used in the restaurant. Junsei took it to Boston, where it was used by Michio and Aveline Kushi themselves.

In March 1964 Junsei went to Chico-san in Chico, California. While making rice cakes there, he made miso in the interim. Starting in about 1965, when Chico moved to a bigger place, he made about 20 whiskey barrels full of miso; each barrel held 320 lbs of miso. He did not really teach miso making to anyone. The real teacher among macrobiotics was Mr. Muramoto.

In Boston, Erewhon wanted to make miso within their building. They asked Yamazaki to tell them the best place, so he went to Boston. He did not teach any classes to students then, unlike what Aveline recalled.

In 1980 Junsei and his wife bought land in Orland, in northern California (Zip code 95963). He wants to make miso using good ingredients, either cooperatively or in individual homes. He is now working as a guard for a construction firm. He also wants to grow ume plum trees for making umeboshi [salt plums]; he tried this in Washington state but failed. Address: Orland, California.

2605. Kendall, Charles. 1983. Early work making miso in America (Interview). *SoyaScan Notes*. Feb. 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In about 1974 Charlie heard that someone up at Erewhon Farms in New Hampshire, a macrobiotic community, had made miso. That person was part of a group of people who tried to start a farm in New Hampshire. In 1976 Charles made a batch of miso at home using ready-made store-bought koji and following instructions from one of Michio Kushi's lectures.

Note: At Tassajara Zen Mountain Center (in the Santa Lucia Mountains, California), we made miso long before 1974. The method was transmitted by Zen priests from Japan. Ask Loring Palmer and Ed Brown for more details. Address: Ashburnham, Massachusetts.

2606. Palmer, Loring. 1983. How to make the "bean revolution" succeed in America. Miso making at Tassajara (Interview). *SoyaScan Notes*. Feb. 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** If the "bean revolution" is ever to succeed in American, we must learn the Julia Child method for getting rid of the flatulence-causing substances in beans. Loring learned this from someone at the Minneapolis, Zen Center (Minnesota), and it may also be in her book on beans.

Soak the beans in 10 times their volume of water. Then bring to a boil. Allow to cool and discard the water. Again add the same amount of water, cook the beans as required, then discard the cooking water again. Serve the beans. Since flatulence factors or oligosaccharides are water-soluble sugars, most will dissolve in the water and be discarded with it. This method can also be used in cooking the soybeans for miso.

Loring has no memories of making miso at Zen Mountain Center at Tassajara in the Santa Lucia Mountains; he was in San Francisco when we made miso at Tassajara. In 1972 Loring made miso from ready-made koji, a process he learned from Herman Aihara. Address: Boulderado Hotel, Boulder, Colorado.

2607. Rankin, Blake. 1983. Early work making miso in America (Interview). *SoyaScan Notes*. Feb. 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In late 1975 and early 1976 George Gearhardt taught a number of miso classes on the West Coast; Blake did not. But George Gearhardt and Blake made miso back in 1974-75, after Blake returned from a trip to Japan. The maximum in the works was 500 pounds—back in the days when they owned Janus Natural Foods, in Seattle. In early 1974 they made a number of small batches, then when those turned out well they made a number of larger batches at Janus. They made barley miso first using bulk dried koji from Japan, but for big batches, in 1975, he had redwood koji boxes made and they made koji themselves, using Janus' kitchen. At the end of 1975, when doing a 30-day koji run he did informal classes inviting 6 people from the Seattle Zen Center. A single big batch was 40-50 pounds;

then some people in the Zen center made miso using the groups koji. Blake also made miso using eastern Washington soft white wheat.

How did Blake learn to make miso? Probably from notes he had taken in Japan while visiting miso plants there—plus (maybe) Herman Aihara's books and maybe some comments from Junsei Yamazaki. His notes alone would not have been detailed enough. Blake does not know of any Caucasians who made miso in the USA before he did. The only person he knows who made miso in the USA before he did is Junsei Yamazaki.

Blake lost all his notes at the time of Janus' bankruptcy. When Blake returned from Japan at the end of the 1970s, the miso was all gone.

Blake does not know where George Gearhardt is now—probably in Spokane or Seattle. Cooking classes at the Federal Way Natural Food Store. He imports Taiwan tatamis for \$72 each plus shipping. Blake left in Aug. or Sept. to go to Japan. George moves a lot. Address: Washington state.

2608. Arikawa, Minoru. 1983. Work with miso in America (Interview). *SoyaScan Notes*. Feb. 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Norio Company was started in 1919 by Mr. Masaichi Norio in San Francisco, at 1531 Geary St. He made only *shiro miso* (probably sweet white, mellow white, or light yellow miso) and exported most of it to Hawaii. In about 1932 the company was moved to 1532 Post St., on the outskirts of San Francisco's Japan-town. There it was run by Mr. and Mrs. Minoru Arikawa and son, who were relatives of the founder. The U.S. government forced the family to close the business (then making about 180,000 lb of miso a year) when World War II started in late 1941. They resumed after the War but retired in 1972 and the business was closed to make room for a high-rise condominium.

In 1941 Fujimoto was the biggest miso maker in the continental USA. He thinks there were three miso manufacturing companies in the continental USA, all on the West Coast.

He thinks Yamaizumi was started in Los Angeles in the 1930s, probably by a man from Fukuoka. He thinks Yamaizumi was both the company name and the brand name. Address: San Francisco, California. Phone: 415-387-7217.

2609. Milbury, Peter. 1983. Chico-San, miso, and soy sauce (Interview). *SoyaScan Notes*. Feb. 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bob Kennedy thinks that Junsei Yamazaki made a total of 20 barrels of miso from 1965 to 1972. Only 3-4 were in the building that was burned down by the fire at Chico-San. The rest came to maturity and were mixed with imported miso. Mr. Yamazaki also made about 3 barrels of fermented shoyu (soy sauce) at Chico-San in about 1965.

Chico-San feels that SANA (Soyfoods Assoc. of North America) should establish soy sauce terminology, standards, and an analysis program. Importers could help set it up to protect themselves.

Mr. Kitani is Chico-San's advisor for fermented soyfoods. He is a manufacturer in Japan. Chico-San now has a four-stage plan to make miso and shoyu in Chico. 1. Import bulk miso from Mr. Kitani and let it age in Chico. Adjust the ambient temperature by opening and closing doors and windows. 2. Make miso in Chico using koji imported from Japan under refrigeration. 3. Make koji in Chico. 4. Make shoyu in Chico. Address: Chico-San, Chico, California.

2610. Milbury, Peter. 1983. Junsei Yamazaki's work with miso and shoyu at Chico-San. Work of Mr. Kitani. (Interview). Conducted by William Shurtleff of Soyfoods Center, Feb. 17. ½ p. transcript.

• **Summary:** Bob Kennedy thinks Mr. Yamazaki made a total of 20 barrels of miso from 1965 to 1972. Only 3 to 4 were destroyed by the fire. The rest came to maturity and was mixed with imported miso. Mr. Yamazaki also made about 3 barrels of fermented soy sauce at Chico-San—in about 1965.

Peter believes SANA should develop soy sauce terminology, standards, and analysis techniques. Importers would use these to protect themselves.

Mr. Kitani, as manufacturer, is Chico-San's fermented foods advisor. Chico-San now has a four-stage plan to make miso and shoyu. 1. Import bulk miso from Mr. Kitani and let it age in Chico. Adjust the ambient temperature by opening and closing doors and windows. 2. Make miso in Chico using koji imported from Japan under refrigeration. 3. Make koji in Chico. 4. Make shoyu in Chico. Address: Chico-San Inc., P.O. Box 810, 1264 Humboldt Ave., Chico, California 95927.

2611. Shurtleff, William; Aoyagi, Akiko. 1983. History of miso and soybean jiang. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 82 p. Feb. 21. Unpublished typescript.

• **Summary:** A comprehensive history of the subject. Contents: Introduction. Etymology. Part I: History of soybean jiang in China. Early Chinese non-soybean jiang. Early Chinese soybean jiang (100 B.C. to 599 A.D.). 600 to 1899. The Twentieth Century. Part II: History of soybean jiang/jang in Korea and Southeast Asia. Dissemination of jiang from China. Korea. Indonesia. Vietnam. Malaysia. Part III: History of miso in Japan. Introduction; origins not clear. Early non-soybean hishios (before 700 A.D.). The Nara period (710-784 A.D.); Ganjin 754. The Heian period (794-1160 A.D.). The Kamakura period (1185-1333). The Muromachi period (1336-1568). The Edo or Tokugawa period (1603-1867). The Meiji and pre-war periods (1867-1940). The postwar period, modern times (1941-1982). Part

IV: History of miso in Europe. Early European references (1597-1899). 1900-1949. 1950-1982. Part V: History of miso in the United States and Canada. Early developments (1896-1929). 1930-1959. Growth of interest in miso (1960-1982). Part VI: History of miso in other countries. India. Israel. Latin America. Address: Lafayette, California. Phone: 415-283-2991.

2612. Ebine, Hideo. 1983. Re: Dipicolinic acid and retirement from the National Foods Research Institute, Japan. Letter to William Shurtleff at Soyfoods Center, Feb. 22. 1 p. Typed, with signature. [Eng]

• **Summary:** Note: *The Book of Miso*, by Shurtleff and Aoyagi (1976) states (p. 26): "In 1972, a number of Japanese scientists doing agricultural research stimulated by Dr. [Shinichiro] Akizuki's writings discovered a substance in miso which they called Zybicolin. Produced by miso and natto yeasts, it has the ability to attract, absorb, and discharge from the body radioactive elements such as strontium. The discovery received front-page coverage in all of Japan's major newspapers." Yet Shurtleff never cited the actual article—in part because he learned of it just as *The Book of Miso* was about to go to press.

Director Ebine has tried to locate the article mentioned above but has not been able to find it—and he has never heard of it, although he has long been a miso research scientist. Zybicolin is probably "dipicolinic acid," which is found in miso and natto. and which has a strong combining activity to minerals including radioactive minerals such as strontium.

Ebine retired from the National Food Research Institute (NFRI) in March 1982 and immediately (in April 1982) began his present work as director of the Central Miso Research Institute. Address: Director, Central Miso Research Inst., Shinkawa 1-24-19, Chuo-ku, Tokyo 104, Japan.

2613. Nasuno, Seiichi. 1983. Re: N-nitroso compounds and nitrosamines in Japanese fermented soyfoods. Letter to William Shurtleff at Soyfoods Center, Feb. 23—in reply to inquiry. 2 p. [5 ref. Eng]

• **Summary:** "We have an official certificate from the National Institute of Health (NIH) of Japan to certify that the regular Kikkoman soy sauce is free from volatile nitrosamines on the basis of the examination of volatile N-nitroso compounds in a soy sauce product performed on January 23, 1978, at the NIH of Japan.

"The test was performed by a Shimadzu gas chromatograph equipped with an alkali-flame ionization detector and minimum detection limit for N-nitrosodimethylamine was 0.1 ng (1 ppb in soy sauce)."

"Nitrosamines are reaction products of nitrite and amines. Very small amounts of nitrite and amines were found in cereals such as rice, wheat and soybeans used as

raw materials for miso and shoyu making. Moreover, amino acids in shoyu competitively inhibit nitrosamines formation from nitrite and amines."

"In conclusion, we feel that the problem of nitrosamines in miso and shoyu is not serious and that miso and shoyu are quite safe in the viewpoint of cancer risks." Note: Five references are cited in the letter to document each point. Address: Director, Bioscience Lab., Kikkoman Corp., Central Research Laboratories, 399-Noda, Noda-Shi, Chiba-ken, Japan. Phone: 0471-24-1111.

2614. Pantry Supermarkets. 1983. Double coupons! (Ad). *Los Angeles Times*. Feb. 24. p. SG3.

• **Summary:** The section titled "Oriental foods" states: "Hinode natto (steamed soybeans) 5 oz.—49¢. Hinode Japanese tofu 19 oz.—59¢. Hinode kinugoshi tofu 12 oz.—59¢. Hinode Chinese tofu 20 oz. 59¢. Sisco koji miso 1 lb.—\$1.25. Kokuho Rose rice 15 lb. bag—\$7.99."

Note: The Pantry has 11 supermarkets in southern California: Pasadena (3), Duarte, Placentia, Arcadia, Santa Ana, Fullerton, Tustin, Costa Mesa, and Monrovia. Address: Los Angeles Co. and southern California.

2615. Shurtleff, William; Aoyagi, Akiko. 1983. History of Kikkoman. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 24 p. Feb. 26. Unpublished typescript.

• **Summary:** A comprehensive history of the subject. Contents: Introduction. Part I: Kikkoman in Japan. 1600's-1887: Mogi family starts shoyu (1754-1800), Kikkoman brand registered 1838, Tokyo Shoyu Co. new distributor 1881. The Noda Shoyu Cartel: How formed, bankruptcy of Tokyo Shoyu Co. in the 1880's, research lab and new technology 1900-09, 1910-1917: Arrival of the railroad in Noda in 1911 revolutionized transportation and provided mass distribution, early switch from water to rail, shoyu factory in Korea, miso sold in Korea and China, damaging competition, final struggle. The Noda Shoyu Co., Ltd., incorporation: Noda Shoyu Company founded 1918, history to 1920, strikes in 1923, reorganization in 1925, the 1930's and 1940's. 1947-1981: anti-monopoly hearings in the 1950's, start of U.S. promotion in 1956, socialism and internationalism in Noda in the 1960's, total figures for 1980-81, future. Part II: Kikkoman in the West. Introduction: Mostly U.S., the early years (1860's-1948). Preparing to establish roots (1949-1972): Advertising on U.S. television 1956, Kikkoman International Inc. established in San Francisco 1957, other branches, Leslie Salt Company (Oakland, California) bottled from bulk shipments from Japan (1968), Japan Foods Corp. acquired 1969. 1973-1981: Reasons for establishing first U.S. plant June 1973, new marketing approach to shoyu, 1973 cookbook (*The Kikkoman way of fine eating*, which uses the term "shoyu" throughout the book except in the recipes), two marketing decisions, change of name from shoyu to soy

sauce, use of chemical preservative, sales increase to number one by 1976, types of products, the future. Address: Lafayette, California. Phone: 415-283-2991.

2616. **Product Name:** Legume Tofu Manicotti.

Manufacturer's Name: Legume, Inc.

Manufacturer's Address: 91 Roseland Ave., Caldwell, New Jersey.

Date of Introduction: 1983. February.

Ingredients: Sauce: Crushed tomatoes, organic tofu, water, peanut oil, soy oil, garlic, onion, oregano, basil, parsley, pepper, San-J miso; For the pasta: high gluten enriched wheat flour, whole wheat flour, soy flour, DeBoles Jerusalem artichoke flour, wheat germ.

Wt/Vol., Packaging, Price: 16 oz carton.

How Stored: Frozen.

Nutrition: Per 8 oz.: 240 calories, 12 gm protein, 11 gm fat, 24 gm carbohydrates, 390 mg sodium.

New Product–Documentation: Ad in *Soyfoods*. 1983. Winter. p. 2. Spot in *Soyfoods*. 1983. Summer. p. 53, and 1984. Summer. p. 42.

2617. Leviton, Richard. 1983. Cold Mountain Miso expands [Miyako Oriental Foods in Los Angeles]. *Soyfoods*. Winter. p. 7.

• **Summary:** Leviton visited the company on 1 Oct. 1982, a week after the Grand Opening on Sept. 24, which celebrated the inauguration of their new 20,000 square foot miso factory in Baldwin Park, California. The new plant's capacity is 2,000 tons/year but current production, which is nearly all computer automated (except for packaging and koji development), and which runs 3 days/week with 6 workers, is about 600 tons/year.

Their former plant in Los Angeles had 5,500 square feet of production space and 5,500 square feet of storage space. Miyako was founded in 1976 by Mutual Trading Co. and Yamajirushi Company. Address: Colrain, Massachusetts.

2618. Shurtleff, William; Aoyagi, Akiko. 1983. Soyfoods industry and market: Directory and databook 1983. 3rd ed. Lafayette, California: Soyfoods Center. 112 p. Feb. No 28 cm. [191 ref]

• **Summary:** As of May 1982, America's four largest tempeh makers (in lb/week) are Pacific Tempeh (5,000, California, started 1980), Tempeh Works (4,250, Massachusetts, started 1979), Soyfoods Unlimited (3,000, California, started 1981), White Wave (1,900, Colorado, started 1979). About 17,455 lb/week of tempeh are sold by 15 companies in the USA.

Reviewed by Walter J. Wolf in *Cereal Foods World* (Oct. 1983). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2619. *Soyfoods*. 1983. Soyfoods mini-boom underway in Europe. Winter. p. 8-9.

• **Summary:** "This year we became aware that the kind of developments that took place in the U.S. in 1977-78 are now taking place in Europe with the sudden increase in the number of soyfoods companies," reports Bill Shurtleff of The Soyfoods Center. 'Historically speaking, this will probably be the most important event for the soyfoods industry in 1982. Europe is coming on strong and it's a tradition of soyfoods that goes back 130 years that is now being revived.'

"Most of the impetus for soyfoods in Europe apparently stems from the vigor of the macrobiotic community. Per Fruergaard started Tofu Denmark in Valby and has encountered legal problems regarding the use of nigari. In Paris, France, Bernard Storup purchased a Takai tofu system; Ab and Paulien Schaft are setting up a small plant in Baillestavy to make miso, shoyu, natto, and koji; in Ivry, Jean Luc Alonso's macrobiotic center, Traditions du Grain, prepares for tempeh production.

"In the British Isles, Paul Jones' Tofu Shop in London, England, has been active since 1981 while Community Health Foundation, also in London, promotes homescale tofu, tempeh, and misomaking. In Dublin, Ireland, Jane O'Brien gives tofu cooking classes, has published a tofu cookbook and is considering commercial production.

"The macrobiotic movement is strong in Belgium where de Brandnetel, a large Antwerp-based distributor of natural foods, operates a tofu shop in the rear of their retail store. Jonathan Company in Ekeren makes 3000 pounds of tofu weekly, along with seitan, mochi, soups, canned foods, and soymilk. Seven Arrows in Leuven is another small tofu shop in operation.

"In the Netherlands Manna was the first company to introduce soyfoods to the public and is now an important promoter. Manna's John Welters (who provided much of this information) lectures on homescale soy processing and reports interest and sales are rising as are the number of magazine articles on soyfoods. Manna itself markets tofu spreads and distributes a joint equipment price list with Takai Company of Japan. Witte Wonder in The Hague makes tofu, as does De Morgenstond in Bakkeveen, while Peter Dekker's Jakso produces tempeh. In Portugal, Unimave promotes soy as part of the macrobiotic diet and makes small amounts of tofu and soymilk; Jose Parracho in Setubal is starting a self-sufficient center involving tofu and tempeh production.

"In Soyen, West Germany, Wolfgang Furth-Kuby, who published *Das Tofu Buch* (by William Shurtleff) in German, is interested in tofu production at his Sojaquelle. Tofu producers are Swame [sic, Swami] Anand Svadesha in Furth-im-Wald, Thomas Kasas [sic, Karas] who installed a tofu system last summer at his Bittersuess [later Soyastern] in Cologne, and Alexander Nabben in Munich.

“In Sweden Tim Ohlund and Ted Nordquist have been operating Aros Sojaprodukter since early 1981 in Örsundsbro using a Takai pressure cooker system and vacuum packaging. In Rimini, Italy, Gilberto Bianchini makes tofu at Community Foods. And Switzerland is the home of four soy companies including Restaurant Sesam in Bern, an active macrobiotic center with homescale tofu and seitan production; Marty Halsey makes tofu in Nyon; Hans Opplinger produces tofu in Chan; and Verena Krieger operates Sojalade in Luzern (Lucerne).

“Sojalade, whose tofu output at mid-summer 1982 was 1000 pounds weekly, is a company launched mainly on the results of an article Ms. Krieger published (‘Yesterday Steak, Tomorrow Tofu’) in a Swiss Sunday magazine. Krieger then established her shop to meet the expected tofu demand stirred up by her article. Swiss national television ran a 30 minute feature on soybeans this year in which Krieger made a brief demonstration of 5 tofu dishes. ‘Since then tofu has been a favorite child of the media,’ she says, adding that tofu appeared in the pages of *Blick*, a mass market newspaper.”

Photos show: (1) European representatives at the international Soyfoods Come West conference in Seattle, Washington: Gilberto Bianchini, Marina Casazza (Italy); Joanna White (Switzerland); Kym Olsen (England); Wolfgang Furth-Kuby (W. Germany); Tim Ohlund (Sweden); Roger Kayes (England). (2) Ted Nordquist and Tim Ohlund of Aros Sojaprodukter, Sweden’s first tofu company.

2620. *Soyfoods*. 1983. Cottage soy industries thrive on Vancouver Island. Winter. p. 36-37.

• **Summary:** Wayne Jolley’s Sooke Soyfoods, which opened in early 1981, produces 1,800 lb/week of nigari tofu. Thistledown Soyfoods, run by Jan Norris, opened in October 1981. Each week the company produces 350 lb of tofu, 150 lb of tempeh (vacuum packed), and 75 lb of soy pate from okara. At Shin Mei Do Miso, Lulu and Yoshi Yoshihara have been making miso since 1979. They now produce 10,000 lb of 3 styles of miso each year. Metta Tofu is owned by “Ray Lipovsky, who might be North America’s original cottage tofumaker as he’s been coagulating soymilk with sea water since 1975... Besides producing 600 pounds of nigari tofu every week, Lipovsky is hot on the trail of Frozen Buddha, his multi-flavored line of frozen soymilk ice cream, already producing 360 gallons weekly.”

Also on the island in Victoria, though too large for the cottage scale, is Dayspring Soycraft Corporation, operated by Michael Hsieh. Hsieh, a trained dentist, and his brother, Steven, and their families, emigrated to British Columbia from Taiwan and decided to launch a pressure cooker tofu plant in 1982.

2621. Taira, Harue; Takagi, Hideo; Kokubun, K.; Koyama, S.; Hoshino, S.; Miyauchi, N. 1983. [Quality of soybean seeds grown in Japan. II. Differences in the chemical composition and suitability for food processing between upland and drained paddy field cultures / crops]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 41. p. 14-33. Feb. [33 ref. Jap; eng]

• **Summary:** The chemical composition and suitability for making tofu, miso, natto and cooked whole soybeans were investigated with 78 seed samples of 31 varieties which were grown in upland and drained paddy fields at five Agricultural Experiment Stations in 1980.

The qualities tested were chemical composition (moisture, protein, and oil content) and suitability for food processing as measured by weight of 100 seeds, weight increase ratio of soaked seed, germination ratio, solid matter content of soaking water, solid matter extractability, pH, color of soybean milk, weight increase ratio by steaming, moisture content, softness, and color of steamed seeds. Drained paddy field cultivation, as compared with upland cultivation, gave high moisture and heavy weight of 100 seeds, and low x color value of soybean milk and steamed soybean seeds.

From the results of contribution ratios, it was shown that the moisture content of soybean seeds was influenced by cultural conditions, whereas the chemical composition of protein and oil, and all the suitabilities for food processing were influenced by variety. Address: 1. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305; 2. Hokkaido Agric. Exp. Station, Hitsujigaoka, Sapporo, Hokkaido; 3. Tohoku National Agric. Exp. Station, Kariwano, Akita; 4. Hokuriku National Agric. Exp. Station, Joetsu, Niigata; 5. Niigata Agric. Exp. Station, Nagaoka, Niigata; 6. Ehime Agric. Exp. Station, Dogoichiman, Matsuyama, Ehime. All: Japan.

2622. *Toyo Shinpo (Soyfoods News)*. 1983. Issetai atari nenkan oyobi ikkagetsu-kan no hinmoku-betsu shishutsu kingan [Amount of money spent and amount of soyfood products consumed per household per year and per month in Japan, 1977-1982]. March 1. [1 ref. Jap]

• **Summary:** Gives figures for tofu, ganmodoki, natto, other, shoyu, miso, soy oil, and margarine. Tofu consumption is lowest in February and highest in August, followed by July, May, and June. Natto consumption is highest March then February, and lowest in August. Shoyu consumption is highest in July then May, and lowest in January then February. Miso consumption is highest in April then May, and lowest in January. Soy oil consumption is highest in July and lowest in January. Address: Japan.

2623. Welters, Sjon. 1983. Re: Brief history of Stichting Natuurvoeding Amsterdam and Manna Natuurvoeding B.V. (Manna Natural Foods) in the Netherlands. Letter to William Shurtleff at Soyfoods Center, March 2. 2 p.

• **Summary:** “Manna was started in 1971 by Adelbert and Wieke Nelissen with a few hundred guilders in a small garage where some natural food products were sold. One year later they gave it an official status by founding the Natural Foods Foundation Amsterdam [Stichting Natuurvoeding Amsterdam; this Manna started as a foundation, and Manna was their brand]. Their first store was on Rozenstraat in Amsterdam. Two years later a second store was opened and the first sourdough bakery in Holland opened. The name of the bread became ‘Manna.’ Soon after this a third and fourth store opened in other parts of Amsterdam while at the end of 1975 the distribution of bread, nutbutters, cereals and miso, tamari, shoyu, and seaweeds began all over the Netherlands. In 1976 it became clear that a warehouse should be rented. Meanwhile production grew and more and more stores carried Manna products. Again a new Manna store started. In 1977 the warehouse was moved to a bigger place. Another new store opened its doors. We began making tofu and were the first to do so with organic beans and nigari. Also soymilk and seitan were produced. In 1978 sales went steadily up. In 1979 two new stores were opened.

“Meanwhile the East West Center was founded by Adelbert and Wieke, promoting natural foods as part of a healthy and natural way of living. This was a great help for Manna. Two more stores opened in 1980 and 1981. In the beginning of 1982, Manna suffered from bankruptcy and was started one day later as Manna Natural Foods, a holding company mainly owned by the Foundation ‘Manna Natural Foods’ [Manna Natuurvoeding B.V.; B.V., pronounced Bay Fay, is an abbreviation for Besloten Vennootschap, which means a private company with limited liability]. A reorganization was necessary but the promotion and sales of quality natural foods went on.

“In 1983 Manna is going steady and probably will cooperate with other natural foods distributors to form one strong network of farmers, producers, distributors and retailers. The purpose will be to eliminate competition and put more energy into publications and promoting by cooking classes, radio and television programs and education.

“Soyfoods played quite an important role in the history of Manna because it was the soyfoods Manna promoted that made it different from the other health and natural food businesses. Because Manna is based on the macrobiotic view of life, miso, tamari, tofu and so forth were an essential part of the diet of the Manna people.

“Instead of the cheese, milk, yogurt (of which consumption is one of the highest in the Netherlands) we advise soyfoods as a healthy alternative. We did no business

in dairy foods. Soyfoods are the number one product to introduce in Netherlands. A great deal of sickness in the Netherlands is caused by the overconsumption of dairy foods, meat and eggs (and other animal products). From this point of view Manna is a unique company in Holland, even in the alternative natural foods business. This difference is a reason of conflict with them. Only by eating a diet which is based mainly on vegetable products such as grains, legumes, soyfoods, seaweeds, fruits and nuts, etc., can a healthy and peaceful world be created. No animals can be mistreated and no land wasted, or misused or destroyed.”
Address: Manna, Meeuwenlaan 70, 1021 JK Amsterdam-N, Netherlands.

2624. Hankin, Lester; Hanna, J. Gordon. 1983. Quality of tofu and other soy products. *Connecticut Agric. Exp. Station, Bulletin* No. 810. 4 p. March. [8 ref]

• **Summary:** This cooperative study by the Connecticut Agric. Exp. Station and the Connecticut Department of Consumer Protection analyzed the microbial and nutrient content of 17 soy products: 5 tofu products made by New England Soy Dairy (Greenfield, Massachusetts), Firm Organic Tofu, and Tofu Slices (Marinated and Broiled) made by Nasoya Foods (Leominster, MA), Soy-Moo soymilk sold by Health Valley Natural Foods (Montebello, California), Tempeh Burgers made by Soyfoods Unlimited (San Leandro, CA), Tempeh Burger made by Pacific Tempeh (Emeryville, CA), Tofu Lasagna with Sauce marketed by Legume, Inc. (Bloomfield, New Jersey), Tempeh made by Tempeh Works (Cambridge, MA), Genmai Miso distributed by Erewhon, Inc. (Cambridge, MA), Kome Miso distributed by Tree of Life (St. Augustine, Florida), and 3 tofu products made by The Bridge (Middletown, Connecticut). Ingredients of each product are given.

The study showed high levels of bacterial contamination in many of the products, much higher than for dairy products. Only 41% met the coliform bacteria standard of less than 10 per gram of product, 29% met yeast standard of less than 10/gm, 41% met the 10 mold standard of less than 10/gm, and only 12% met the standard for total aerobic bacterial count (less than 25,000/gm). In addition, soyfoods generally contained more fat than claimed.

This report had widespread repercussions for the soyfoods industry, which (in the short term) were negative. The authors had previously published studies on the microbiological quality of numerous dairy products.
Address: P.O. Box 1106, New Haven, CT 06504. Phone: 203-789-7272.

2625. Kawamura, Wataru. 1983. Re: Miso in America, and new edition of *The Book of Miso*. Letter to William Shurtleff at Soyfoods Center, March. 4 p. Handwritten, with signature and stamped seal. [1 ref. Jap]

• **Summary:** Mr. Kawamura, widely known in Japan as “Miso Sensei” (miso teacher), is the author of many books about miso and miso soup. He is deeply interested in the many different kinds of miso in Japan and their history. Address: 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan. Phone: 0466-22-1351.

2626. Taira, Harue; Taira, Hirokadzu; Fujinami, Hiroko; Matshita, Zenichi; Ebine, Hideo; Ushirogi, Toshizo; Fujimori, Ikuo. 1983. Daizu shushi no kansô shori hôhō to sono hinshitsu ni tsuite. VII. [Influence of dry treatment after harvest on quality of soybean seeds. VII. Quality of food processing and test for miso making]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 42. p. 18-26. March. [12 ref. Jap; eng]

Address: 1-2. National Food Research Inst., Ministry of Agriculture, Forestry and Fisheries, (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3. Central Miso Research Inst., Shinkawa, Chuo-ku, Tokyo; 4. Hokkaido Prefectural Central Agric. Exp. Station, Naganuma, Hokkaido 069-13.

2627. Sheraton, Mimi. 1983. Restaurants: Sushi and sashimi, the best in the city. *New York Times*. April 15. p. C1-2.

• **Summary:** This is a review of Hatsuhana, a Japanese restaurant at 17 East 48th St., between Fifth and Madison Ave. in New York City. “Natto, a combination of raw fish with an earthy cheeselike paste of aged soy beans, is wonderful whether you have it with a white-flesh fish, tuna, clams, squid or the most subtly flavored toro–fatty tuna. A sunny yellow vinegar sauce made of lemon juice, bean paste [miso] and sake is the basis of nuta, a salad made with plain or fatty tuna, white fish, clams or squid.”

“The eye-opening wasabi horseradish should be mixed into soy sauce before sushi and sashimi are dipped in, and lacy slivers of radish [daikon] add a nice contrast.”

2628. **Product Name:** Chico-San Lima Hishio. Finger-Lickin’ Miso (Dry Mix).

Manufacturer’s Name: Chico-San, Inc. (Importer). Made in Japan.

Manufacturer’s Address: P.O. Box 810, Chico, CA 95927.

Date of Introduction: 1983. April.

New Product–Documentation: Article in *Crackerbarrel*. 1983. April. p. 4. “Hishio: ‘Instant’ natural miso in seven days.” This is a dry mix. “To make use of Chico-San Hishio, one need only add soy sauce, water and raw vegetables, place the mixture in a covered jar, allowing it to sit in a warm or sunlit place for several days with stirring. Within four to seven days it should develop a miso-like aroma, and is ready to use.

“Hishio comes packaged in a dry form, a type of koji made from barley and soybeans which have been fermented for approximately sixty days.”

Spot in *East West Journal*. 1984. Jan. p. 69. “Do it yourself miso.”

2629. Leviton, Richard. 1983. The Westbrae story. *East West Journal*. April. p. 22-26, 28-29.

• **Summary:** An excellent history of Westbrae Natural Foods. Westbrae was founded in late 1970 by Robert Gerner, Kristin Brun, and Margaret and Bob Ortiz. The foursome secured an abandoned supermarket at 1336 Gilman Street and opened for business in Feb. 1971. Their main products were granola and dried pears. In 1971 Gordon Bennett, finishing a 2-year stint as a conscientious objector, was driving a Goodwill Industries truck in Berkeley while living at Zen Center. He stopped by one day at Westbrae for lunch, asked for a job, and soon found himself hired part time to sweep and move cases. In 1972 they started distributing foods and in the late fall of 1973 the group purchased their Gilman Street store and relocated the warehousing to a new 2,000 square foot building nearby at 1224 10th St., Berkeley, California 94710.

In Feb/March 1974 Gerner (then president and chairman of the board) went to Japan and traveled the country with guide and interpreter William Shurtleff (who was studying tofu in Japan) to search for quality sources of soy sauce, miso, and other traditional Japanese natural foods. About 9 months thereafter Westbrae began to import natural foods from Japan via Mr. Kazama of Mitoku. By late 1974 annual sales had reached \$2 million. Between June and Sept. 1976 the retail store at 1336 Gilman Street was renamed from Westbrae Natural Foods to Gilman Street Gourmet. In September 1977, Westbrae Natural Foods moved its warehouse and offices to Emeryville from Berkeley, into a much larger building. “Today Westbrae is a successful, confident, and growing \$7 million corporation of 25 employees at work in a bustling 50,000 square foot warehouse sandwiched between Oakland and Berkeley in Emeryville, California.” Gordon Bennett (whose photo is shown) is president. Over the years the company has had a strong interest in soyfoods. Address: 100 Heath Rd., Colrain, Massachusetts 01340.

2630. Makino, Jun. 1983. Imported from Japan: A visit to the Yamaki Miso-Shoyu Company. *Crackerbarrel (Chico, California)* 1(2):1, 6. April.

• **Summary:** Mr. Tomio Kitani is the company’s owner and a third generation master maker of soy sauce and miso. The factory is relatively small. It uses whole soybeans, organically grown locally, and does not pasteurize the miso. Mr. Kitani’s grandfather started the company over 58 years ago. He recommends that miso be aged for more than a year. Chico-San is now importing this miso to America.

Address: Chico-San, Inc., P.O. Box 810, Chico, California 95927.

2631. O'Brien, Jane. 1983. *The magic of tofu and other soybean products*. Wellingborough, England: Thorsons Publishers Ltd. 128 p. April. Illust. by Niall Morris and Clive Birch. Index. 20 cm. [6 ref]

• **Summary:** Written in large letters at the top of the cover: "The Best of Vegetarian Cooking." Contents. Foreword. Introduction (incl. tempeh, soy flour, miso, tamari). 1. Making your own tofu. 2. A word about the recipes. 3. Recipes. 4. Soymilk. 5. Other soybean products (Okara, gô, yuba, soynuts). 6. Soybeans as beans. 7. Food value of soyfoods. 8. History of the soybean. Further reading.

Jane was a soyfoods pioneer in Ireland. In the Introduction (p. 18-21) Jane explains that "I was frequently ill as a child, and on several occasions I was very near to death's door." Yet as she got older, she grew to enjoy gourmet food and gourmet cooking. The man who became her husband gave her the first book she read on natural foods. "As soon as I became aware that food contributed to the maintenance or destruction of health, I began a lifetime of experimentation. I changed from refined foods to whole foods, gave up eating red meat, studied macrobiotics, so much so that over ten years ago I went to Boston [Massachusetts] with two children under the age of four, and pregnant with a third, to study the subject, and I continued from there to develop my own system." Her husband, an actor, is now quite happy with her cooking, after "an austerity programme involving giving up meat, cutting down on and nearly eliminating dairy food, getting rid of sugar."

"I have been working on creating meals that are increasingly more healthful for over seventeen years now [since 1966], and I find it a fascinating study. It is wonderful to witness the vast improvement in my own health..." Her son Quinn is now 15 years old. Her religion is Baha'i. "In furthering my interest in natural foods, I have given cooking classes in Dublin [Ireland] for over ten years [since 1973], not steadily, but from time to time when there were people interested. In the early days of my cooking classes, I also imported the necessary foods: whole grains, beans, miso and natural soy sauce from suppliers in England as they were not available in shops here in Dublin. There was no other way of getting these foods for my family. During the cooking classes I sold much of the stock... That led to the beginning of Ireland's first natural food store which I started with my husband's patient assistance, but which we left to someone else for many reasons."

"Several years ago I began to use tofu and soyfoods and to include them in the cooking classes. Because I was so interested in learning more about them, I attended the soyfoods conference held in Illinois in 1980 and the one in Colorado in 1981... I think that I became so excited about

tofu, soymilk and soyfoods really because I had long been a lover of puddings, custard, and creamy toppings, often made with dairy foods. However, because I needed to cut down on my use of dairy foods, I had nearly eliminated all of those things from my diet. When I discovered that it was possible, not only to make tofu and soymilk successfully in my own kitchen, but to use it for very accurate substitutions of my childhood favorites which were far more healthful than the things I had eaten as a child, I was thrilled."

Note: On 9 November 1979 Mrs. Jane M. O'Brien (7 Woodside Drive, Rathfarnham, Dublin 14, Ireland), ordered books on tofu, tofu & soymilk production, miso, and tempeh from Shurtleff & Aoyagi at Soyfoods Center in California.

Talk with Jane O'Brien. 1980. July 13. She developed the many recipes in this book using soybeans that she imported from England to Ireland, starting in about 1980.

Letter from Jane O'Brien. 1983. May 28. This book was published in April 1983. "It is presently on sale in England but not yet here in Ireland." Address: 7 Woodside Dr., Rathfarnham, Dublin 14, Ireland.

2632. Schick, Rabbi Michael. 1983. *How Chico miso and soy sauce are made kosher*. *Crackerbarrel (Chico, California)* 1(2):4-5. April.

• **Summary:** The author, traveling from San Francisco with Jun Makino (director of imports for Chico-San Inc.), visited Mizoguchi Soy Sauce Inc. in Honjo/Kimitsu, Chiba prefecture, Japan, owned by Mr. Hideo Mizoguchi. The business is over 100 years old. He gives a description of the process for making miso and shoyu at the plant, illustrated by 3 photos. He then visited Meiji Seifun Co. in Fukuyama/Hiroshima and described the miso process. He certified all products kosher, for import by Chico-San. Address: Chico-San, Inc., P.O. Box 810, Chico, California 95927.

2633. *Sunset international vegetarian cook book*. 1983. Menlo Park, California: Lane Publishing Co. 96 p. April. Illust. 28 cm. Retitled *Vegetarian Favorites* in 1987.

• **Summary:** This book is by the editors of *Sunset* books and *Sunset* magazine; the supervising editor is Maureen Williams Zimmerman. A table titled "Choosing nutritiously" (p. 5) shows that soybeans are a good source of thiamin (B-1), niacin, vitamin B-6, folic acid, calcium, and iron. Another table titled "Protein partnerships" (p. 7) states that soybeans and soyfoods (soybean curd/tofu, soy flour, soy milk, and tempeh), like dairy products and eggs, have no limiting amino acid. Soy-related recipes include: Miso grilled mushrooms (p. 14; Japan). Golden tofu cauliflower soup (p. 34; Thailand). Greens & tofu in peanut sauce (p. 48; Thailand). Stir-fried tofu & vegetables (p. 50; Vietnam). Whole wheat & soy pasta (p. 52). Mandarin pancakes with spicy tofu filling (p. 70; China). Address: Menlo Park. Phone: 415-321-3600.

2634. Fardiaz, Dedi. 1983. Aspek pengolahan kedelai [Aspects of soybean processing]. Presented at Konsultasi Teknis Pengembangan Industri Pengolahan Jagung, Kedelai dan Ubi kayu (Technical Consultation on Industrial Development of Corn, Soybean, and Cassava Processing). Held 30-31 May 1983 at Kampus Darmaga, Bogor, Indonesia. [Ind]*

2635. Hesseltine, C.W. 1983. Food fermentation research and development. In: K.T. Achaya, ed. 1983. Proceedings of AHARA 82, First AFST (I) International Conference on Food Science and Technology. See p. 65-67. Held 23-26 May 1982 at Bangalore, India.

• **Summary:** Discusses the amounts of miso, shoyu, and natto produced in Japan. In Korea in 1978 an estimated 51,237 metric tons of soybean paste, 97,830 kiloliters of soy sauce, and 33,525 metric tons of gochujang (hot pepper paste) were produced. Also discusses the amounts of tofu, tempeh, and miso made in the USA. Address: USDA, Peoria, Illinois.

2636. *Manna Bulletin*. 1983. Miso en shoyusnoep [Miso and shoyu sweets]. 5(3):1. May. [Dut]
Address: Meeuwenlaan 70, Amsterdam, Netherlands.

2637. South River Miso Co. Inc. 1983. South River Miso [Mail order catalog and price list]. South River Farm, Conway, MA 01341. 6 panels. Front and back. Undated.

• **Summary:** Three similar versions of this very interesting hand-lettered leaflet/catalog are available. All bear the date of spring 1983. This was the company's first catalog, sent out to a few hundred people—according to a letter from Christian Elwell of 28 May 1992.

On the first two versions, the front consists of three panels; the company name, address, and date (spring 1983) appear at the top of the first (left) panel. Below that is the company logo (three waves in a circle) then a brief description 3 types of miso: Mellow barley (pearled barley, aged 2 months, 9% salt), Mellow brown rice (lightly polished California Lundberg short grain brown rice, aged 2 months, 7% salt), and Mellow Flint Corn (Longfellow flint corn, aged, 7% salt, cooked with hardwood ash & lime, puréed). “All made from organic grain and large seeded ‘Prize’ soybeans, deep well water, solar dried Mediterranean seasalt, and koji culture. Direct wood fired. Fermented naturally in wooden vats. Unpasteurized. Mellow miso must be stored at 40° [Fahrenheit] or less.”

On the second panel of version #1 is written: “Like a lightning rod man stands erect between heaven and earth. Simple food springs from the earth. May it cultivate in us its simplicity. Like wind-pollinated grain, we need no flowery show.

“Pure fire breathes on us from heaven. We bare ourselves before this universal One. Like the midday sun may we constantly fire each other’s spirit and nourish all our relations.

“South River Farm is the coming together of three families seeking common livelihood. Miso-making poises us at a focal point between earth’s food and heaven’s revolving seasons. Miso ferments sharing between us and you.”

On the second panel of version #2 is written: “Grain, fruit and seed one, has shared age long intimacy with man. Head erect, ears catching the wind, it puts on no flowery show for its fruition. Bowing in ripeness, it is the most abundant and sustaining of all foods. Together with legumes this provides a foundation for physical well-being.

“Miso is a living organism, greater than the sum of its parts. Although miso’s structure is more complex than any single food, as an external digestive system its essence is one of simplifying and returning to origin.” Inside of a horizontal-axis infinity sign we read in flowing words: Spring—sow aspiring. Summer—respiring grow. Fall—expiring mature. Winter—endure inspiring.” Then at the bottom: “Earth bears simple food, clothing and shelter. Heaven bares simple thought, expression and pattern. Man sets the elements of miso together. Day, season and year mature it to consummation. South River Farm is the coming together of three families seeking common livelihood. Cupped by the two hands of God, expansion and contraction may we share this flow with all our relations.” The third panels of versions #1 and 2, like the first panels, are identical. The top half, titled “Cost” gives a breakdown of the company’s costs plus a pie chart: Ingredients 17%, packaging 8%, shop overhead 20%, study and cultivation of sources 22%, livelihood [profit] 33%. The bottom half, titled “Shipping and ordering,” states: “Available in 9, 18, and 45 pound containers at \$12.60, \$25.20, and \$63.00 each, \$1.40 per pound. Mellow Flint Corn only in 9 pounds. Net shipping weights 10, 20, and 47 pounds. Prices are F.O.B. Conway, Massachusetts. We can not ship mellow miso between May 15 and October 1. We ship by UPS unless you specify otherwise. Please see rate chart and add charges accordingly. Checks payable to South River Miso.”

The back, which consists of one panel titled “Cooking with mellow miso,” contains five miso recipes.

On the third version, there is no mention of the three families. Panels 2 and 3 are merged into one, with poetical text quite like that of panel 2, of version 2. The cost panel has been moved to the back, and on it is the date: “Price list—Spring 1983.”

One of the earlier leaflets was sent by Anpetu Oihankesni in Dec. 1999. He writes: “The recipes on the flyer were written up and developed by Hannah [Bond]. I composed the logo... and did the calligraphy/printing. The text in the middle portion [second panel] was written by

Hannah and myself and edited by other folks. Hannah also had an expression which later flyers from the shop, after we left, continued to use—'Miso, wisely given, gives its own wisdom.'" Address: Conway, Massachusetts.

2638. Steinkraus, Keith H.; Cullen, R.E.; Pederson, C.S.; Nellis, L.F.; Gavitt, B.K. eds. 1983. Handbook of indigenous fermented foods. New York, NY: Marcel Dekker. ix + 671 p. May. Illust. Index. 26 cm. Microbiology Series, Vol. 9. [200+ ref]

• **Summary:** Contents: Foreword by E.J. Da Silva. Preface. I. Indonesian tempeh and related fermentations: Protein-rich vegetarian meat substitutes. II. Indigenous fermented foods involving an acid fermentation: Preserving and enhancing organoleptic and nutritional qualities of fresh foods. III. Indigenous fermented foods in which ethanol is a major product: Types and nutritional significance of primitive wines and beers and related alcoholic foods.

IV. Indigenous fermented amino acid / peptide sauces and pastes with meatlike flavors: Introduction. Soy sauces: Japanese shoyu (koikuchi, usukuchi, tamari), Chinese chiang-yu, Taiwanese soy sauce, Malaysian soy sauce—kicap, Indonesian soy sauce—kecap (a photo shows a bottle of kecap), Korean soy sauce, Taiwanese black bean sauce—inyu, Philippine tausi. Fermented soybean pastes: Japanese miso, Indonesian tauco, Korean doenjang and kochujang. Fermented fish sauces and pastes. Fish-soy sauce and paste (Malaysia; no indigenous names are given). Miscellaneous Oriental fermentations: Japanese natto (itohiki natto), Thai thua-nao, Japanese hama-natto [hamanatto] and related products, Chinese red rice—anka, ang-kah, or ang-kak, Chinese sufu, nyufu.

V. Mushrooms: Producing single cell (microbial) protein on ligno-cellulosic or other food and agricultural wastes. VI. General papers related to indigenous fermented foods: Contributions of the western world to knowledge of indigenous fermented foods of the orient, the importance of microbial genetics in indigenous food fermentations, new uses for traditional food fermentations, mycotoxin problems in indigenous fermented foods and new methods for mycotoxin analysis.

Less widely known fermented foods include: Idli, dosa/dosai, dhokla (with soy, 131-35), enjera (162), tef/teff (164), wot (165), hopper (173), kishra (175), lambic (179), ogi (with soy, 189-98), mahewu (203), gari (208), dahi (249-57), srikhand and lassi (256-57), laban rayeb, laban zeer, yogurt (257-59; cultured soy yogurt is mentioned on p. 616), liban, mast, mass, taw (260), tairu (with soy, 260-65), kishk or kushuk (267), Metchnikoff (266), trahanas or tarhanas (271-76), rabdi, jalebi (275), koumiss (276), kefir (277-80).

Alcoholic beverages and foods: Honey wine, mead, metheglin (305), tej (306), sugar cane wines, basi, bubod, binubudan (307), palm wine or toddy (315-28), pulque

(328-37), kaffir (344), tesguino (352), bouza (357), pito (358), busaa (365) sake (373-79), yakju and takju (379), tape = tapeh (381-400), ragi (381), tapuy (400), lao-chao (402), madhu (406), brem (408), tropical vinegar (410-14), nata (414-20), tea fungus (421), nuoc-mam (516-21).

Reviewed in Scientific American (Nov. 1983, p. 37), and in Bio/Technology (1984, p. 364). Address: Inst. of Food Science, Cornell Univ., Geneva, New York.

2639. Kanasugi, Goro. 1983. Tempe no hôkoku to setsumeï [Tempeh: Report and explanation]. *Zenkoku Shokuhin Shinbun (National Food News)* No. 453. June 1. p. 2. [Jap]

• **Summary:** Tempeh recipes developed and tested by Mr. Kanasugi include karinto, otsumami, subuta-style yakimeshi, curry rice, tempeh sauteed with vegetables or with pickles, gyôza, harumaki (spring rolls), croquettes, cutlets, agé balls fukumeni style, steamed bread, saka manju, egg bread, Kinzanji miso, Tekka miso, sanbaizu aenuta, jashiki-agé, mameita, Inari-zushi, norimaki, oden, fukumeni, shio mamemochi, ohagi, hijiki nikomi, salad, stew, etc.

In Japan it is very difficult to omit all of the meat from a traditional meat recipe, so Mr. Kanasugi leaves in 10-20% for flavor, and substitutes tempeh for the rest. His dream is to establish a chain of specialty tempeh restaurants in Japanese cities. He would like to ask a professional cooking teacher to develop some popular tempeh recipes suited to the needs and tastes of the people.

2640. Leviton, Richard. 1983. Notes from a visit to Eden Foods of Michigan. 19 p. June 4. Unpublished typescript.

• **Summary:** These notes were condensed into an excellent article in *East West Journal* (April 1984) titled "The organic Garden of Eden: A Michigan-based natural foods company stresses quality and fidelity." Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2641. Tara, Bill. 1983. Re: Comments on William Shurtleff's "History of Macrobiotics" manuscript. Letter to William Shurtleff at Soyfoods Center, June 9. 2 p. Typed, with signature on letterhead. [1 ref]

• **Summary:** "I would check the reference to Paul Hawken owning 50% of the stock in Erewhon. My reason for this is as follows: During this period of time there were many discussions which took place between myself, Paul, the Kushi's and others regarding an equitable distribution of stocks in the company to the management. No plan was ever finalized. Paul's desire was 50% for himself. Michio and Aveline were hesitant since that would have meant that future stock participation by management would be severely limited. It was my understanding that the upshot of these discussions was that Aveline would hold the shares in her name in trust until such time that an equitable proposal was put forward by management. In lieu of stock participation,

many employees including Paul, myself & Roger Hillyard were given cash bonuses and extensive time off from our work to pursue our own travels and study. (Paul went to Japan under such an arrangement, Roger traveled through the U.S. and I traveled through Europe.)”

“Paul did not ‘set-up’ Mitoku & Muso. They were already in operation and exporting. Paul did however, cement a good relationship with these companies and make more efficient arrangements for shipping and quality control.

“As per Paul’s shock regarding the shares. I can only say as stated above, plus the fact that what you want and what you have are two different things, if the shares had been legally his, they could not have been taken away and Paul could never be accused of having been ignorant of the law in business matters.”

“Erewhon in Los Angeles was started by myself and Aveline Kushi. I had moved to Los Angeles to set up a center there immediately after establishing a center in Chicago [Illinois] and getting the shop opened. The shop was opened in 1970 and our original purchase of miso and tamari were made through Chico-San. We later received our first direct shipment from Japan prior to Paul’s arrival. I was joined by Bruce Macdonald and we began distribution up the California coast as far north as San Francisco, distributing miso and tamari as well as some Japanese condiments and seaweeds to small co-ops and natural food shops. Our biggest customers were the co-ops in Berkeley and Fred Rohe in San Francisco.”

“What can I say regarding Paul’s impression of Erewhon in 1970? We were all younger then. My impression was that Erewhon was a very happy place to work at Farnsworth Street. There was a high degree of comradery [camaraderie] and a poor understanding of business. The words arrogant and dogmatic were words often used to describe Paul—rightly or not.

“Bill, I hope these comments are not in any way taken to be disparaging of Paul and his involvement in the natural foods movement. His energy and vitality combined with his sharp business sense was one of the main driving forces behind the wide distribution of Japanese foods. Combined with Michio’s educational work, this forged the beginning of the wide acceptance that we are now seeing for many of the traditional food items. It would be sad, I think, to allow Paul’s own personal frustrations to overly color what was an exciting and adventurous experience for all involved.”
Address: The Kushi Institute, P.O. Box 1100, Brookline, Massachusetts 02147. Phone: (617) 731-0564.

2642. **Product Name:** Tofu Delight Tempeh Salad [Curry, or Herb].

Manufacturer’s Name: Appropriate Foods, Inc.

Manufacturer’s Address: 137 New Hyde Park Rd., Franklin Square, Long Island, NY 11010.

Date of Introduction: 1983. June.

Ingredients: Organic tempeh, brown rice, miso, tamari, herbs, spices.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

New Product–Documentation: Catalog. 1983. June. In June 1984 changed to New York Soy Deli brand. Label. 1984. June. 1.5 by 3 inches. Black on orange. Distributed from June 1984 to June 1986.

2643. Edward & Sons Trading Co. 1983. “Go skinny dipping” (Ad). *New Age Journal (Boston, Massachusetts)*. June. Inside rear cover.

• **Summary:** This full-page color ad is for Miso+Plus. All Natural Dip Mix, in chive or jalapeno flavors. Contains a recipe for using the mix, plus a photo showing a bowl of dip in the middle of a plate of sliced vegetables and crackers. Note: This ad also appeared in the August issue of this magazine. The product is made in Japan and imported by Edward & Sons. Address: Route 1, Box 153, Saluda, North Carolina 28773.

2644. Gullo, Karen. 1983. Soyfoods consumption hits all-time high. *Vegetarian Times*. June. p. 12. [1 ref]

• **Summary:** This is a review and summary of *Soyfoods Industry Directory and Databook 1983* by Shurtleff and Aoyagi. 1982 USA production and retail sales figures are given for the following foods: Tofu (27,500 tons, \$50 million in 1981), tempeh (450 tons, \$2 million), and miso (750 tons). Four factors contributing to the growth of soyfoods are summarized. “Low-calorie convenience soyfoods products and frozen, meatless ‘heat and serve’ entrees will play an important role in soyfood’s entrance into the mainstream American diet... Dairy-like soymilk and soymilk shakes, yogurt and ice cream, tofu cottage cheese and tofu burgers will soon be low-cost, low-calorie alternatives to mainstream supermarket fare.”

2645. Herrmann, Karl. 1983. Ueber Sojabohnen und Sojaprodukte [On soybeans and soybean products]. *Ernaehrungs-Umschau* 30(6):175-79. June. [17 ref. Ger]

• **Summary:** Contents: Introduction, nutritional composition, amino acids in soy sauce. Unfermented soy products: Soymilk, tofu (*sojaquark*), aburage, kori-tofu, yuba, kinako. Fermented soy products: Soy sauce, miso (*sojapaste*), tempeh, sufu, natto. Address: Institut fuer Lebensmittelchemie, Hannover Univ., Wunstorfer Str. 14, D-3000 Hannover 91 [West Germany].

2646. **Product Name:** Miso Salad Dressing [Creamy Italian, French, or Miso].

Manufacturer’s Name: Old McNatural.

Manufacturer’s Address: Miami, Florida.

Date of Introduction: 1983. June.

Ingredients: Purified water, mild primary yeast, cider vinegar, mellow white miso.

Wt/Vol., Packaging, Price: 8 oz plastic bottles.

How Stored: Shelf stable.

Nutrition: 14 calories per tablespoon.

New Product–Documentation: Spot in Soyfoods. 1983. Summer. p. 54. “Fat free.”

2647. *Soyfoods*. 1983. Rural miso making: South River Farm Miso Company. Summer. p. 40-41.

• **Summary:** The South River Farm Miso Company resides on a 64 acre farm in Conway, Massachusetts. It is “under the joint familial ownership of Christian and Gaella Elwell, Anpetu and Hannah Oihankesni, and Don and Marcia Wheeler.” The company has been operating at the rate of 36,000 pounds of miso per 15 week cycle since November 1982. “They originally purchased the Ohio Miso Company in May 1980, then in June 1981 they laid the foundation for their new miso shop of 1,220 square feet (24-by-18 for production; 7-by-10 for koji incubation; 20 by 36 for storage). On October 25, 1982, with a \$60,000 investment and much contributed carpentry by the partners behind them, South River Farm held its dedication ceremony and in November they began producing woodfired traditional miso.” Veteran misomaker Thom Leonard was on hand as consultant during the first month.

South River produces a variety of misos. They are experimenting with corn, barley/black soybean and rice/black soybean.

A distinctive feature of the shop “is their unique masonry heat exchange system which cost \$5,000 and is the first such Finnish design heater in the U.S. Designed by Albie Barden and Jim Scialo of Maine, the bricklined heat exchanger provides heat for the recessed 80-gallon cauldron while also radiating heat to warm the shop in the winter months to 76°F.”

The shop is a pleasurable sight, visually, a meditative environment. Aesthetic perfection and harmonious design were priorities. Red tiles line the floor. The walls are sheetrocked and wood trimmed. “Evidence of South River’s degree of architectural sensitivity are the special ‘spirit holes’: half a dozen 9-inch holes in the floor, in both koji and production rooms.” Anpetu, who has lived with native Americans, explains that the holes allow the flow of Earth’s *chi*, or energy, into the shop. Each hole is covered with a loose wooden lid.

Photos show: (1) The miso shop seen from one side. (2) Don mixing the soybeans with a wooden paddle to cool them. (3) The bricklined heat exchange system around the cauldron, with Anpetu, Don and Christian at work in the background. (4) Don cools down soybeans. (5) Christian gathers loose koji grains in the incubation room. Koji trays are stacked high along one wall. A small heater is at one end of the room.

2648. **Product Name:** Westbrae Natural Instant Miso Soup [Shiro (White), or Aka (Red) Flavor Broth].

Manufacturer’s Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer’s Address: 4240 Hollis St., Emeryville, CA 94608. Phone: 415-658-7518.

Date of Introduction: 1983. June.

Ingredients: Powdered miso (rice, soybeans, sea salt), wakame seaweed, fu (wheat gluten), dried green onion.

Wt/Vol., Packaging, Price: 1.4 oz foil pouches containing 4 individual packets. Each packet makes 8 oz of soup.

How Stored: Shelf stable.

Nutrition: Per 10 gm.: Calories 35, protein 3 gm, carbohydrate 4 gm, fat 1 gm.

New Product–Documentation: Spot in Soyfoods. 1983. Summer. p. 53. Labels. 1983. 5 by 7 inches. Plastic pouch. Green, white, purple, red, black. Picture of cup of soup surrounded by vegetables. Back of package: “Deliciously natural. 35 Calories per serving. Conveniently packaged. Easy to cook. Sauces, dips, dressings...” Inside foil packets are 3 by 4 inches. Shiro: Purple and black on white with instructions on back. Aka: Red and black on white with instructions on back. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. A display caddy holds 12 pouches. Poster. 1984. March. Letter from Gordon Bennett. 1987. Oct. Gives date of introduction as 1983. Currently 5 varieties.

2649. **Product Name:** Pâté Wildwood.

Manufacturer’s Name: Wildwood Natural Foods.

Manufacturer’s Address: 135 Bolinas Rd., Fairfax, CA 94930. Phone: 415-459-3919.

Date of Introduction: 1983. June.

Ingredients: Lentils, whole grain bread, onions, carrots, celery, mushrooms, parsley, tomatoes, miso, tahini, safflower oil, sea salt, and spices.

Wt/Vol., Packaging, Price: 8 oz plastic tub.

How Stored: Refrigerated.

New Product–Documentation: Labels sent by Wildwood on their letterhead. 1983, undated. 2.75 by 1.75 inches. Self adhesive. Black and green on ivory. Silhouette of woods with birds. “Ready to eat Foods, Naturally. Perishable. Keep Refrigerated.”

2650. Chico-San, Inc. 1983. America’s first macrobiotic food company: What do we mean by first? (Ad). *East West Journal*. July. p. 13. Also in Whole Foods, July 1983.

• **Summary:** Chico-San describes itself as “A company built on a philosophy.” Address: P.O. Box 810, Chico, California 95927.

2651. Fukushima, Danji. 1983. Fermented soy foods in the United States. *INTSOY Series* No. 25. p. 117-19. B.J. Irwin,

J.B. Sinclair, and Wang Jin-ling, eds. Soybean Research in China and the United States (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** Although chemically hydrolyzed soy sauce is widely consumed, fermented soy sauce has an annual growth rate of 15%. La Choy and Chun King, the two largest producers of chemical soy sauce, are assumed to have a combined annual production of 20,000 kiloliters. Most of the fermented soy sauce is produced by Kikkoman Foods, Inc. and annual production has reached 19,000 kiloliters.

Soy sauce manufacturing consists of three main processes: koji making, brine fermentation, and refining. Major improvements in the soy sauce process are (1) high temperature short time cooking of the soybean flakes to increase the yield, (2) use of an artificial mutant of *Aspergillus sojae* which produces twice as much proteolytic enzyme, (3) use of automatic koji making equipment, and (4) use of *Pediococcus halophilus* and *Saccharomyces rouxii*, and proper temperature control during brine fermentation. Address: Kikkoman Foods, Inc., Walworth, Wisconsin.

2652. Guo, Xiang-ao. 1983. Research on heat denaturation of soy protein after solvent extraction, and traditional Chinese soy foods. *INTSOY Series No. 25*. p. 64-66. B.J. Irwin, J.B. Sinclair, and Wang Jin-ling, eds. Soybean Research in China and the United States (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** Solvent extracted soybean flakes and meals (moisture content 9.6%) were subjected to 80°C, 90°C, and 100-105°C temperatures for 15 or 20 minutes. The critical temperature for protein denaturation was 80°C. At higher temperatures, solvent-extracted soybean meal was denatured more rapidly than soy flakes. Preparation of the following traditional Chinese soyfoods was described briefly: Soy sprouts (*dou ya*), soybean jiang (*dou jiang*), soy nuggets (*dou chi*), soy sauce (*jiang you*), soy beverage (*dou jiang*), tofu (regular and soft, *doufu*), firm tofu (*doufu gan*), pressed tofu sheets (*doufu yi*), vegetarian chicken (*su ji*), fried tofu (*you-doufu*), fermented tofu (*doufu-lu*), and yuba (*doufu pi*). Address: Zhengzhou Grain College, China.

2653. **Product Name:** Heartsong's Tofu Herb Dip.

Manufacturer's Name: Heartsong Tofu.

Manufacturer's Address: Miami, Florida.

Date of Introduction: 1983. July.

Ingredients: Tofu, white miso, oil, vinegar, honey, garlic, parsley, dill, onion.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

New Product-Documentation: Soyfoods. 1983. Summer. p. 38.

2654. **Product Name:** [Kikkoman Instant Tofu Miso Soup (Soybean Paste Soup with Tofu)].

Foreign Name: Tôfu Misoshiru.

Manufacturer's Name: Kikkoman Corporation.

Manufacturer's Address: Noda 278, Chiba-ken, Japan.

Date of Introduction: 1983. July.

Ingredients: Powdered miso, dehydrated tofu, dried seaweed, monosodium glutamate, powdered yeast extract, powdered dried bonito, dehydrated leek.

Wt/Vol., Packaging, Price: 1.5 oz (30 gm). Foil packet containing 3 individual foil packets. Makes 2/3 cup.

How Stored: Shelf stable.

New Product-Documentation: Label. 1983. 5.5 by 7 inches. Plastic packet. Brown, red, green, and yellow on white. Full color picture of wooden bowl of miso soup on tray. Individual foil packets inside are 2.75 by 4 inches. Brown, black and red on white. Picture of bowl of soup on front, instructions on back. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. "Distributed by Kikkoman Corporation, Noda 278, Japan." Text on label in both English and Japanese.

Note: This is the earliest known commercial soy product that uses dried-frozen tofu as an ingredient.

2655. Norin Suisan-sho, Nosan Engei Kyoku, Hatasaku Shinko-ka. 1983. Daizu ni kansuru shiryô [Statistics concerning soybeans]. Tokyo, Japan. 157 p. 26 cm. [Jap]

• **Summary:** This yearly report, published by Japan's Ministry of Agriculture, Forestry, and Fisheries (MAFF), is packed with detailed statistics on soybean production, trade, and utilization in Japan. The table on p. 129 gives statistics on miso production, shipments, and use of raw materials by prefecture and for Japan as a whole. In 1981 Japan produced 575,782 tonnes of miso and shipped 578,610 tonnes. Raw materials used were 14,417 tonnes of domestically grown whole soybeans, 167,539 tonnes of imported whole soybeans, 103,611 tonnes of polished rice, 24,667 tonnes of polished barley, 476 tonnes of defatted soybean meal, 71,325 tonnes of salt, and 96 tonnes of cornmeal (used mainly in Nagano and Hyogo prefectures). The top 5 miso producing prefectures were Nagano (164,510 tonnes; 28.6% of Japan's total), Aichi (54,529), Niigata (38,156), Aomori (28,602), and Hokkaido (25,908). The source of these statistics is: Shokuryô-cho, Kakô Shokuhin-ka, Kome Mugi Kakô Shokuhin Seisan Dotai, Tokei Chosa.

The table on p. 130 gives similar statistics on shoyu for 1981. In 1981 Japan produced 1,190,618 kiloliters (kl) of shoyu and shipped 1,118,799 kl. Raw materials used were 6,473 tonnes of whole soybeans, 175,205 tonnes of defatted processed soybean meal (*dashi kakô daizu*), 177,407 tonnes of wheat, 204,777 tonnes of salt, and 80,642 kl amino acid liquid (*amino-san*, either purchased or made on site). The top 7 shoyu producing prefectures were Chiba (424,498 kl;

35.7% of Japan's total), Hyogo (203,374) Aichi (59,201 kl), Kagawa (45,430 kl), Fukuoka (36,575 kl), Oita (31,860 kl), Mie (30,354 kl), The source of these statistics is the same as for the miso statistics, above.

The table on p. 132-33 gives statistics on consumption of shoyu (in 100 ml), miso (100 gm), whole soybean foods (yen), tofu (cakes = *cho*), aburag  and ganmodoki (yen), natto (yen), and other soyfoods (yen) from 1963 (Showa 38) to 1981. Under shoyu, miso, and tofu is given the amount of money spent (*kingaku*), the quantity purchased (*s ry *), and the price. Annual shoyu consumption per household has decreased from 30.5 liters in 1963 to 16.3 liters in 1981. Annual miso consumption per household has decreased from 18.4 kg in 1963 to 12.1 kg in 1981. Tofu consumption per household has remained about constant, with 87.3 cakes in 1963 and 86.9 cakes in 1981. A breakdown is also given for each food by annual household income, with 5 income levels. One grouping is for all households (including those with a retired head of household or on welfare) and the other is only households with at least one working member. In each case, the higher the household income, the greater the consumption. In the case of tofu, for example, households with an annual income of less than 2.65 million yen consumed 76.1 cakes of tofu, while households with an annual income of more than 5.8 million yen consumed 99.3 cakes. Next is a breakdown by age of head of household. Generally, the younger the head of household, the less the consumption. In the case of tofu, households whose head was 24 years or younger consumed 55.5 cakes/year, while households whose head was age 60-64 consumed 95.4 cakes. The source of these statistics is the *Kakei Chosa Nenpo (S ri-fu, T kei-kyoku)*.

The table on pages 134-35 shows consumption per household by geographical area of the same foods as the previous table. Geographical areas include: all of Japan, all cities, cities with 50,000 or more population (broken down into large, medium, and small), cities with less than 50,000 population, towns and villages (*machi* and *mura*), 14 major regions, and large cities. Note: Statistics by prefecture are not given. In the case of tofu, the highest consumption is cities with less than 50,000 population (92.0 cakes), while the lowest is in medium-sized cities with more than 50,000 population (84.2 cakes). The regions with the highest tofu consumption are Tohoku (the northeast provinces; 101.9 cakes) and Chugoku (southwest provinces; 98.1 cakes), while the lowest two are Hokkaido (58.3 cakes) and Okinawa (72.3 cakes). The cities with the highest annual tofu consumption per household are Toyama city (118.9 cakes), Morioka city (118.4), Yamaguchi city (107.9), Matsuyama city (102.9), Fukushima city (102.8), Tokushima city (102.0), Fukui city (100.7). The source of these statistics is the same as for the statistics on p. 132-33.

Tables on pages 136-39 give a detailed nutritional analysis of soybeans and each of 23 soyfoods made in

Japan. The following minerals are listed: calcium, phosphorus, iron, sodium, and potassium. Vitamins: A (retinol, carotene, international units), B-1 (thiamine), B-2 (riboflavin), niacin, and C. Soybeans grown in Japan contain, on average, 35.3% protein and 19.0% fat, compared with 33.0% protein and 21.7% fat for soybeans grown in the USA, and 32.8% protein and 19.5% fat for soybeans grown in the China. Address: Tokyo, Japan.

2656. Ohsawa, Lima. 1983. "Tamari" ni tsuite [Re: Concerning the word "tamari"]. Letter to Bob Kennedy, President of Chico-san, Inc. in California, Aug. 24. 2 p. Translation by Akiko Aoyagi Shurtleff published in East West Journal. Sept. 1984, p. 14. [Jap]

• **Summary:** This letter was written to Bob Kennedy in response to his request for information on the origins of the use (actually misuse) of the term "tamari" by George Ohsawa and the macrobiotic movement. The translation is by Akiko Aoyagi of Soyfoods Center.

"In about 1958 or 1959 George Ohsawa gave a lecture at a university in Hamburg, West Germany. The lecture hall was packed with some 400 to 500 people. Among them was a young man whose name I don't clearly recall (perhaps it was Egel?). He was running an organic school in Germany. After the lecture he came to Mr. Ohsawa and earnestly enquired about various aspects of the Unique Principle.

"At that time there was also some talk about shoyu. As soon as he tasted this shoyu, he registered the word 'shoyu' as his own trademark and brand name, so that only he could sell it under this name. We came to know about this later and thought that it was a terrible thing for him to do. We were troubled by his action, for in Germany the law concerning registered trademarks was very strict. Therefore, in Germany, we were unable to call shoyu by its proper name, 'shoyu.' Out of sheer necessity, we decided to call shoyu by the name 'tamari.' After that, people in Europe started to call shoyu by the name 'tamari.'

"In Japan we call the liquid from soybean miso by the name 'tamari shoyu,' and it has been used in fine restaurants and for high class recipes. It is a type of shoyu.

"After this incident, shoyu came to be called tamari. People overseas started to become familiar with the product and its new name, and they came to be used regularly." Address: Tokyo, Japan.

2657. Belleme, John. 1983. Re: Problems at American Miso Co. Progress on white miso. Letter to William Shurtleff at Soyfoods Center, Aug. 30. 1 p. Typed, with signature on letterhead.

• **Summary:** After a year of confusion and misunderstanding, the problems at American Miso Co. may be nearing a final resolution. About three months ago, John hired a lawyer. A draft of the final contract between him and

the majority shareholder has been passed back and forth recently. He hopes it will be signed in the near future.

John has learned a great deal about white miso through constant experimentation—and very little from Japanese correspondence. He now understands the basic process for making unrefrigerated white miso. At present, Great Eastern Sun, the miso company's sole distributor, is selling about 50,000 pounds of white miso annually. It does very well unrefrigerated, but needs to be refrigerated for long-term storage. Address: Route 3, Box 541, Rutherfordton, North Carolina. Phone: (704) 287-2940.

2658. *Manna Bulletin*. 1983. Miso soep: een sterke buffer tegen kanker [Miso soup: a strong buffer against cancer]. 5(5-6):July/Aug. [Dut]

• **Summary:** An illustration shows a jar of Manna Miso. Address: Meeuwenlaan 70, Amsterdam, Netherlands.

2659. Mountain Ark Trading Company. 1983. Catalog—Summer 1983 [Mail order]. 120 South East St., Fayetteville, AR 72701. 30 p. 27 cm.

• **Summary:** This is a mail order catalog for macrobiotic whole foods, specialty cookware, cookbooks and books on natural healing, futons, furniture, etc. The owners of the company are Frank & Phyllis Head, Tom & Toby Monte, Bill & Carol Tims, and Joel & Wendy Wollner.

Concerning seitan and *fu*, we read: “Seitan (wheat gluten)—100% Wheat Protein (“gluten” is the name for wheat protein). (1) Mountain Ark's seitan—savory wheat gluten cutlets, freshly cooked in small batches; made from Deaf Smith's organic whole-wheat flour [Arrowhead Mills] and Ozark mountain water; seasoned with tamari, kombu, and ginger. Shipped frozen; customer assumes risk of spoilage April 1 through November 30. 8 oz or 16 oz tub. Price: \$4.75, not including postage. (2) Spicy seitan—as above with cayenne pepper and garlic added for zest, though not overly spicy. 8 oz or 16 oz tub. (3) Seitan condiment—juicy, chewy chunks of very concentrated wheat gluten cooked in Johsen Shoyu; not perishable. 6.35 oz. jar. Price: \$2.95, not including shipping.

Dried wheat gluten cakes (*Fu*)—use like pasta. Sifted wheat gluten jumbo rings (*Kuruma Fu*), Sifted wheat gluten sheets (*Shonai Fu*), Sifted wheat gluten rings (*Zeni Fu*), Whole wheat gluten rings (*Zenryu Fu*).

Talk with Joel Wollner. 1992. July 13. The first two types of seitan were made in Fayetteville by Hans Decoz, from the Netherlands.

Soyfoods Center also owns a Mountain Ark catalog dated Autumn 1983. 36 p. The company now has a toll-free number: 1-800-643-8909. Address: Fayetteville, Arkansas. Phone: 501-442-7191.

2660. Shurtleff, William. 1983. Report on soyfoods research trip to Hong Kong, China, Singapore, and Japan: May 29 to

July 10, 1983 (Log—unpublished). Soyfoods Center, P.O. Box 234, Lafayette, CA 94549 USA. 117 p. Aug. Unpublished log.

• **Summary:** Contents: Hong Kong: K.S. Lo and Vitasoy. May 29 (Sunday)—Plane from Hong Kong to Guangzhou City (Canton) in Guangdong (Kwantung) province. China: Guangzhou (May 29-30), Zhengzhou, Beijing, Harbin, Beijing #2 (Scurlock, Chen Xi-Hau, Joe Rakosky, Terrence Foley, local markets, vegetarian deli). Singapore: STS and Anders Lindner, Alan Yeo, American Soybean Association (Don Bushman, Sabrina Lee, Lars Wiederman).

Japan: Seiyu department store, Kibun, ASA Tokyo (Ms. Kojima), Kanji Tsuchiya, Japan Soymilk Assoc., Sano Rinji, Kikori, Prasad and natural foods, Goro Kanasugi and tempeh, Tsuchiya soymilk #1, Kikkoman at Noda (Yokotsuka #1, Mizunuma, Plant #6 modern, Yokotsuka #2, Goyo Gura, Noda Museum, Noda Library, Mr. Ichiyama), Morinaga, Kikkoman Tokyo, Japan Packaged Tofu Assoc., Natto statistics, Asahimatsu, Natto-tempeh meeting, Mr. Katoh, Nakano Masahiro, Mr. Iitsuka of Kikkoman, Daizu Shokuhin Kaihatsu, Tsuchiya #2, Nagayama, soynuts, oil association, kinako, Ishige, Mr. Mori and soy sprouts, Katoh, Arai-san, Kodansha, Nagayama and kinako, Dr. Nakano #2, Arai shoyu, Tsuchiya #3, Tenmi. Address: Lafayette, California.

2661. Shurtleff, William; Aoyagi, Akiko. 1983. The book of tofu. 2nd ed. Berkeley, California: Ten Speed Press. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Aug. 28 cm. [321 ref]

• **Summary:** Three parts of this new edition have been extensively revised and updated: (1) “Tofu Makers in the West” (p. 313-16) has been updated and now includes 310 tofu producers in the Western world (with the name, address, phone number, and contact person for each company), arranged by state or foreign country. This is the only tofu book containing such a directory.

(2) The “Bibliography” (p. 319-324) has been a greatly expanded and updated. It now contains 321 publications on tofu, including all known scientific and nutritional journal articles, the 33 books about tofu written in North America since publication of the first edition of *The Book of Tofu* in 1975, and other key articles and books about tofu from East Asia and Europe, the earliest from Europe dating back to 1613!

(3) An updated listing of “People and Institutions Connected with Tofu” in the U.S. and around the world, including researchers, major tofu manufacturers in Japan, trade associations, publications, equipment dealers, and tofu apprenticeship programs.

The “Glossary” (p. 325-27) has been condensed to make space for the expanded bibliography and back matter. There is a new page about the Soyfoods Center (p. 333). The page “About the Authors” (autobiographical) has been expanded,

and the photograph has been updated. "Sending Tofu to the Four Directions" (p. 335) and the inside rear cover have both been updated. Still contains 500 vegetarian recipes—both western and eastern style.

Note: A news release of 17 Aug. 1983 states: "The Book of Tofu, which introduced the Western world to tofu and inspired the founding of more than 200 tofu shops and soy dairies in North America, has sold 340,000 copies to date, making it the world's best-seller on this popular new 'protein source of the future.'" Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2662. Shurtleff, William; Aoyagi, Akiko. 1983. History of soyfoods in China. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 19 p. Aug. Unpublished typescript.

• **Summary:** A comprehensive history of the subject.

Contents: Introduction: Soyfoods widely used in all parts of China. Overview of Chinese food and diet. Animal products and soyfoods as protein sources in China. China's great cuisines and soyfoods. General characteristics of Chinese soyfoods industry. Information on soyfoods. Soy trade associations. Attitudes toward technology, modernization, and traditional soyfoods. Private enterprise, bureaucracy, and competing ministries. Availability of soyfoods. Address: Lafayette, California. Phone: 415-283-2991.

2663. Ito, Kiyoe. 1983. Soy beans as a source of protein in Japan. In: Ajia-Chiku Kokusai Kaseigaku Kaigi Hokoku (Proceedings of the International Asian Conference on Nutrition). See p. 60-61. Held Aug/Sept. 1983. [Eng]

• **Summary:** Rice cultivation began in Japan about 2,000 years ago. Buddhism was imported to Japan from China through Korea, and with it the prohibition against eating meat [of four-legged animals]. "Therefore, the diet and cuisine depended exclusively on rice, bean, vegetables, and fish. Especially, soy beans have been widely used as materials for plant protein foods such as miso (fermented soy bean paste), tofu (bean curd), shoyu (soy sauce), yuba (dried soy milk film) and others." Also describes the increasing westernization of the Japanese diet, especially after World War II. Address: Tokyo Gakugei Univ., Tokyo, Japan.

2664. McDougall, John A.; McDougall, Mary A. 1983. The McDougall plan. New Century Publishers Inc., 220 Old New Brunswick Rd., Piscataway, NJ 08854. 340 p. Foreword by Nathan Pritikin (8/83). General index and recipe index. 24 cm. [804* ref]

• **Summary:** This carefully researched and documented book and cookbook argues convincingly in favor of a vegan diet that uses no animal products, that is low in fats, calories, and sodium, and rich in complex carbohydrates. Pages 89-90 give the percentage of calories from fats in various foods under 3 categories: low-fat vegetable foods

(incl. oatmeal 16% of calories from fat, apple 9%, broccoli 9%), high-fat vegetable foods (incl. avocados 88% of calories from fat, almonds 82%, peanut butter 77%, sunflower seeds 76%, tofu 53%, soybeans 40%, wheat germ 27%, tempeh 25%), and animal foods (bacon 94%, t-bone steak 82%, frankfurters 80%, cheddar cheese 73%, egg 65%, tuna in oil 64%, milk [whole 3.5% fat] 49%, ice cream 49%, milk low-fat 31%, chicken [light-skinned] 18%, tuna in water 6%, buttermilk 3%, skim milk 2%).

Note: The author, however, argues repeatedly against the use of tofu and tempeh based on the "percentage of calories from fat" concept. His figures are correct but we and many nutritionists feel the basic concept, originally popularized by Nathan Pritikin, overlooks two key points: (1) the percentage of water in the food, and (2) the average serving size.

Page 198, in a section on rich [high fat] plant foods, states that tofu, tempeh, soybeans, textured vegetable protein (TVP), and miso contain excessive fat and most are high in calories. "The rich plant foods may account for a small portion of your daily food (less than 10 percent of your calories per day) but only after you have attained the level of health you are striving for. In general, these foods are more harmful than health-supporting. Never eat these foods if you have problems with your health that remain unsolved. If you begin using this group of foods and find that you are also gaining weight or getting back some of your old ailments, then stop eating these foods immediately."

Appendix I, p. 322-28 contains a table listing the percentage of calories from protein, fat, and carbohydrates in many foods. It also gives the calorie concentration (in calories per gram) for each food; foods with a low concentration aid in weight-loss programs. Tofu has only 0.72 calories per gram, and soy sprouts only 0.46; both are low. No soyfoods are used in the many recipes in this book.

Note: According to a colleague, John McDougall suffered a stroke at age 19, which led to much of his current interest in diet and health. He is not a Seventh-day Adventist. Address: 1. M.D. Both: Near Kailua Bay, Oahu, Hawaii.

2665. Shurtleff, William; Aoyagi, Akiko. 1983. The book of miso. 2nd ed. Berkeley, California: Ten Speed Press. 278 p. Illust. by Akiko Aoyagi Shurtleff. Index. Sept. 28 cm. [223 ref]

• **Summary:** Contents: What is miso? Preface to the second edition. Preface to the first edition. Acknowledgments. Part I. Miso: Savory, High Protein Seasoning. 1. Soybeans, protein and world hunger. 2. Miso as a food. 3. The miracle of fermentation. 4. The varieties of miso: Regular Miso: Rice miso (red / aka, light-yellow / shinshu, mellow red / amakuchi akamiso, mellow beige / amakuchi tanshoku, mellow white / shiro koji, sweet red / edo or edo ama-miso,

sweet white / Kyoto shiro miso), barley miso (karakuchi mugi, mellow barley / amakuchi mugi), soybean miso / mamé miso (Hatcho miso, soybean miso / mame miso, tamari miso). Special Miso: Finger lickin' miso / Namemiso (Kinzanji miso, moromi miso, hishio, namémiso, natto miso, goto miso), sweet simmered miso / nerimiso. Modern Miso: Akadashi miso, dehydrated or freeze-dried miso, low-salt / high-protein miso.

Part II. Cooking with Miso (400 recipes). 5. Getting started. 6. Recipes from East and West. Part III. The Preparation of Miso. 7. Making miso at home and in communities. 8. Japanese farmhouse miso. 9. The traditional miso shop. 10. The modern miso factory. Appendixes: A. A history of miso and soybean chiang. B. Other East Asian misos: Chinese chiang, Korean jang and Indonesian Taucho. C. The microbiology and biochemistry of miso fermentation. D. Miso manufacturers in the West. E. People and institutions connected with miso. F. Miso with seafoods, chicken, and meat. G. Measures, weights, and equivalents. H. So you want to study miso in Japan? I. Miso additives. Bibliography [223 references]. Glossary. About the authors (autobiographical). The Soyfoods Center.

In May 1993 a new printing of this book appeared, containing many small changes made by the authors. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

2666. Shurtleff, William. 1983. Notes from a phone talk with Richard Leviton concerning his trip across the USA in Sept. 1983 visiting soyfoods companies and giving talks. Lafayette, California. 3 p. Sept. Unpublished manuscript. • **Summary:** Discusses: Nasoya, New England Soy Dairy (doing radio ads and videos in supers; making 45,000 lb/week of tofu), Hinode tofu, Lotus Cafe, Penguin's (chocolate is their favorite soy ice cream favorite), Northern Soy and Wegman's, Vegetarian Times, Emperor of Japan to give Dr. Clifford Hesseltine a high medal at end November, Bob Davis to move to Nevada City, Kraft bought 15 Okita packaging machines. Richard Jennings, his marriage, Southwest Soyfoods, and chilled water as an alternative to pasteurization; his shop in Ecuador is now closed. Nasoya makes 22,000 lb/week of tofu with no outside money. David Mintz was on Good Morning America talking about Tofutti. The Farm (Summertown, Tennessee) now makes only liquid soymilk, no powder. Tom Leonard and Jim Hemminger are selling tofu to Community Mercantile. Leonard was in Arkansas in 1977, first batch of miso in Dec. 1978. Now makes 500 lb/week. Well Spring is a new miso maker in Colorado. White Wave is making 12,000 lb/week of tofu and doing well financially, as new frozen entrees & nut butters, tofu lasagne. Edensoy is outselling SanJ soymilk by 2 to 1. Time magazine Sept. 19 insert. American Dietetic Assoc. will list tofu as a good protein source. Jim Cooley of Lawrence, Kansas. He started making

tofu in 1977. Legume Inc.'s new product line out Oct. 5; lists names of each product. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

2667. American Miso Co. 1983. Agreement. Rutherfordton, North Carolina. 4 p. Oct. 1. Unpublished typescript.

• **Summary:** This agreement is effective as of 1 Oct. 1983. Barry Evans desires to purchase and John and Janet Belleme desire to sell 900 shares of common stock in the American Miso Co. The price for the shares and for future consulting and training services will be \$30,000. John will consult on a full-time basis for the first 3 months after the closing and on a part-time basis for the last 3 months. He will be responsible for training individuals to produce koji and miso and to operate the miso factory. Signed Barry E. Evans, John Belleme, and Janet Belleme. Address: Rutherfordton, North Carolina.

2668. Noda, Fumio; Hayashi, K.; Mogi, K.; et al. Assignors to Kikkoman Shoyu Company Ltd. (Chiba, Japan). 1983. Method of producing koji products. *U.S. Patent* 4,407,826. Oct. 4. 8 p. Application filed 17 Sept. 1981. Application also filed in Japan on 12 Sept 1978. [6 ref] Address: 1. Kamagaya; 2. Kashiwa; 3. Noda. All: Japan.

2669. Oda, Lorraine. 1983. The Hawaiian Miso & Soy Co. Ltd. Carrying on a family tradition. *Hawaii Herald*. Oct. 7. p. 1, 8, 17.

• **Summary:** William Higa's miso factory now makes 250 tons of Maru-Hi brand Shiro (white) miso and Aka (red) miso a year, plus 90 tons a year of miso-marinated butterfish (butterfish kasuzuke; black codfish marinated in sake lees). He took over the family business in 1956. William's father, George Taru Higa, started the business in 1936. It moved from North School Street, to Iwilei Rd., then near Vineyard Blvd., before settling in 1946 in the industrial area of Kalihi.

Photos show: (1) The original Yamaju Shoyu & Koji Miso Co. factory in 1938, makers of Shiro Koji Miso and Yamaju Shoyu. Standing by wooden kegs of miso are the founders Henry, Shinyei, and George Taru Higa. The company sign appears clearly over the factory door. Long, dark automobiles from the 1930s are parked at the left and right. (2) William Higa standing inside an air-conditioned warehouse; bags of Iowa soybeans are stacked up to the roof behind him. (3) Five hundred pounds of rice are cooked at a time. (4) Soybeans are washed in a rotating steel cylinder, then soaked in steel barrels. (5) A large machine mixes cooked soybeans with cultured rice (koji) and salt. (6) The mixture is ground to a paste. (7) Women pack and weigh containers of miso. (8) Women prepare butterfish misozuke. Address: Honolulu.

2670. Brody, Jane E. 1983. Assessing what is good for you and what is not. *New York Times*. Oct. 12. p. C1, C8.

• **Summary:** Those who eat wisely “can expect an improvement in well-being and a decreased risk of developing such diet-related disorders as heart disease, cancer, high blood pressure, and obesity.” But “Myths abound in the health food industry and, experts, say, many believers are being hoodwinked.” Discusses: Sweeteners, raw foods, salty seasonings (including miso and soy sauce), granolas, snacks and candies, nuts and seeds (including peanut butter), oils (cold-pressed oils contain more vitamin E but they become rancid more quickly), “health” foods high in fat, yogurt and frozen yogurt, herbal teas, and pastas (including those enriched with soy flour).

“A tablespoon of soy sauce contains about half a teaspoon of salt. Tamari sauce is hardly less salty than ordinary soy, but Kikkoman makes a reduced-salt soy that has 47 percent less salt than regular soy. Miso, another popular health-food flavoring, contains nearly as much salt as soy sauce. Domestic soy sauce is generally much saltier than imported brands.”

2671. **Product Name:** N.Y. Miso [Mellow White, Red, or Barley; 1 lb., or Bulk].

Manufacturer’s Name: Appropriate Foods, Inc. (Marketer-Distributor).

Manufacturer’s Address: 137 New Hyde Park Rd., Franklin Square, Long Island, NY 11010.

Date of Introduction: 1983. October.

New Product–Documentation: Catalog. 1983. June.

2672. **Product Name:** [Miso].

Manufacturer’s Name: Communante de l’Arche.

Manufacturer’s Address: La Boire Noble, 34260 Le Bousquet d’Orb, Herault, France.

Date of Introduction: 1983. October.

New Product–Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2673. Hesseltine, C.W. 1983. The future of fermented foods. *Nutrition Reviews* 41(10):293-301. Oct. [20 ref]

• **Summary:** Contents: Advantages of food fermentation, factors having an adverse effect on the use of fermented foods, nutritional and economic data on some fermented foods, future changes in fermented foods, factors that may lead to growth in the use of fermented foods (scientific interest in fermented foods, prevention of food poisoning, fermentation and increased shelf life, improvement of the physical properties of the product, interest in natural products of plant origin, modification of the substrate, interest in more healthy food, necessity of increased consumption of plant materials as population increases, cultural and religious grounds, and migration of people since World War II). Summary. Contains considerable

information on fermented soyfoods. Address: NRRC, Peoria, Illinois.

2674. **Product Name:** [Leguvito Miso].

Manufacturer’s Name: Industria & Comercio de Molhos Leguvita Ltda.

Manufacturer’s Address: Rua Heliotropos 595, Mogi das Cruzes, S.P., Brazil. Phone: 469-0320.

Date of Introduction: 1983. October.

New Product–Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2675. **Product Name:** [Miso].

Manufacturer’s Name: Jacquot Roland.

Manufacturer’s Address: 10 Rue Bretagne 91390, Ris Orangis, France.

Date of Introduction: 1983. October.

New Product–Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2676. **Product Name:** [Miso].

Manufacturer’s Name: Les Sept Marches.

Manufacturer’s Address: Les Cruettes, Chemin Des Mouille, Poisy 74330, France.

Date of Introduction: 1983. October.

New Product–Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2677. Leviton, Richard. 1983. The market boom for soyfoods in the United States. Paper presented before the Euvepro General Assembly, Parma, Italy. Oct. 11. 13 p. Unpublished typescript on Soyfoods magazine letterhead..

• **Summary:** An excellent overview of the subject, presented with color slides. Contents: Introduction. The U.S. soyfoods industry and market. Eight reasons for the soyfoods boom in America. New U.S. soyfoods products. Ten trends in the soyfoods market. The European soyfoods boom (what it is and 4 steps to expand it). Conclusions. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2678. Leviton, Richard. 1983. The soy deli case. *Whole Foods (Berkeley, California)*. Oct. p. 27-28.

• **Summary:** “The Hinode Tofu Company of Los Angeles recently propelled the industry years by running a series of full page, full color ads for their branded tofu in regional editions of *Good Housekeeping*, *Weight Watchers*, *Runner’s World*, *Bon Appetit*, and the *Los Angeles Times* (circulation: one million). Their ad included a 15¢ discount coupon (eight million were printed in total). Edward & Sons has been advertising its Miso-Cup instant soups and Miso+Plus Chive and Jalapeno dry miso dips in national trade and consumer publications. And Farm Foods, with their expanding line of Ice Bean soy ice creams (hard packed and

soft-serve) recently launched a cooperative advertising and discount program in cooperation with retailers..."

The Real Food Store on Food Store on Polk Street in San Francisco has introduced what is probably the first distinctly labeled soy case. It consists of a self-standing reach-in cooler filled with about 34 different soyfood products, from bulk and packaged tofu to soy milk and tempeh burgers.

"At press time, Bread & Circus, a leading natural foods retailer in Boston, was planning a week-long soy promotion in cooperation with a half dozen Bay State producers... Elsewhere, Tree of Life, Florida's \$35 million distributor and manufacturer, designated August as Soyfoods Month and ran promotions in their 60-page monthly newsletter sent to their 2,000 accounts. Soyfoods were presented as that month's 'Super Specials' with 'deep pocket discount' for retailers, reports Morris Shriftman, vice president." Address: Colrain, Massachusetts.

2679. Leviton, Richard. 1983. Soyfoods in your kitchen: The variety is infinite! *Your Good Health: Review & Digest* 1(6):16-18. Oct.

• **Summary:** An introduction to tofu and tofu products, tofu main dishes, tofu desserts, tempeh, miso, soysage, "green soybean pods in plastic bags," soy nuts, natto, hamanatto, and yuba.

Gives recipe names and ideas for each soyfood type, but no actual recipes. Concludes with the thought: "If you remember this diversity of applications of tofu and tempeh... never again will you comment, 'Tofu is nice but it's just a bland white block.'" Address: Colrain, Massachusetts 01340.

2680. Mandoe, Bonnie. 1983. Savory meatless soups. *Bestways*. Oct. p. 88-89.

• **Summary:** Contains recipes for: Miso broth. Curried miso soup. Miso minestrone.

2681. **Product Name:** [Miso].

Manufacturer's Name: Maruviti.

Manufacturer's Address: Rua Ibituruna 264, Jabaquara, Sao Paulo, S.P., Brazil. Phone: 275-4533.

Date of Introduction: 1983. October.

New Product-Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2682. **Product Name:** [Marutaka Miso].

Manufacturer's Name: Masakazu Takai.

Manufacturer's Address: Rua Venceslau, Brazil, S/N C.P. 136, Ribeirao Pires, S.P., Brazil. Phone: 459-3303.

Date of Introduction: 1983. October.

New Product-Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2683. **Product Name:** [Miso].

Foreign Name: Miso.

Manufacturer's Name: Sakura-Nakaya Alimentos.

Manufacturer's Address: Rua Ordenacoes 151, C.P. 16131, Sao Paulo, S.P., Brazil. Phone: 295-4117.

Date of Introduction: 1983. October.

New Product-Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2684. **Product Name:** [Miso].

Manufacturer's Name: Soy Joy.

Manufacturer's Address: Chemin De La Praelz 1, Nyon CH-1260, Switzerland. Phone: 022-619-312.

Date of Introduction: 1983. October.

New Product-Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255. Marty Halsey runs the company.

2685. **Product Name:** [Kikko Miso].

Manufacturer's Name: Takai & Cia Ltda.

Manufacturer's Address: Estrada de Suzano a Ribeiro Pires Km 11. Vila Idelandia Suzano, S.P., Brazil. Phone: 476-1447.

Date of Introduction: 1983. October.

New Product-Documentation: Shurtleff & Aoyagi. 1983. *The Book of Miso*. 2nd ed. p. 255.

2686. Erewhon Mail Order. 1983. Erewhon. Natural foods mail order catalog. Brookline, Massachusetts. 16 p. Nov. 1. Catalog and price list.

• **Summary:** This is a new mail order catalog, whose prices are effective from 1 Nov. 1983. On the front cover is a woodblock print of two wooden barrels, a wooden tub, two sacks of corn, a sheaf of wheat, several ears of corn, and a scythe. Erewhon is located at 26 Washington St. in Brookline Village—also the home of Erewhon Mail Order. There are retail stores at 342 Newbury St. in Boston and 1731 Massachusetts Ave. in Cambridge. Products grown organically, without chemicals, are marked with the code "OG."

Contents: Whole grains & cereals (incl. Erewhon granolas). Flours. Pastas. Beans (incl. azuki beans, black soybeans from Japan, yellow soybeans from Minnesota). Seeds, nuts & dried fruit (incl. alfalfa seeds, sesame seeds, and tamari roasted nuts and seeds). Sea vegetables. Misos and tamari soy sauces. Japanese macrobiotic specialty products. Condiments, vinegars & sauces. Sea salts. Erewhon vegetable oils. Baking & home products (incl. koji rice for making amasake and miso, nigari for making tofu, tempeh starter). Sweeteners (Yinni rice syrup, barley malt, maple syrup, clover honey, wildflower honey {unfiltered}). Erewhon nut butters (Almond, cashew, peanut, sesame, sunflower). Fruit spreads. Snack foods. Sweets. Perishables (incl. bread, mochi, produce, amazake, tempeh). Beverages.

Supplements. Natural cosmetics & body care. Cookware & appliances. Books & publications. Ordering & shipping information. Zone & shipping charts. Address: 236 Washington Street, Brookline, Massachusetts 02146. Phone: 1-800-222-802 or (617) 738-45168.

2687. Shurtleff, William; Aoyagi, Akiko. 1983. George Ohsawa and the macrobiotic movement: History of work with soyfoods. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 46 p. Nov. 10. 28 cm. Unpublished typescript. [92* ref]

• **Summary:** A comprehensive history of the subject. Contents: Introduction: Acknowledgement of Ron Kotzsch. The roots of macrobiotics: *Yellow Emperor's Classic of Internal Medicine*, Shinto classics, Ekiken Kaibara (1630-1714), Nanboku Mizuno (late 1700's-early 1800's), Sagen Ishizuka (1850-1910), Manabu Nishibata. The life of George Ohsawa (1893-1966): To Paris 1929-36, return to Japan and World War II, Internationalism 1946-53, ran school Centre Ignoramus, "world journey" 1953 to India, Africa, then Paris, started Muso Shokuhin (macrobiotic food company) in Osaka, Japan, in 1959, work in Europe 1956-66, earliest reference seen to soy (miso) in 1956, first visit to New York City Dec. 1959, post-visit institutions, second visit 1960, first American macrobiotic summer camp on Long Island, exodus to Chico, California, Aug. 1961 to escape feared nuclear war, establishment of Chico-San, move of Michio and Aveline Kushi to Boston in 1963, *Zen Cookery* 1963, *Zen Macrobiotics* second edition 1965, growth of the movement, Beth Ann Simon's death blamed on macrobiotics in 1965, response of U.S. Food and Drug Administration is to close N.Y. Ohsawa Foundation, Ohsawa's general macrobiotic teaching, view of Western civilization as one in crisis, with fundamental biological change required to improve it, death in 1966 in Tokyo at age 72 of cardiac failure, seen as sage by his followers, seen as inconsistent crackpot by his critics, work carried on by wife Lima and by his students. Development of macrobiotics in Boston: Kushi's lectures and classes from 1965, early food sales from house, Erewhon's start in 1966 and subsequent growth, establishment of organic suppliers in the U.S., first imports from Japan 1968, 1970 natural foods boom, National Food Distributors Association, *East West Journal*, Autumn Press founded in Japan by macrobiotic student from Boston, Boston institutes, centers, and foundations from 1972 on, increasing popularity of soyfoods (tofu, tempeh, and miso) in Boston, Erewhon from 1973 to bankruptcy in 1981 and sale to Ronald Rossetti in 1982. Development of macrobiotics in New York City: Void after departure of Aihara group and Kushis, establishment of Infinity Foods in mid-1960's, Michel Abehsera's restaurants, cookbooks, and tour. Development of macrobiotics in California: Influence of Chico-San on natural foods movement to 1970, Lundberg rice 1968-69,

Yamazaki miso and shoyu 1970, 1972 fire in Chico-San warehouse, educational activities and institutions, growth of Chico-San, Noboru Muramoto. Nutritional views of macrobiotic diets: General critical attitude from 1965 to 1977, not countered by macrobiotic leaders, scientific studies pro and con, specific critique of the diet, turnaround in attitude since 1977 (*Dietary Goals* published by U.S. Senate's McGovern Committee), Dr. Mendelsohn, Nathan Pritikin, cancer cures and Anthony Sattilaro (1980). Macrobiotics in Europe and Latin America: First European company Lima N.V., other distributors, centers, publications, tours, active in South America since 1954. A major contribution: Type of overall influence on soyfoods, number of followers in 1981. Address: Lafayette, California. Phone: 415-283-2991.

2688. Shurtleff, William; Aoyagi, Akiko. 1983. George Ohsawa and the macrobiotic movement: Noboru Muramoto (Document part). Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 46 p. See p. 39-40. Nov. 10. 28 cm. Unpublished typescript.

• **Summary:** "In June 1971 Noboru Muramoto emigrated to America from Japan and lived with the Aiharas in San Francisco at GOMF. In Japan he had studied Chinese literature and philosophy at Tohoku University and Kanazawa University, then began his own study and practice of herbal medicine. He had begun studying Ohsawa's writings in 1942, then studied with Ohsawa after 1964, while running a family business cleaning the cotton from futons. In 1973 he gave a series of lectures in New York which were published that year as the popular book, *Healing Ourselves* (Avon/Swan House). Many uses of miso and natural shoyu were given; soybeans and tofu were not recommended in the book, except that tofu was used in making poultice-like 'plasters' for use in healing. In 1974 Muramoto started Rising Sun, a macrobiotic storefront containing the Herb Tea Co. in San Francisco. Here he gave classes on making miso and shoyu. In November 1976 he acquired Top of the World Ranch on 140 acres of land near Glen Ellen, California, and established Asunaro Institute, a residential program of macrobiotic studies. He also published a newsletter 'Asunaro Notes.' At Asunaro he set up a regular shop for making miso and shoyu, complete with a nice koji incubation room. Many unique and American-style misos were developed, including some made with peanuts, garbanzos (chickpeas), azuki beans, and even natto. A number of Americans apprenticed at the miso-shoyu school. A nice article about the school, 'Making Miso in America,' appeared in the *East West Journal* (Lachman 1978). In March 1979 Muramoto displayed his miso and shoyu equipment and samples of his products at the famous New Earth Exposition in San Francisco. He also sold these products at Rising Sun, and some customers swore that they

were the best in America.” Address: Lafayette, California. Phone: 415-283-2991.

2689. Bates, Cynthia. 1983. Re: Thanks for new editions of *The Book of Tofu* and *The Book of Miso*. Letter to William Shurtleff at Soyfoods Center, Nov. 25. 2 p. Handwritten, with signature on letterhead.

• **Summary:** Cynthia would like to make some miso this winter in some big wooden barrels, but they are moving the tempeh shop, so they’ll have to wait and see. Address: 156 Drakes Lane, Summertown, Tennessee 38483. Phone: (615) 964-3584.

2690. Baldwin, Marjorie V. 1983. Re: Publications on aflatoxins in miso, soy sauce, and koji. Letter to William Shurtleff at Soyfoods Center, Nov. 27. 2 p. [4 ref]

• **Summary:** Most of these articles are cited in *Chemical Abstracts*. The earliest one was published in 1977. Address: M.D., Journal of Health & Healing, P.O. Box 109, Wildwood, Georgia 30757.

2691. Leviton, Richard. 1983. Long summary of trip to Europe sponsored by the American Soybean Association (Interview). *SoyaScan Notes*. Nov. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Discusses: Euvepro in Italy, ASA in Italy, Alpro / Vandemoortele, British Arkady, the confusion of mung beans and soybeans, tofu made from soy protein isolates that doesn’t develop a spongy texture when frozen, regulatory restrictions, Bernard Storup, tofu burgers, Prolait, Le Bol en Bois, ASA soybean program in England, desire in Eastern Europe for more meat, the many small private businesses in Hungary, Soyana’s excellent products (Daenzer makes 5,000 lb/week of tofu in Switzerland), the Reformhaus chain, Vietnamese tofu shop in Dornach, less refrigeration at the distribution and retail levels in Europe has led to new packaging, soyfoods have started to appear in the big international food trade shows in Europe (e.g. ANUGA). Witte Wonder opened in 1981, now makes 1,000 lb/week of seitan. Cauldron Foods (UK) makes mostly tofu burgers, and has a lot of good technical innovations such as control panels. Cauldron also makes a fermented tofu spread. Dragon & Phoenix (UK) makes several tons of tofu a day. In July Wolfgang Furth-Kuby and Lucas Kelterborn (Germany) published the first issue of a European soyfoods newsletter titled *Rundbrief*. Paul Jones (UK) has 2 plants and makes 5,000 lb/week of tofu. One man from Cauldron Foods was Paul Jones’ original partner. Full of Beans also makes miso.

Oct. 28. “I have an all morning meeting at ASA’s headquarters in Brussels, Belgium, with Dennis Blankenship, Rita Batens, Roger Leysen, and Michael Martin. It is proposed that I chair the 1984 First European Soyfoods Conference to be held in late September, probably

in Amsterdam. ASA agrees to be a sponsor and to help secure another 6 or so sponsors. ASA also agreed to finance the production and mailing of a bi-monthly European Soyfoods Newsletter.” Address: Colrain, Massachusetts.

2692. Elwell, Christian; Elwell, Gaella. 1983 Re: About South River Miso Co. Letter to friends. 1 p. Undated. Handwritten.

• **Summary:** In the upper right corner is a logo showing three waves in a circle. This undated letter reads: “South River Miso Company is a family business/service located at our farm by the South River in the Pioneer valley region of western Massachusetts. We are a continuation of the Ohio Miso Company founded by Thom Leonard and Dick Kluding in 1979. Our shop is small, the equipment simple, the process traditional and labor intensive. Because we choose to be a small shop, we can practice miso making as a craft, continuing the tradition of centuries, always mindful that we do not, in fact, make miso, but merely do our best to provide the ideal conditions for the miso to ripen and mature.

“We use organically grown, large-seeded soybeans. Our short grain brown rice is organically grown by the Lundberg brothers of Richvale, California. The organically grown barley is lightly polished, rather than being completely stripped of its bran as is commercial pearled barley. These, plus selected varieties of solar dried sea salt, deep well water, and *Aspergillus oryzae* spores are the only ingredients used in our miso.

“At the heart of our shop is a massive masonry stove where all the cooking is done in a large cauldron heated directly by wood fire. The first step of miso making is transforming the grain into sweet, fragrant koji. This is done by inoculating steamed rice or barley with spores of *Aspergillus oryzae* and allowing the pure strain of mold to grow on the grain. The koji grows in small wooden trays, carefully tended by hand during a two-day incubation period in the warm, humid koji room. After mixing the mashed, cooked soybeans with the ripened koji and the proper amount of sea salt, we pack the resulting miso into wooden fermentation vats where it ages until ready for harvest.

“We do not puree our miso, leaving it with the traditional whole-koji texture. It is not pasteurized or heat-treated to increase its shelf life; neither are any preservatives used. South River Miso is a living food containing many natural digestive enzymes, yeasts, *Lactobacillus* and other bacteria which aid digestion and are considered beneficial to good health.

“We hope you will enjoy naturally aged, unpasteurized miso. We welcome your comments or suggestions anytime. Visitors to the shop are always welcome by appointment.”

Talk with Christian and Gaella Elwell. 2000. Feb. 13. This letter was written after the three-family community

broke up in the fall of 1983, but Christian and Gaella continued to use the community logo. Much of the first paragraph is paraphrased from a leaflet written in Oct. 1979 by Thom Leonard and Richard Kluding. The letter was probably written for and sent to new customers who responded to the company's first ad in *East West Journal*. Address: South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

2693. **Product Name:** Homemaker Powdered Koji Spore Kits for Miso [Red Rice, Barley, and Soybean], and for Shoyu.

Manufacturer's Name: GEM Cultures.

Manufacturer's Address: 30301 Sherwood Rd., Fort Bragg, CA 95437. Phone: 707-964-2922.

Date of Introduction: 1983. November.

New Product–Documentation: Letter from Betty Stechmeyer of GEM Cultures. 1991. Oct. 18. These basic products were introduced in Nov. 1983. The concentrated spores were extended with organic rice flour to make the starters easier to measure and use.

2694. **Product Name:** Chick Pea Miso.

Manufacturer's Name: Great Life Products.

Manufacturer's Address: P.O. Box 2546, Escondido, CA 92025.

Date of Introduction: 1983. November.

Ingredients: Chick peas, rice koji, natural sea salt, soybeans (optional).

Wt/Vol., Packaging, Price: 1 lb plastic bags.

How Stored: Refrigerated preferably.

New Product–Documentation: Talk with John Belleme of North Carolina. 1996. Aug. 27. John made Chick Peaso, but he got the idea from Muramoto Sensei (probably via Lino Stanchich in about 1982-83), who made and sold small batches of chick pea miso at his Asunaro Eastern Studies Institute, high on Mt. Veeder, in Glen Ellen, California. Muramoto's product, though sold mostly to his students and friends, was probably America's first (perhaps the world's first) commercial chick pea miso. However John thinks that the miso may have also contained some soybeans—although he has no idea what proportion.

Talk with Lino Stanchich. 2002. Sept. 11. To the best of Lino's knowledge, Noboru Muramoto sensei made the first chick pea miso in the Western world. He started selling it in the fall of 1983. It was a sweet miso, made with rice koji. Some batches contained soybeans, while others did not.

2695. Hesseltine, C.W. 1983. The safety of shoyu. Paper presented to the Japan Soysauce Brewers' Assoc. meeting. 36 p. Held 29 Nov. 1983, Tokyo. [33 ref]

• **Summary:** Historical background: In 1953, Dr. Hesseltine went from the fermentation industry to the Northern Regional Research Laboratory (Peoria, Illinois) as head of

the ARS [Agricultural Research Service] Culture Collection. He had only a faint idea of how shoyu was made and he had never heard of miso, natto, or tofu. Shortly after his arrival, probably in 1953, he received a visit from Prof. Kin-ichiro Sakaguchi of the University of Tokyo, an authority on traditional Japanese fermented foods and one of the founders of the modern fermentation industry in Japan. Records show that in 1953 Dr. Sakaguchi received cultures from the ARS collection. His laboratory trained many students and much of his work was directly related to food fermentations involving soybeans and cereals.

In 1948 Dr. A.K. Smith of the NRRL visited Japan and China and recognized the tremendous amount of soybeans being used as human food. "The Western world had little or no understanding of the importance and use of these foods in the diet of Oriental people. He strongly recommended to anyone who would listen that there should be research on these foods and an exchange of scientists." In 1949 and later in 1958 Dr. Smith published a detailed report of his travels. In late 1958 two eminent Japanese scientists, Dr. Kazuo Shibasaki and Dr. Tokuji Watanabe arrived in Peoria to study traditional soybean foods. Dr. Shibasaki (who later became Professor of Agricultural Chemistry at Tohoku University) worked with Dr. Hesseltine on miso fermentation, and Dr. Watanabe worked with Dr. Smith on tofu.

"Before the year was up I became utterly fascinated with the process of making koji and with the delicious foods that could be made from the lowly soybean. But even broader than these studies on fermented foods was the concept of the solid state fermentation and the enzymes that could be made with this technique. Ever since that year of work with Dr. Shibasaki, I have been interested in fermented foods—not just those used in Japan, but worldwide." Address: NRRC, Peoria, Illinois.

2696. Jackson, Vicki. 1983. Squirrels vegetarian cook book. William Brooks Queensland, 921 Kingsford Smith Drive, Eagle Farm, Brisbane 4007, Queensland, Australia. 143 p. Illust. by Vicki Jackson. Index. Nov. 29 cm. 2nd ed. 1984.

• **Summary:** This hand-lettered cookbook was written for Squirrels Vegetarian Restaurant, Corner Melbourne & Edmonstone Streets, South Brisbane. The owners, Bronwyn Moses and Diana Mitchell, plan to open Squirrels on the Park, a second restaurant at 685 South Dowling St., Moore Park, Sydney, by Sept. 1984.

Soy-related recipes include: Chinese tofu soup (p. 12). Broccoli-pasta salad (with Soyaroni pasta, p. 30). Soyaroni marinaria [marinara?] (p. 52). Saucy soy stew (with cooked soybeans, p. 67). Tofu & peppercorn strudel (p. 79). About tofu (p. 86). Tofu satays with peanut sauce (p. 87). Battered tofu in sweet & sour sauce (p. 88). Tofu & peanut sauce (p. 89). Tofu & veggie curry (p. 90). Tofu & mushroom on

spinach pasta (p. 91). Tofu & spinach loaf (p. 92). Tofu Chinese style (p. 93).

About tempeh, by Julie & Michael Joyce (p. 94; "Little did we know in early 1982, when we first ate tempeh made by Cyril & Ellie Cain of Eumundi, Sunshine Coast, that we were soon to become tempeh makers." They supply Squirrels with the tempeh they make). Tempeh chips (p. 96). Tempeh & tomato bake (p. 97). Tempeh sweet & sour (p. 98). Tempeh Indonesian style (p. 99). Tempeh Chinese style (p. 100). Tofu dessert (p. 125). Pages 141-42 describe tamari, tempeh, tofu, and miso. Address: Brisbane, Queensland, Australia.

2697. Leonard, Tom; Jacobs, Leonard. 1983. Choosing the best sea salt. Lab reports and production methods should be considered. *East West Journal*. Nov. p. 16, 18-20. Address: Boston, Massachusetts.

2698. **Product Name:** [Lima Heiwa Instant Miso Soups (Regular, and Red)].
Foreign Name: Lima Instant Miso Soup.
Manufacturer's Name: Lima Foods.
Manufacturer's Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.
Date of Introduction: 1983. November.
Wt/Vol., Packaging, Price: 4 x 10 gm.
How Stored: Shelf stable.
New Product-Documentation: R. Leviton. 1983. Report on trip to Europe with American Soybean Assoc. Oct-Nov. p. 17. Product seen in Reformhaus health food store in Zurich, Switzerland.

Lima catalogue, price list, and color product brochure. 1989. A color photo shows both labels, one pea green and one red. Both bear the Heiwa brand over the Lima brand. The miso in the red label package has undergone a longer fermentation.

2699. *Manna Bulletin*. 1983. Miso uit Amerika [Miso from America]. 5(7):Nov. [Dut]
 • **Summary:** Describes the miso made by John and Jan Belleme that is now imported to Europe by Manna. Also discusses Instant Miso Soup imported from Edward & Sons in the USA. Address: Meeuwenlaan 70, Amsterdam, Netherlands.

2700. South River Miso Co. 1983. South River Miso: Wisely given miso gives its own wisdom (Ad). *East West Journal*. Nov. p. 87.
 • **Summary:** Describes the different types of miso sold by the company, plus the age and ingredients used in each. The miso is made from the finest organically grown grains and soybeans, processed entirely by hand and gentle wood-fired cooking. An illustration at the bottom shows the miso shop buildings. A logo at the top shows three waves in a circle.

This ad also appeared in the spring 1984 issue (p. 36) of *Macromuse*. A similar ad, but only half as tall, appeared in the Jan. 1984 issue (p. 32) of *East West Journal*. Address: South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

2701. **Product Name:** [Urtekram Soy Sauce, and Hacho Miso].
Manufacturer's Name: Urtekraemmeren (Importer). Made in Japan.
Manufacturer's Address: Larsbjoernsstraede 20, DK-1454 Copenhagen, Denmark.
Date of Introduction: 1983. November.
New Product-Documentation: R. Leviton. 1983. Report on trip to Europe with American Soybean Assoc. Oct-Nov. p. 23. On a visit to a natural foods store in Aarhus, Denmark, Urtekram brand soy sauce and Hacho miso were sold. Urtekram is sold by a large food distributor in Denmark.

2702. **Product Name:** [Furusato Miso].
Foreign Name: Furusato Miso.
Manufacturer's Name: American Biofoods, Inc.
Manufacturer's Address: P.O. Box 62, Hazlet, NJ 07730.
Date of Introduction: 1983.
Ingredients: Water, soybeans, rice, salt.
Wt/Vol., Packaging, Price: 16 oz.
How Stored: Refrigerated.
New Product-Documentation: Label. 1983, undated. 5.25 by 6 inches. Plastic. Red, green, yellow and white. Recipes for miso soup and dressing. "No chemical preservatives added."

2703. **Product Name:** Wangja Hot Paste.
Manufacturer's Name: American Biofoods, Inc.
Manufacturer's Address: P.O. Box 62, Hazlet, NJ 07730.
Date of Introduction: 1983.
Ingredients: Water, soybeans, salt, red pepper, rice.
Wt/Vol., Packaging, Price: 16 oz.
How Stored: Refrigerated.
New Product-Documentation: Label. 1983, undated. 5 by 6.25 inches. Plastic. Red, green and white. Recipe for sweet and sour hot sauce. "No chemical preservatives added."

2704. **Product Name:** Natto Miso, Barley Miso, Rice Miso, Soybean Miso, Mellow White Miso, and Miso Soup.
Manufacturer's Name: Bountiful Bean Plant (Repackager).
Manufacturer's Address: Madison, Wisconsin.
Date of Introduction: 1983.
New Product-Documentation: James Lubbe. 1988. March. Abbreviated History of the Bountiful Bean. "We do not make miso, but buy it in bulk and package it in smaller quantities." Natto miso is 10 oz. A 3-by-5-inch ad from

1986-87 is titled "Unpasteurized Misos. Aged Miso: Barley, rice, soybean. Young miso: Mellow white, natto. We repack U.S. and Japanese misos in Madison, WI." Contains a recipe for Quick Miso Soup.

2705. Product Name: Sunny Tofu Salad (Eggless Egg Salad).

Manufacturer's Name: Bountiful Bean Plant.

Manufacturer's Address: 903 Williamson St., Madison, WI 53703. Phone: 608-251-0595.

Date of Introduction: 1983.

Ingredients: Tofu, celery, scallions, green pepper, pimiento, shoyu soy sauce, lemon juice, mellow white miso, honey, dried parsley turmeric, curry, cumin, cayenne pepper.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

New Product-Documentation: James Lubbe. 1988.

March. Abbreviated History of the Bountiful Bean. A product named simply Sunny was first launched in 1983. Later it was renamed Sunny Tofu, then Sunny Tofu Salad. Label. 1985. 3.5 inch diameter. Self adhesive. Maroon on white. "Eggless Egg Salad."

2706. Chen, Taosheng. 1983. [Evolution of the technology of koji making in China]. *Tiaowei Fushipin Keji (Condiment Science and Technology, China)* No. 7. p. 1-5. [Chi; eng+] Address: Shanghai Univ. of Science and Technology, China.

2707. Product Name: Soken Ramen with Miso Soup.

Manufacturer's Name: Soken Trading, Inc. (Importer). Made in Japan.

Manufacturer's Address: 591 Redwood Highway, Suite 2125, Mill Valley, CA 94941.

Date of Introduction: 1983.

How Stored: Shelf stable.

New Product-Documentation: Mentioned on label of Brown Rice Dinner with Soybeans. Spot in Whole Foods. 1984. March. p. 63. Ad in East West Journal. 1984. June. p. 15. "Soken Ramen. A new look for the original ramen. Still the best tasting." The two varieties are "with miso soup" and "with sea vegetables."

2708. Product Name: Westbrae Natural Buckwheat Ramen. Instant Asian-Style Buckwheat Noodles & Miso Flavor Broth.

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: 415-658-7518.

Date of Introduction: 1983.

Ingredients: Asian-style noodles: Whole buckwheat flour, sifted wheat flour, water, sea-salt. Vegetable broth: Powdered soy sauce (soybeans, wheat, sea salt), powdered miso (soybeans, seasalt), dried Kombu seaweed, dried

Japanese mushrooms, sea salt, dried onion, garlic, white pepper, dried ginger, green onion.

Wt/Vol., Packaging, Price: 3.1 oz (90 gm).

How Stored: Shelf stable.

Nutrition: Per 45 gm.: Calories 158, protein 5 gm, carbohydrate 32 gm, fat 1 gm.

New Product-Documentation: Label. 1986, undated. 10 by 7 inches. Plastic. Orange, brown, white, green, black on yellow. Color picture of bowl of Buckwheat Ramen. Miso Flavor Broth packet. 3 inch square. Foil. Burgundy on silver.

2709. Product Name: Westbrae Natural Seaweed Ramen. Instant Asian-Style Whole-Wheat Noodles & Seaweed Flavor Broth.

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: 415-658-7518.

Date of Introduction: 1983.

Ingredients: Asian-style noodles: Whole-wheat flour, sifted wheat flour, salt. Soup: Powdered miso (soybeans, white rice, salt). Powdered soy sauce (soybeans, wheat, seasalt), shiitake mushroom powder, onion powder, dried wakame seaweed, garlic salt, ginger powder, black pepper.

Wt/Vol., Packaging, Price: 3.1 oz (90 gm).

How Stored: Shelf stable.

New Product-Documentation: Label. 1986, undated. 10 by 7 inches. Plastic. Orange, white, black, brown, green on blue. Color picture of bowl of Seaweed Ramen.

2710. Product Name: Westbrae Natural Miso Ramen.

Instant Asian-Style Whole-Wheat Noodles & Miso Flavor Broth.

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: 415-658-7518.

Date of Introduction: 1983.

Ingredients: Asian-style noodles: whole wheat flour, sea salt. Miso broth: Powdered soy sauce, soybeans, wheat, sea salt, powdered miso, dried kombu seaweed, dried Japanese mushroom, sea salt, dried onion, garlic, white pepper, dried ginger, green onion.

Wt/Vol., Packaging, Price: 3.1 oz.

How Stored: Shelf stable.

New Product-Documentation: Label. 1986, undated. 9.5 by 6.5 inches. Plastic packet. Orange, purple, white, green brown. Full color picture of bowl of Miso Ramen. Directions with pictures of how-to.

2711. Product Name: [Lentil Spread (With Miso)].

Foreign Name: Linzen Pastei.

Manufacturer's Name: Witte Wonder Natural Products B.V.

Manufacturer's Address: Piet Heinstraat 80, 2518 CK Den Haag, Netherlands.

Date of Introduction: 1983.

Ingredients: Lentils*, bread, onion*, miso (sojapasta), kombu, herbs. * = Organically grown.

Wt/Vol., Packaging, Price: 200 gm.

How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Label. 1983. 6 by 1.5 inches. Self adhesive. 2 color: Green and light green on white. Illustration of lentil plant. “Delicious on bread, cracker, or toast. After opening, keep refrigerated.” Talk with Sjon Welters. 1989. Aug. 13. This product was a spread, not a croquette, pie, or pasty.

2712. **Product Name:** Yeo's Hoi Sin Sauce (Barbecue Sauce).

Manufacturer's Name: YHS (USA) Inc. (Distributor). Made in Singapore.

Manufacturer's Address: 1744 Junction Ave., San Jose, CA 95112.

Date of Introduction: 1983.

Ingredients: Sugar, soya beans, water, onions, wheat flour, chilies, corn starch, salt, acetic acid, garlic, pepper, sesame oil, monosodium glutamate.

Wt/Vol., Packaging, Price: 18 oz can (400 ml).

How Stored: Shelf stable.

New Product–Documentation: Label. 1983, undated. Red, black, gold, and white on orange. In French and English. “This is an exotic specialty of the highest quality. For that special superb Oriental flavor, garnish liberally onto broiled steaks, hamburgers, chops, chicken and fish—a few minutes before removing from the grill.”

2713. **Product Name:** Yeo's Crushed Yellow Bean Sauce.

Manufacturer's Name: YHS (USA) Inc. (Importer). Made in Singapore by Yeo Hiap Seng Ltd.

Manufacturer's Address: 1744 Junction Ave., San Jose, CA 95112.

Date of Introduction: 1983.

Ingredients: Soya beans, sugar, wheat flour, salt, monosodium glutamate.

Wt/Vol., Packaging, Price: 16 oz (500 gm) can.

How Stored: Shelf stable.

New Product–Documentation: Label. 1983, undated. Red, black, gold, and white on orange. “This is an exotic specialty of the highest quality.”

2714. Zhang, Fazhu. 1983. Doujiang zhizou qiyuan kaobian [A critical investigation of the origins of soybean chiang production]. *Tiaowei Fushipin Keji (Condiment Science and Technology, China)* No. 1. p. 15-18. [27 ref. Chi; eng]

• **Summary:** Contents: The jiang mentioned in pre-Ch'in times (221 B.C. was not soybean jiang). A critical examination of historical data concerning the earliest record of making soybean jiang. Looking at the origins of soybean jiang from cultural archaeological data. The *Chi Chiu Pien* by Shih Yu (Western Han, 206 B.C.–24 A.D.) does not state clearly that soybeans were used to make jiang, but they may have been. The earliest unambiguous record of using soybeans to make jiang is found in the *Szu Min Yüeh Ling* by Tsui Shih (Eastern Han, 25–220 A.D.). Research shows that the original text of this document, which was probably written in Loyang [Luoyang] during the Yen-hsi period of the Huan Emperor (158-166 A.D.) is now lost, but a fragment of approximately 3,000 characters is preserved in the *Ch'i-min yao-shu* and is also found in the *Yü Chu Pao Tien* written by Tu T'ai-ching during the Northern Chou dynasty (557-581 A.D.). An analysis of Tsui Shih's words shows that at that time *mo-du jiang* was made from soybeans throughout Loyang, and also that jiang was made from pickled (stored) pumpkins, which may be the earliest surviving historical record in China of vegetables pickled in jiang (to make *jiangcai*).

The earliest existing literary work to discuss the production of jiang with beans and wheat is the *Ch'i-min yao-shu* in the section titled “Ways to make jiang #70.”

In 1972 an international sensation was created when a perfectly preserved female corpse and a wealth of funeral articles were unearthed from a Han dynasty tomb—Mawangdui #1—in the eastern suburbs of Changsha in Hunan. An archaeological report published in 1973 indicated that many foods which could still be identified were found within this tomb. Some 22 of the ceramic pots unearthed were completely filled with food and 3 of these were filled with a food made from some type of bean. Vessels #126 and #301 contained soy nuggets, as described on bamboo strip #101.

“The bean food that filled wide-mouth vessel #132 was ‘a black-color jiang type of material,’ and this corresponded to the jiang recorded on bamboo strip #106. A report of an analysis entitled ‘An Investigation of the Biological Specimens Unearthed from Han Tomb—Mawangdui #1—in Changsha’ was published in 1978, and this report indicated that the material that filled the ceramic vessel was in fact a soy bean product. From the above data, it is possible to conclude that among these burial foods were samples of soy jiang; the jiang recorded on the bamboo strip really was soy jiang. Thus, it may be inferred that every (otherwise unspecified) mention of jiang in Chi Chiu P'ien and Shih Chi: Huo-chih lieh-chuan from the Western Han Dynasty (206 B.C.–24 A.D.) could likewise have been soy jiang.” Among these were various types of jiang as well as soy nuggets (*chih*). Address: Fuzhou Municipal Vegetable, Jiang, and Qi Corporation.

2715. Aubert, Emmanuelle. 1983. *Les 9 grains d'or dans la cuisine* [The nine golden grains in the cuisine. 2nd ed.]. Paris: Le Courrier du Livre. 286 p. Illust. by C. Galinet. Index. 22 cm. [Fre]

• **Summary:** The subtitle on the cover reads: 400 simple and savory recipes. Menus and advice on good health. Contents: Introduction. 1. The cereals (see p. 28-31 for instructions for making seitan at home from 500 gm wheat flour, plus 8 seitan recipes). 2. Breads. 3. Legumes: Cooking legumes, lentils, haricots, dry peas, chick-peas, azuki beans, soya. 4. Vegetables. 5. Soups. 6. Animal products. 7. Condiments, aromatics, and sauces (incl. tamari and miso). 8. Desserts. 9. Beverages. 10. 80 menu ideas. 11. Pregnancy and the feeding of young infants. 12. Some natural remedies. Where to buy supplies.

Soy-related recipes include: Making tofu at home (p. 87-91; illustrations and method taken without credit or permission from *The Book of Tofu* by Shurtleff & Aoyagi). Yuba. Grilled tofu (p. 91). Tofu with nuts (*noix*) and miso. Skewered tofu. Tofu salad (p. 92). Tofu with vegetables. Onions with tofu. Okara croquettes. Soymilk with fruits (p. 93). Making tempeh at home (p. 94-95). Tempeh goreng. Tempeh bachem (p. 95). Keripik tempeh (tempeh chips; p. 96). Tempeh croutons (p. 96). Pate of vegetables with tofu (p. 126). Jardinière au tofu (p. 128). Peas with tofu (p. 128). Soy sprouts made from mung beans (p. 129-30).

Pages 191-94 give basic information on the following fermented soya condiments: tamari, miso (Hacho [sic, Hatcho] miso, barley miso, rice miso). Pages 278-79 list manufacturers and handlers of various foods used in this book, and pages 280-81 give their addresses: Yellow soybeans: Celnat, Les Sept Marches, Le Seuil, Lima. Miso: Celnat, Lima, Les Sept Marches, Le Seuil, le Bol en Bois, Tenryu. Only Lima and Les Sept Marches manufacture miso in France. Tamari: Celnat, Le Seuil, Les Sept Marches, Lima, le Bol en Bois, Tenryu. Nigari: Le Bol en Bois, Tenryu. Tofu: Le Bol en Bois, Tenryu, Soy. Tempeh: Traditions du Grain, Le Bol en Bois. Tempeh culture: Semailles. Koji: Les Sept Marches, Tenryu, Le Bol en Bois. Amasaké: Traditions du Grain. Soymilk: Celnat, Lima.

A photo on the rear cover shows Aubert, a woman.

Note: This is the earliest French-language document seen that mentions amazake, which it calls "Amasaké." Address: France.

2716. Business Trend Analysts, Inc. 1983. *The health and natural food market*. 2171 Jericho Turnpike, Commack, NY 11725. [9 ref]

• **Summary:** One section of this study (including pages 108-111) concerns the soyfoods market. It consists largely of statistics compiled by the Soyfoods Center and Soyfoods Association of North America. No permission was obtained from Soyfoods Center to use this information. Address: Commack, New York.

2717. Editors of *China Pictorial*, Beijing. 1983. *Chinese cuisine from the master chefs of China*. Boston, Massachusetts, and Toronto, Ontario, Canada: Little, Brown and Co. * Address: Japan.

2718. Ford, Richard; Andersen, J.; Andersen, S. 1983. *Juel Andersen's sea green primer. A beginner's book of sea weed cookery*. Creative Arts Book Co., 833 Bancroft Way, Berkeley, CA 94710. 64 p. Illust. Index. 23 cm. [13 ref] Address: California.

2719. Fruin, W. Mark. 1983. *The origins of shoyu* (Document part). In: M. Fruin. 1983. *Kikkoman: Company, Clan and Community*. Cambridge, MA: Harvard University Press. xiv + 358 p. See p. 14-16. [4 ref]

• **Summary:** "The production of shoyu, one of the traditional products manufactured in the countryside [of Japan], grew enormously during the Tokugawa Period (1603-1867) because of a dramatic increase in its market, primarily urban residents. Whereas before the 17th century only 1 or 2 percent of the Japanese population lived in cities, by 1725 roughly 20 percent did so. The increased demand for shoyu was met primarily through an increase in capacity based on the entrance of new producers and the expansion of established brewers..."

"The forerunner of modern shoyu appears to have been *miso tamari*, the liquid that forms during the process of fermenting rice or soybeans to make a soft, cheeselike product. The most popular and likely story of shoyu's origins relates how Kakushin, a Japanese Zen priest who had studied at the Kinzanji Temple in China, returned to Japan in the middle of the 13th century and began preparing a type of miso that became a well-known local specialty of Yuasa, the town near Kakushin's temple in the province of Kii (today's Wakayama prefecture). By the end of the 13th century the liquid had come to be called tamari and was sold commercially along with the miso. From such beginnings, a great variety of experimentation with the ingredients and methods of tamari fermentation was launched. Although tamari probably found favor initially in Buddhist monasteries as a condiment for a vegetarian diet, the popularity of tamari-type seasonings was related more to the prevalence of battlefields than of meditation halls during the period of civil wars that raged across Japan from the thirteenth to sixteenth centuries. Soldiers apparently found the versatility and transportability of the seasonings to their liking. Shoyu, which evolved from these tamari seasonings by adding wheat to the fermentation mash, appeared during the 16th century.

"The first soy sauce made in the area of modern Noda was brewed in about 1560 by Iida Ichirobei and respectfully presented as tribute taxes to the local warrior family in the

following years. The Iida family, ostensibly fleeing the carnage and confusion of the Onin Wars (1467-1477) in the Home Provinces around Kyoto, arrived in the area of Noda early in the 16th century and by mid-century were engaged, among other pursuits, in the manufacture of tamari, a type of soy sauce that by now was made entirely from soy beans...

"Iida's first brew was closer to tamari than shoyu in consistency, taste, and aroma...In Eastern Japan the manufacture of a shoyu rather than tamari soy sauce like Iida's seems to have originated in or near the town of Choshi at the mouth of the Tone River on the northeastern tip of the Boso Peninsula, which guards the entrance to Tokyo Bay like an extended crab's claw. The Hamaguchi families of Choshi originated as branch households of the main Hamaguchi house of Hiromura village in Kii, not surprisingly the same province where Kinzanji miso and miso-tamari appeared and where the Hamaguchi of Hiromura were among the earliest commercial brewers of shoyu in Japan.

"The Hamaguchi transplants in Choshi, along with Tanaka Genba and his descendants, began the manufacture of shoyu early in the 17th century. Higeta shoyu was first produced here in 1616, Yamajo in 1630, and Yamasa in 1645.

"It was not until the latter half of the 17th century, however, that Noda followed Choshi in the manufacture of a soy sauce that was closer to shoyu than the thick, dark tamari was. In 1661 Takanashi Hyozaemon XIX began brewing shoyu in Noda; using a work force of twenty that included fifteen contract laborers, he produced 3,000 gallons his first year." Address: Prof. of History, California State Univ., Hayward.

2720. Fujimori, Ikuo. 1983. *Daizu. Shizen kindaabukku* [Soybeans. Natural children's book]. Tokyo: Fureberu-kan K.K. 30 p. Illust. by Akira SETO. 26 cm. [Jap]

• **Summary:** A children's book with superb color illustrations. Shows how to make natto, tofu, and soy sprouts at home. A large color photo (p. 10-11; 2-page spread), titled "All made from soybeans," shows kinako, miso, shoyu, soymilk, yuba in a bowl of clear soup, ganmodoki, abura-age, cooked whole soybeans (*nimamé*), okara sauteed with vegetables, dengaku (made with tofu and miso), and atsu-agé. Address: Daizu kairyo no dai-ichi ninsha [President, Takeya Miso Co., Nagano, Japan].

2721. Herrmann, Karl. 1983. *Exotische Lebensmittel. Inhaltsstoffe und Verwendung* [Exotic foods. Ingredients and uses]. Berlin, Heidelberg, & New York: Springer-Verlag. x + 175 p. Illust. 21 cm. See p. 111-19. Sojabohnenprodukte. [18 ref. Ger]

• **Summary:** The chapter on legumes contains brief introductions to soybeans, green vegetable soybeans

(unreife Sojabohnen), soy sprouts (Sojabohnensprossen, Sojabohnenkeimlinge), soymilk (Sojamilch), tofu (Tofu, Sojaquark), soy sauce (Sojasosse, Shoyu), miso (Miso, Sojapaste), tempeh (Tempeh), fermented tofu (Sufu, chinesischer Sojabohnen-Käse), and natto (Natto, fermentierte ganze Sojabohnen). Tables shows the nutritional composition of tofu, deep-fried tofu pouches (Aburage), dried-frozen tofu (Kori-Tofu), yuba (Yuba), roasted soy flour (Kinako), and miso, plus defatted soybean meal (entfettetes Sojabohnenmehl; 51% protein), and soybean concentrate (Sojabohnen Konzentrat; 64.9% protein). Address: West Germany.

2722. Hesselstine, C.W. 1983. Microbiology of Oriental fermented foods. *Annual Review of Microbiology* 37:575-601. [50 ref]

• **Summary:** Contents: Introduction. Historical account. Importance of mixed cultures. Microorganisms used.

"The Japanese Food Agency, Ministry of Agriculture, Forestry, and Fisheries (1979), gave the following figures for 1979: miso, 567,776 tons; shoyu, 1,252,431 kiloliters; and natto, 158,000 tons. In Korea, 35% of the 442,803 metric tons of soybeans produced is fermented. Indonesia uses about 75,600 tons of soybeans in making tempeh.

"There is considerable ancient writing in Chinese publications about foods made by fermentation, but the first scientific reports are only about 100 years old. From 1878 until the beginning of World War I, there was an explosion of papers and reports dealing with fermented foods and drinks... In general, studies between 1881 and 1914 were devoted to the description of the product and the local name and to the isolation and description of the microorganisms associated with the fermentation. A number of organisms new to science were described and illustrated. Additional information was given on the action of the fungus on the substrate, suggested uses of the fungus in processes that could be exploited in European technology, and a description of the substrate preparation, food use, and native methods of food preparation.

"This period of research ended abruptly with the advent of World War I, as the exchange of students and cooperation between Japan and Germany ceased. Food fermentation studies resumed in the 1950s and today considerable interest exists. This renewed interest stems from the concern with nutrition, the great enthusiasm for vegetarian and natural foods, the search for less expensive, high-protein foods, the influence of foreign students studying in the West, the need to expand export markets, the need to add products to convenience foods to add zest and flavor, and the interest in the activities of microorganisms used in fermented foods." Address: NRRC, Peoria, Illinois.

2723. Jaffrey, Madhur. 1983. *Eastern vegetarian cookery*. London: Jonathan Cape. xii + 531 p. Illust. by Susan Gaber.

Index. 24 cm.

• **Summary:** This is an expanded version of *Madhur Jaffrey's World-of-the-East vegetarian cookery* (1981, New York). The author of this creative book, a woman, was born in British India on 13 Aug. 1933. She first became known as an actress in India, but later found fame as a food writer. She has lived in America for more than 20 years. She presents 21 recipes for bean curd (tofu), 7 for tempeh, and some for yuba and miso. Soy-related recipes include: Aubergine slices with white miso (Japan, p. 4-5). Green beans with soy sauce (Japan, p. 20), Cabbage with miso (Japan, p. 29). Lotus root with soy-sauce dressing (Korea / Japan / Hong Kong, p. 46-47). Yellow pumpkin cooked with soy sauce (Japan, p. 74-75). Fresh soy beans, steamed (China, p. 76, with "fresh green soy beans in their pods"). Yien Koo's Spinach with fermented bean curd (China, p. 78-79). Pecel (Vegetable salad with spicy peanut sauce, plus tofu and tempeh; Indonesia, p. 87). Tempura (with tofu; Japan, p. 89-92). Soy bean sprouts (how to grow, p. 119). Soy-bean and mung-bean sprouts seasoned with sesame oil (Korea, p. 123-24). Tempeh, Fried tempeh, Fried, pre-seasoned tempeh, Sambal goreng tempeh kering (Sweet and sour tempeh), Tempeh cooked in coconut milk (Indonesia, p. 127-30). Thai fried rice (with red fermented tofu, p. 176).

Chapter 4 (p. 187-221), titled "Soy milk, bean curd, and wheat gluten," contains the following: Introduction to each ingredient. Soy milk (making your own at home). Making your own bean curd. Udofu (Yudofu, simmering bean curd with seasonings, Japan). Bean curd with watercress (Singapore Chinese). Bean curd with fresh coriander (Taiwan). Korean-style bean curd in a hot water bath. *Hiya-yakko* (Chilled bean curd, Japan). Bean curd with broccoli (Hong Kong). Cabbage cooked with bean curd (Japan). Bean curd with a deliciously spicy sauce (China). Carrots and beans with a bean-curd dressing (Japan). Bean curd, mushrooms, and peanuts in hoisin sauce (Chinese style). Sautéed bean curd (Korea). Tofu dengaku (Toasted bean curd with a miso topping, Japan). Fried bean-curd cubes (Most of East Asia). Soy-bean sprouts sautéed with fried bean curd (China). Fried bean curd with a sweet-and-sour sauce (China). Fried bean curd cakes with a mustard surprise (Japan). Inari-zushi ("Bags" of fried bean curd stuffed with sushi rice, Japan). Pressed bean curd with cabbage (China). Salad of pressed bean curd, mung-bean sprouts, and agar-agar (China). How to make fried and baked wheat-gluten balls. Stew of baked wheat gluten, potato, turnip, carrot, and cabbage rolls (Japan, p. 215). Fried wheat gluten with broccoli, carrot, and mushrooms (China). Fried wheat gluten and potato stew (Indian style). Shredded wheat gluten and Cabbage with fennel seeds (Indian style). Buddha's delight (A mixed Chinese stew, Hong Kong; with yuba, fried tofu, and fried wheat gluten balls).

Chawanmushi (Steamed savory custards, with tofu; Japan, p. 223-26). Omelette with bean curd (Japan, p. 230-31). Soy-sauce eggs (Thailand / China, p. 245). Paneer (Fresh cheese from cow's milk; India, p. 277-78). Hot or cold noodles with a soy-sauce dressing (China, p. 288). Noodles with a hot-and-sour bean sauce (China, p. 290). Vegetarian mee krob (Crisp noodles with pressed bean curd and eggs; Thailand, p. 296-97). Noodles with quail eggs, mushrooms, spinach, and yuba (Japan; p. 298-99). Hoppers (yeast pancakes; Sri Lanka, p. 315). Roti (Flat whole-wheat bread; India, p. 320). Delicious stock made with soy-bean sprouts (p. 340). Clear soup with mushrooms, bean curd skins [yuba], and spinach (Japan, p. 346). Clear soup with soft bean curd and Chinese leaves (p. 346). Miso soup with bean curd (Japan, p. 357). Miso soup with carrots and mushrooms (Japan, p. 358). Fried, munchable soy beans [soynuts] (China, p. 373). Potato and tempeh patties (Indonesia, p. 394). Dipping sauces (with soy sauce, p. 414-17, incl. kochu chang—Korean soy sauce). Kombu relish (with soy sauce; Japan, p. 435). Shoyu daikon (White radish pickled in soy sauce; Japan, p. 436). Ginger quick-pickled soy sauce (China, p. 436). Aomidaikon (Quick pickled small white radishes, with slightly sweet yellow miso; Japan, p. 438-39). Chinese-style jellied bean-curd sweetmeat with a peanut topping (Singapore, p. 462-63).

General information (p. 481-506): See: Bean curd (regular, fried, fermented, pressed, pressed seasoned, dried bean-curd skin or yuba). Beans (azuki, soy). Bean sauce (made from fermented soy beans). Chilli paste with soy bean (and garlic). Hoisin sauce. Miso. Nam yee (see Bean curd, fermented). Nigari. Soy beans, fresh. Soy-bean sprouts. Soy milk. Soy sauce (incl. Japanese, Chinese dark and light, Japanese usukuchi, Indonesian ketjap manis). Tao Hoo Yee (see Bean curd, fermented). Tempeh. Yuba. Sources (of ingredients; p. 507-10). Address: New York City, NY.

2724. Konishi, Kiyoko. 1983. Japanese cooking for health and fitness. Tokyo: Gakken Co. Ltd. 120 p. Illust. 26 cm. Produced in conjunction with Kikkoman. Many large color plates. 27 cm. [Eng]
Address: Yokyo, Japan.

2725. Krohn, Norman Ody. 1983. Menu mystique. New York, NY: Jonathan David Publisher. 404 p. 28 cm. *

2726. Kushi, Michio; Jack, Alex. 1983. The cancer prevention diet: Michio Kushi's nutritional blueprint for the relief and prevention of disease. New York, NY: St. Martin's Press. xi + 460 p. Index. 22 cm. [32 ref]

• **Summary:** In this book, cancer preventing effects are attributed to miso (p. 50-51, 220-21, 304-06), and to soybeans (p. 51, 154-55, 293, 306). Natto, soymilk, tamari, tempeh, and tofu are also discussed.

Pages 50-51 note: “A ten-year study completed in 1981 by the National Cancer Center of Japan reported that people who ate miso soup daily were 33 percent less likely to contract stomach cancer than those who never ate miso soup. The study also found that miso was effective in preventing against heart and liver diseases...”

“Soybeans, a major source of protein in the macrobiotic diet, have been singled out as especially effective in reducing tumors. The active ingredient in soybeans is called a protease inhibitor. Laboratory tests show that soybeans and certain other beans and seeds containing this factor added to the diet prevent the development of breast, stomach, and skin tumors. Whole soybeans and soy products, including miso, tamari soy sauce, tofu, tempeh, and natto are staples of the macrobiotic diet... At St. Luke’s Hospital in Nagasaki, a group of macrobiotic doctors and patients who had survived the atomic bombing on August 9, 1945 subsequently protected themselves against potentially lethal doses of radiation on a diet of brown rice, miso soup, sea vegetables, and sea salt.”

Pages 220-21 contain a long excerpt from the account of Dr. Tatsuichiro Akizuki, director of internal medicine at St. Francis’s Hospital in Nagasaki. He survived the world’s first atomic bomb attack on 9 Aug. 1945. He believed that the main reason that neither he nor any of his co-workers at the hospital suffered or died from radiation was because of their diet, based on miso, brown rice, and sea vegetables.

Pages 293, and 304-06 summarize a number of publications which seem to show that consumption of soybeans, miso, or soymilk may prevent cancer. Pages 391-99 contain soyfoods recipes. Address: Boston, Massachusetts.

2727. Lewallen, Eleanor; Lewallen, John. 1983. Sea vegetable gourmet cookbook and forager’s guide. Mendocino Sea Vegetable Co., P.O. Box 372, Navarro, CA 95463. 32 p. [4 ref]
Address: Navarro, California.

2728. Migliaccio, Janice Cook. 1983. Follow Your Heart’s vegetarian soup cookbook. Santa Barbara, California: Woodbridge Press. 128 p. Illust. 24 cm.

• **Summary:** Contains more than 50 delicious vegetarian soups developed by the author and other creative soupmakers at Follow Your Heart’s famous natural foods restaurants—and served to more than 1 million customers. Follow Your Heart began in 1970, founded by Michael Besancon, as a small vegetarian lunch counter in the corner of a natural foods store in Canoga Park, California. In 1973, Follow Your Heart grew to include the store as well. In 1976 it expanded and moved to a much larger store a few blocks away. In Sept. 1982 it opened a second store (without a restaurant) in Santa Barbara, California. Today Follow Your Heart employs about 100 people, all

vegetarians. The head store is at 21825 Sherman Way, Canoga Park, California 91303.

The seasonings tamari and Dr. Bronner’s “Balanced Protein Seasoning” (p. 17-18) and the “special food items” Bakon Bits, miso, textured vegetable protein (TVP, p. 24-25) are described and used in a number of recipes. Soy-related recipes include: Miso vegetable soup (with miso and tofu, p. 97). Oriental vegetable soup (with tofu and tamari, p. 103-05). Sweet and Sour Oriental Vegetable (with tofu and tamari, p. 120-21). Address: Southern California.

2729. Rohé, Fred. 1983. The complete book of natural foods. Boulder, Colorado: Shambhala. 491 p. [120 ref]

• **Summary:** This book is about “The New American Diet,” which is an “omnivarian” diet including some fish and meat. Chapter 14, titled “New and future natural foods,” contains a section titled “Soy foods” (p. 162-65) including tofu, tempeh, miso, soy sauce, soy milk, and other soy products (yuba and sufu). The work of William Shurtleff and Aoyagi, and their Soyfoods Center, is mentioned 2-3 times. Toward the back of the book are many soyfoods recipes.

The Prologue tells Rohe’s life story and pioneering work with natural foods. In 1964, at the ripe old age of 27, he didn’t feel good, didn’t look good, and didn’t like it—the result of years of smoking, drinking, eating bad food and “burning the candle at both ends.” “It was time to do something about it. Adelle Davis became my guru and Thom Hamilton—the health foods store owner who sold me [her book] *Let’s Eat Right to Keep Fit* became my mentor.” Within a few months he was feeling much better. “So in 1965 I bought a small health food store in the Sunset district of San Francisco.” It was named Sunset Health Foods.” He discarded most of the dietetic foods on the shelves and replaced them with “old-fashioned groceries—basic stuff, traditional, simple, whole food... What was evolving was a modern version of an old-fashioned grocery store.” He would provide information instead of hype, bulk retail foods sold out of barrels, crocks, jars, and drawers instead of packaged products, food instead of food supplements. He renamed the store “New Age Natural Foods.”

“My career ended in 1973, after eight years. New Age Natural Foods had served as a model for what were called in those days ‘hippie food stores.’ It is credited as being the prototype natural foods store, as distinct from a health food store.” Since 1973 Fred continued to work in the natural foods industry. In 1979, in his capacity as a consultant, he met the people of Sunburst Farms, who are his collaborators on this book. “Sunburst is the realization of a vision experienced in 1951 by its founder Norm Paulsen, while he was living as a student monk studying yoga at the Self-Realization Fellowship in Los Angeles. He moved to the Santa Barbara area, and while operating a construction business in 1968 established Sunburst Farms as a group of

people living communally under spiritual principles on 160 acres of land in the mountains above Santa Barbara. The community-owned business, Sunburst Natural Foods, grew foods organically and flourished. In 1970 they opened a natural foods retail store in Santa Barbara. The community grew to include a second ranch and a total membership of over 200 people. "The business came to include manufacturing and wholesaling as well as retailing. There are now five Sunburst Farmer's Markets, two of them—in Goleta and Ventura—large, complete, natural foods supermarkets. Sunburst also owns and operates a natural foods restaurant, 'The Farmer and the Fisherman,' 35 miles north of Santa Barbara along the coastal highway." Then Norm envisioned a new direction and everything changed. They traded their 6,000 acre coastal ranch for land in northeastern Nevada totaling over 500,000 acres. "It could hardly have been a more radical change. But the soil is rich in minerals and there is abundant water from artesian wells. They are responding strongly to the challenge of, as they say, 'making the desert bloom as a rose.'"

This book was Re-published in 1986 as *Nature's Kitchen* by Garden Way in Brattleboro, Vermont.

Interview with Fred Rohe. 1988. Nov. 3. Fred bought Sunset Health Foods in 1965 and transformed it into New Age Natural Foods at 1326 Ninth Ave. in San Francisco. Address: 4014 Lincoln Way, San Francisco, California 94122. Phone: 415-564-7024.

2730. Sams, Craig; Sams, Ann. 1983. The brown rice cookbook: A selection of delicious, wholesome recipes. New York and England: Thorsons Publishers Inc. 128 p. Illust. by Clive Birch. Index. 20 cm.

• **Summary:** Page 14 gives a description of soya sauce, shoyu, tamari, and miso. Soy-related recipes include: Miso soup with brown rice (p. 30). Miso sauce (p. 54). Tamari sauce (p. 55). Miso rice (p. 125). Craig Sams has also written a book titled *About Macrobiotics*.

"In the early 1960's many people in Europe and the U.S.A. were attracted to the ideas of Georges Ohsawa, a Japanese who had rediscovered the importance of dietary balance in traditional Eastern medicine." He taught macrobiotics, a dietary system in which brown rice plays a major role. "In the world of pop music the expression 'brown rice sandwiches' was used in association with the musicians who adopted wholefood diets." Then in the mid-1970s came the bran boom with an upsurge of interest in sources of dietary fibre, including brown rice.

Why did brown rice ever lose its once pre-eminent position to white rice? "The answer lies partly in the fact that while white rice will keep almost indefinitely, brown rice should be fresh. It attracts insects once it has been husked, so it needs more care in storage and more attention to efficient distribution." White rice also cooks more quickly.

"Pythagoras would not let his students eat beans because he believed they inhibited the higher intellectual processes. However, it is likely that this was because the prevalent bean of classical Greece was the fava bean—harmless in itself but with a hard brown skin which, if regularly eaten, can lead to favism, symptoms of which are deterioration of vision and mental faculties."

2731. Shurtleff, William; Aoyagi, Akiko. 1983. History of soybeans and soyfoods: Past, present and future. 4 vols. Lafayette, California: Soyfoods Center. 2,400 p. manuscript. Forthcoming. 28 cm. [27500+ ref]

• **Summary:** The most comprehensive book of its type ever written. Most chapters are now available in manuscript form. Those that are, are listed individually in this database. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2732. Steinkraus, K.H. 1983. Industrial applications of Oriental fungal fermentations. In: J.E. Smith, D.R. Berry, and B. Kristiansen, eds. 1983. The Filamentous Fungi. 4 vols. Fungal Technology. London: Edward Arnold. See p. 171-89. Chap. 7. Illust. Index. 24 cm. [35 ref]

• **Summary:** Contents: Introduction. The koji principle. Soy sauce / Japanese shoyu as indigenous fermentations. Japanese miso. Japanese saké. Indonesian tempe / oncom—fungal fermented traditional meat analogues. Indonesian tapé ketan and tapé ketella fermentations. Conclusions. Address: New York State Agric. Exp. Station, Geneva, NY 14456.

2733. Steinkraus, Keith H. 1983. Fermented foods, feeds and beverages. *Biotechnology Advances* 1(1):31-46. [70* ref]

• **Summary:** Contents: Abstract. Indigenous fermented foods / beverages: Indian idli, dawadawa (daddawa), soy sauce (Thailand), Indonesian tape, fish sauces, Japanese koji, Nigerian millet beer (oyokpo), Kenyan uji. Microbial / single cell protein (SCP): Mushrooms. Address: New York State Agric. Exp. Station, Geneva, NY 14456.

2734. Steinkraus, K.H. 1983. Traditional food fermentations as industrial resources. *Acta Biotechnologica* 3(1):3-12. First published in 1982 in Saono et al., eds. Traditional Food Fermentations as Industrial Resources in the ASCA Countries. The Indonesian Institute of Sciences (LIPI) Jakarta. p. 3-16. [31 ref. Eng; ger]

• **Summary:** Contents: Summary. Introduction. Production of meat-like flavors from vegetable proteins. Soy sauce (Japanese shoyu) and miso fermentations. Fish / shrimp sauces and pastes. The koji principle. Meat substitutes (analogues). Indonesian tempeh kedele. Traditional tempeh fermentation. Industrial production of tempeh. A process for raising the protein content of high starch substrates.

Leavened bread-like foods without the use of wheat or rye. Coconut protein as an industrial resource. References. Address: New York State Agric. Exp. Station, P.O. Box 462, Geneva, New York 14456.

2735. Tims, William; Allanson, Robert. 1983. Macrobiotic dietary suggestions. Mountain Ark Publishing Co., 109 S. East Street, Fayetteville, AR 72701. 38 p. 22 cm.

• **Summary:** Under “Bean Products,” tofu, tempeh, and natto are mentioned. “Fermented foods make wonderful seasonings for soups and strengthen the digestive function. Those used in making soups include: Miso, shoyu, tempeh, sauerkraut.” There are recipes for Boston baked soybeans, and Boiled tofu. Address: Fayetteville, Arkansas.

2736. Tofu Shop Specialty Grocery & Deli (The). 1983. The Tofu Shop Delicatessen (Poster). Arcata, California. 8½ by 11 inches.

• **Summary:** Printed on front in blue on white with a gold border on glossy cardstock paper: “We make our own tofu: traditional methods for a sweet, delicate taste.

“Delicatessen: featuring fresh food to go. Tofu burgers. Sandwiches. Salads. Desserts with honey. Whole grain breads. Fresh juices. Fresh coffee. Herb teas. Marinated cutlets. Tofu sausages. Baked goods.

Specialty groceries: Fresh tofu. Tempeh. Miso (domestic & imported). Sea vegetables. Macrobiotic supplies. Cook book & recipes. Tofu making supplies.”

In the center is the company’s long-time logo of a blue dragon inside a thick green circle.

“Handmade tofu since 1977.”

A green, blue and gold illustration by Bernice Kagan (left) shows a small tofu shop on stilts on a cliff by the ocean, with an Oriental-style roof and a wind-blown tree arching overhead.

Note from Matthew Schmit. 2009 April 2. “A rather gawdy 1st attempt with a marketing poster. The ‘Blue Dragon’ was phasing out and the ‘Shop on the cliff’ was phasing in as our logo.” Address: 768 18th St., Arcata, California 95521. Phone: 707-822-7409.

2737. Wang, H.L. 1983. Oriental soybean foods. In: Ivan A. Wolff, ed. 1983. CRC Handbook of Processing and Utilization in Agriculture. Vol. II: Part 2. Plant Products. Boca Raton, FL: CRC Press, Inc. See p. 91-106. Illust. Index. 26 cm.

Address: NRRC, Peoria, Illinois.

2738. World of God, Inc. 1983. The cookbook for people who love animals. 2nd ed. Umatilla, Florida. 192 p. Edited by Butterflies. Illust. and cover design by Flowers. No index. 26 cm.

• **Summary:** This vegan cookbook is only slightly different from the 1981 edition by the same title, but is 16 pages

longer. Recipes with soyfood terms in the title are the same and on the same pages as those in the 1981 edition, except the following recipes added at the back of the book: Avocado-tofu dinner (p. 166). Stuffed avocado with tofu (p. 178). Spaghetti and tofu. Baked macaroni and tofu (p. 180). Tofu omelette (p. 181). Tofu cutlets (p. 182).

The book is interspersed with most of the same nice quotes about vegetarianism, veganism, and animal rights from great thinkers found in the 1981 edition. Address: P.O. Box 1418, Umatilla, Florida 32784.

2739. **Product Name:** [Tofu, Tofu Pickled in Miso, Tofu Pâté, Terrine with Tofu].

Foreign Name: Tofu, Tofu Mariné, Pâté de Tofu, Terrine de Tofu.

Manufacturer’s Name: Tofu Kuehn.

Manufacturer’s Address: La Tuiliere, 26560 Montfroc, France. Phone: 92 62 02 76.

Date of Introduction: 1983?

Ingredients: Tofu: Whole French-grown soybeans, spring water, nigari. Pickled: Tofu, miso, onion, ginger, orange.

Pâté: Tofu, whole wheat bread, mushrooms, onions, spices.

Terrine: Tofu, vegetables, onions, spices, leeks, carrots, wheat flakes, tahini, mushrooms.

How Stored: Refrigerated.

New Product–Documentation: Form filled out by Anthony Marrese. 1989. Nov. The company is run by Yves Kuehn and John Marc. These products were introduced in the “early 1980s.” Production and weights are presently as follows: Tofu (250 gm) 30-50 kg/week. Tofu Pickled in Miso 20 kg/week. Tofu Pâté (150 gm) 10 kg/week. Terrine (150 gm). Anthony writes: “I met this group at an organic fair. It is a small group of 5 or so people making tofu really as a meditation. They produce it in small quantities of 5-10 kg through a mechanical hand grinder, then the pâté and pickled tofu are made in a small kitchen.

Leaflet. 1989. In French. Shows labels of the products and briefly outlines Mr. Kuehn’s philosophy that we must move from an animal-based to a plant-based diet.

Note: Emprésurage is the action of adding a curdling agent or coagulant to milk in the process of making cheese. The “préure” is the coagulant.

2740. Leonard, Thom. 1984. Re: Thoughts on miso in America. Letter to William Shurtleff at Soyfoods Center, Jan. 3. 3 p. Handwritten, with signature.

• **Summary:** Thom was surprised and pleased to see the “Ohio Miso” logo in the history chapter of the new second edition of *The Book of Miso*. “I, too, have found it strange that many influential people in the macrobiotic community have such resistance to the use of the English language in describing the varieties of miso.” Thom prefers the terms “brown rice” and “barley” to *genmai* and *mugi*. “Last spring I was asked to give a miso workshop to employees of

Erewhon's retail division. I stressed the importance of demystifying miso, including the use of English variety names. A beginning (belated) at least.

Next month, in Ireland, Thom will "begin making miso on a small scale, 800 pounds a week. My shop space is small, my finances smaller... I don't have a company name yet, but favor The Irish Miso Company, trade name of Eire Miso." "We are renting a beautifully re-done cottage on a south-facing hillside above the River Nore, and will be here at least a year."

Update: Talk with Thom. 1984. Sept. 24. He was in Ireland for a year, but he couldn't raise the money he needed. He planned to export miso to the USA. The Irish economy was slow and the UK market was small. He is planning another miso company. His wife is in Dublin, Ireland. He will go back to meet her there, and then perhaps on to Japan. He is now staying with Jim Hemminger, Remelle Road, Monroeville, Ohio 44847. Address: Kilkieran, Inistioge, Co. Kilkeeny, Ireland.

2741. Westbrae Natural Foods. 1984. Distributor catalog No. 1: Jan. 1984. Emeryville, California: Westbrae. 19 p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on a tan background. Page 18: Glossary for new Japanese items, incl. Seaweed chips with miso, Tamari veggie chips, Vegetable chips with miso, Shrimp chips with miso, Sesame salt "gomashio," Umeboshi vinegar, Umeboshi paste, Tororo kombu, Miso ramen, 5-spice ramen (with powdered soy sauce and miso), Curry ramen (with powdered soy sauce and miso), Agar bar, Miso drops (candy, sweetened with natural rice malt).

Page 19: Sunburst product glossary, incl. Peanut butter domes with honey (with soybean oil, soy lecithin), Herb & cheese dressing (with soybean oil and whole soybeans), Honey mustard dressing (with refined soybean oil), Cinnamon apple granola (with soy oil), etc.

Note: The Sunburst community, which began as an intentional spiritual community in the late 1960s, founded and led by Norman Paulsen, was in its prime [in the 1980s] one of the largest shippers of organic products in the United States. Founded near Santa Barbara, California, the Sunburst members believed in a holistic lifestyle based on meditation, living from the land, organic farming, and—to some degree—chastity (Source: Wikipedia, Dec. 2008). Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (415) 658-7518 (orders).

2742. Chico-San, Inc. 1984. Why does Chico-San bother to import soyfoods? (Ad). *Natural Foods Merchandiser*. Jan. p. 9 (unnumbered) of 12-page color advertising insert. Soyfoods Pavilion '84. Marketing soyfoods in America.

• **Summary:** A 4½ by 7½ inch black-and-white ad. Because the quality of fermented soyfoods made in Japan is considered better. Chico-San's miso-shoyu master is Mr. Tomio Kitani. He uses Japanese soybeans and sea salt rich in minerals. His Nama Shoyu, which takes 4 years to make, is the only unpasteurized soy sauce available in America. It is also the only shoyu with a salt content lowered by techniques not involving extraction or additives. "Taste is the difference."

This ad also appeared in *Macromuse* (1984, Spring, p. 35). Address: Chico, California 95926.

2743. Fantastic Foods. 1984. Tofu Burger: The most fantastic way to enjoy tofu (Ad). *Natural Foods Merchandiser*. Jan. p. 9 (unnumbered) of 12-page color advertising insert. Soyfoods Pavilion '84. Marketing soyfoods in America.

• **Summary:** This 5 inch square black-and-white ad begins: "Fantastic Foods' Tofu Burgher Mix makes it so easy to enjoy tofu. Just mash one pound of tofu and combine with our mix, shape into patties, and cook. In just minutes you will be enjoying delicious and nutritious tofu burgers. We make our Tofu Burger Mix from the finest all natural, all vegetarian ingredients like brown rice, sesame seeds and miso." An illustration shows the front of a package of Tofu Burger Mix. Address: 106 Galli Drive, Novato, California 94947. Phone: (415) 883-7718.

2744. Hatch Natural Products. 1984. Catalog and price list. 746 Germanna Highway, Culpepper, VA 22701. 76 p. 28 cm.

• **Summary:** This company distributes natural foods from 48 manufacturers including Arrowhead Mills, Chico-San Inc., Eden Foods Inc., Edward and Sons Trading Co., Fantastic Foods, Great Eastern Sun, Kingdom Foods, Living Farms, Love Natural Foods, Mitoku (Great Eastern Sun), Virginia Soyworks, and Westbrae Natural. The company was founded by Mildred and Ira Hatch; Its history is given on page 1. The ingredients in each product are listed. They carry soybeans (p. 16-17), dinner mixes with TVP (p. 31-32), imported Japanese miso and soy sauce (p. 37-43), soybean oil (from Arrowhead Mills p. 60-61).

Concerning so-called "cold pressed" oils the catalog states: "The words 'cold pressed' on many oil labels is generally thought to mean that they contain natural oils processed by the low temperature and pressure method discussed above. But this is totally mistaken. The words 'cold pressed' are absolutely meaningless when used as an indication of quality. They have no bearing on how the oil was extracted or at what temperature it was removed. They appear only as a marketing aid which just confuses and misleads the consumer and may be found on oils that are chemically extracted, bleached, and deodorized. Reputable suppliers refuse to use the term on their labels.

“Oils are extracted by two methods: pressure and chemical solvents. Pressing is normally done by what is called an expeller press. Temperatures produced seldom fall below the 140° to 160°F range. Still, the oil produced at these temperatures loses little of its flavor and nutrition.”

Concerning soybean oil: “Soy oil’s flavor is the strongest of all the oils, and many people find the unrefined product unbearable. Its flavor is best described as fishy or painty and lacks stability.” Address: Culpepper, Virginia. Phone: (703) 825-4302.

2745. Shin Mei Do Miso. 1984. Denman Island Miso (Unpasteurized) (Leaflet). Denman Island, British Columbia, Canada. 1 p. Front and back. 22 cm.

• **Summary:** Side 1 is an introduction to miso plus one recipe and a plug for *The Book of Miso*, by Shurtleff & Aoyagi. Side 2 is 4 miso recipes. Printed with brown ink on beige paper. Address: Denman Island, BC, Canada, V0R 1T0.

2746. Soyfoods Assoc. of America. 1984. Soyfoods Pavilion '84. Marketing soyfoods in America (Ad). *Natural Foods Merchandiser*. Jan. 12-page color advertising insert.

• **Summary:** Contains large color ads by Legume Inc. (6 frozen tofu entrees), Erewhon, Inc. (shoyu tamari), Vitasoy (USA), Inc. (natural and coconut soy drink, sweetened with maple syrup), San-J International, Inc. (tamari, teriyaki sauce, tamari crackers, teriyaki crackers), Tofu-Time, Inc. (Tofutti “nondairy tofu frozen dessert”), Eden Foods, Inc. (Edensoy soy beverage in plain and carob flavors, retort pouch), and Westbrae Natural Foods (natural ramen in 100% whole-wheat, buckwheat, brown rice, mushroom, seaweed, miso, 5-spice, and curry flavors).

Contains black-and-white ads by Westbrae Natural Foods (shoyu, tamari, and soy sauce), Chico-San, Inc. (imported miso and soysauce), Fantastic Foods, Inc. (tofu burger mix), Penguin's, Inc. (dairy-free frozen dessert), Nasoya Foods (Firm Style Tofu, Soft Style Tofu, Marinated & Broiled Tofu, Tofu Burgers, Tempeh, Tempeh Burgers, Tofu Vegi-Dip [Creamy Dill, Soyonnaise, Bleu Cheese, Onion, Creamy Garlic], Corn Cakes [Plain with Bran, Blueberry, Cranberry]; Non-soy products in the “Oriental Cuisine” line include Fresh Noodles, Wonton Skins, Egg Roll Wrappers), Hinode Tofu Co. and Azumaya, Inc. (“The #1 and #2 tofu producers in America”).

The only article, whose author is not given, is titled “Soyfoods Pavilion debuts at Natural Foods Expo '84.” On the front cover of the insert is a list of members of the Soyfoods Association of America (formed in Feb. 1983) that participated in Natural Foods Expo '84. In addition to the advertisers mentioned above, they include: Farm Foods, Laughing Moon Food Co., Paradise Distributors, Inc., Soyfoods Magazine, Tempeh Works, Inc., and White Wave, Inc. Address: 526 East 20th St., New York, NY 10009.

2747. **Product Name:** Miso Drops (Candy).

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.

Date of Introduction: 1984. January.

Ingredients: Natural rice malt (whole grain rice, organic sprouted barley, spring water), miso (brown rice, soybeans, water, sea salt).

Wt/Vol., Packaging, Price: 1.76 oz. (50 gm).

How Stored: Shelf stable.

New Product–Documentation: Westbrae Natural Foods. Distributor catalog No. 1: Jan. 1984. Product label. 4 by 3.5 inches. Red and dark blue on gold.

2748. **Product Name:** Buckwheat Miso (“Soba miso”).

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.

Date of Introduction: 1984. January.

Ingredients: Whole soybeans, buckwheat, water, sea salt.

Wt/Vol., Packaging, Price: 17.6 oz (499 gm).

How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Westbrae distributor catalog. 1984. Jan. 10. p. 10. Product label. 3 by 3.75 inches. Brown and dark blue on gold.

2749. Westbrae Natural. 1984. The uncommon ramen (Ad). *Natural Foods Merchandiser*. Jan. p. 12 (unnumbered) of 12-page color advertising insert. Soyfoods Pavilion '84. Marketing soyfoods in America.

• **Summary:** This full-page color ad begins: “We’d all like to enjoy wholesome, home-cooked food at every meal, but few of us have the time.” “Our Whole-Wheat Ramen is made entirely of 100% whole-wheat flour, complemented by a classic miso broth. Special broths and noodles create 7 other uncommon flavors: Westbrae Buckwheat, Brown Rice, Mushroom, Seaweed, Miso, 5-Spice, and Curry ramens.” A large photo shows a bowl of noodles with broth, ready to eat. It is surrounded by whole mushrooms, leeks, and snow peas, sliced red peppers, mushrooms, cucumbers, and diced tofu.

2750. Yoshihara, LuLu. 1984. Re: Varieties of Shin-Mei-Do miso, ingredients, ages, and prices for 10 lb post paid. Letter to Lorenz A Schaller, California, Feb. 13—in reply to inquiry. 1 p. Handwritten, with signature on letterhead.

• **Summary:** Red miso, 1½ years, \$25.15. Barley miso, 2 years, \$25.15. Brown rice miso, nearly 3 years, \$26.35.

A business card (printed with brown ink on beige paper) accompanies the letter.

2751. Kotsch, Ronald E. 1984. Natural foods pioneer Erewhon. *East West Journal*. Feb. p. 24-29.

• **Summary:** A very well written and accurate history of Erewhon from its founding in 1966, to its declaration of Chapter 11 bankruptcy in the fall of 1981. The company was able to clear its \$3 million indebtedness by paying 11 cents for each dollar owed. In early 1982 “the company was sold by the Kushis to Ron Rossetti, owner of the Nature Food Centres retail chain. Later that year [in July] Rossetti accepted as financial partners Charles T. Verde and Cynthia C. Davis, who became respectively president and vice president of marketing. Since then the operation has been totally in their hands. Erewhon has a production facility at Natick, Massachusetts.” A photo shows Davis and Verde with 5 Erewhon products.

2752. Shim, Chung-shil. 1984. Korean recipes. Seoul, Korea: Seoul International Tourist Publishing Co. 79 p. Feb. Illust. (color photos by Edward B. Adams). Index. 26 cm.

• **Summary:** Recipes include: Five grain rice (-*kok pap*, with ½ cup each red beans and black [soy] beans). Rice with soy bean sprouts (*Kong namul pap*). Mixed vegetables on rice (*Pibim pap*, with 100 gm soy bean sprouts, soy sauce, and red pepper paste). Dumplings (*Mandu kuk*, with 150 gm beancurd [tofu]). Seaweed soup (*Miyok kuk*, with 50 gm brown seaweed [*Miyok*] and 2 tablespoons soy sauce). Soy bean sprout soup (*Kong namul kuk*). Soy bean paste stew (*Toinchang ch'igye [doenjang]*, with 2 tablespoons soy bean paste and 200 gm beancurd). Beancurd with beef (*Tubu chorim*, plus 3 tablespoons soy sauce). Curd with vegetables (*T'angp'yong Ch'ae*, with 250 gm mung bean curd, 200 gm soy bean sprouts, and 2 tablespoons soy sauce). Bean pancake (*Pindae tok*, with 50 gm soy bean sprouts and 4 tablespoons soy sauce).

Each recipe is accompanied by a large color photo. About the author: She is a publisher, artist, and wife of Edward B. Adams, Headmaster of Seoul International School. She has developed a keen interest in Korean cooking, and has chosen here the simple dishes that are most popular among foreigners. She was educated in California, where she married. A color photo shows Shim Chung-shil. Address: Founder, Seoul International Publishing House.

2753. **Product Name:** Barley Miso, Brown Rice Miso, and Yellow Flint Corn Miso [renamed Mellow Flint Corn Miso in 1983].

Manufacturer's Name: South River Miso Co. Inc.

Manufacturer's Address: South River Farm, Conway, MA 01341. Phone: (413) 369-4057.

Date of Introduction: 1984. February.

New Product–Documentation: Ad in *East West Journal*. 1983. Nov. p. 88. “South River Miso. Wisely given miso gives its own wisdom.” Features organically grown grains,

wood-fired cooking, deep well water, and naturally aged in great wooden vats. “This winter and spring [i.e. early 1984] we will harvest several varieties of miso aged 9 months to 1 year in addition to our light miso aged three months. These include Barley, Brown Rice (Lundberg short grain), Black Barley (made with black soybeans) and Yellow Flint Corn miso. Some varieties are made with Naboru [sic, Noboru] Muramoto’s Baja sea-salt, Brittany, and Lima sea salt. We leave our miso in its unpureed state, giving it a traditional whole koji texture. It is not pasteurized or heat treated in any way... now available in unpasteurized one-pound packaging for retail stores and co-ops.” An illustration shows the company buildings.

Talk with Christian Elwell of South River Miso Co. 1999. Dec. 16. Yellow Flint Corn Miso was renamed Mellow Flint Corn Miso in 1983.

2754. Jenkins, Nancy. 1984. From Vietnam, subtle mix of flavors. *New York Times*. March 21. p. C1.

• **Summary:** Estimates of the Vietnamese population of New York City range from 10,000 to 20,000; all agree that the number is growing. In the last few years at least six Vietnamese restaurants have opened in Lower Manhattan.

Nuoc mam is the fundamental ingredient in Vietnamese cuisine; it is used as a seasoning in almost every dish, taking the place of salt and soy sauce. The best quality nuoc mam comes from Phu Quoc, an island off the south coast of Vietnam.

Another important seasoning is tuong, a sweet bean sauce [made from soybeans]; it can be purchased at a number of grocery shops in Chinatown, such as Hoa Than (218 Canal St.) and Thuan-Nguyen (82 Mulberry St.). When Vietnamese from all over New York City do their weekly shopping on Sunday morning, one of the foods they buy is “soft little cakes of sticky rice with sweet yellow bean paste inside.”

A recipe for Ba-Nam’s nem nuong with Nuoc leo sauce calls for “2 tablespoons tuong” as an ingredient.

Chef Huy’s chicken with lemon grass calls for “1 tablespoon nuoc mam” and “1 tablespoon thick soy sauce” as ingredients.

2755. Vansickle, Janice. 1984. Bean worth weight in gold. *Windsor Star (Essex County, Ontario, Canada)*. March 26. p. B1-B2.

• **Summary:** Soybeans are now Essex County’s major field crop and the third largest cash crop in Ontario province (with a value of more than \$203 million in 1982), but few people know what happens to the golden nuggets after they leave the farm. Most of the soybeans are crushed in Canada to make soybean oil and meal. Last week the Ontario Soybean Growers’ Marketing Board held a symposium in Toronto titled “Ontario soybeans—A journey into the next century.” Sheldon Hauck, vice-president of the Soy Protein

Council in the USA and one of the speakers estimated that soy protein is an ingredient in over 2,500 readily available grocery store items. Contains a nice history of the soybean in Canada. Ontario now exports soybeans to 20 countries, “including major shipments to Japan, which buys only top quality soybeans and turns them into soyamilk, soyaflour, tofu, miso—a soyapaste for soup—and natto—a fermented soybean used as an appetizer.” Speaker after speaker confirmed a bright future for soybean exports. Moreover, all supermarkets in Windsor now carry tofu, a soya curd. Soy oil is found in margarine and cooking oils. Soy protein appears in soya sauce, simulated bacon bits, and infant formulas. The H.J. Heinz Company in Leamington has been working with the marketing board to develop a line of processed soybean products for the retail market.

Ontario’s three soybean crushing plants are experiencing hard times, in part due to competition from canola oil (which enjoys subsidized freight rates); they are operating at 62% of capacity and could be forced to shut down. Photos show: A pair of cupped hands holding soybeans. Peter Epp, chairman of the Ontario Soybean Growers Marketing Board.

Note: This is the earliest English-language document seen (March 2009) that uses the term “soyapaste” to refer to miso. Address: Star agriculture reporter.

2756. *Mainichi Shinbun (Mainichi Daily News)*. 1984. Miso wa gan ni tsuyoi [Researchers say miso is a good anticancer agent]. March 31. p. 1. [1 ref. Jap; eng+]

• **Summary:** See English version of this in the *Mainichi Daily*, April 1.

2757. Caty, Thérèse. 1984. Dossier: Le soja [Dossier on soyfoods in France]. *France Dietétique*. Feb/March. p. 24-31. [Fre]

• **Summary:** This extremely interesting article gives an introduction to the various soyfoods, then list all known soyfoods products sold in France, complete with the brand, product name, ingredients, nutritional composition, weight or volume, and packaging. The last half of the paper is a French translation of a paper titled “The American boom in traditional soy products,” presented by Richard Leviton on 11 Oct. 1983 at a conference in Parma, Italy.

The following products, manufacturers/marketers (and brands) are listed: 1. Whole soybeans and flour: Lima (Organic soybeans, organic whole soy flour). 2. Textured soya: Charusse, Soyavit. 3. Convenience prepared foods for vegetarians: Pural (Frika Vita, Sojafleisch, Pasta Chuta, Sojavite, Soja Mignon, Sojanelles, Sojanelles épicées), Hera (Croq Meal, Herameal, Végémeal, Potage), Fritini (Aux herbes). 4. Liquid soymilk: Celnat (Soyo), Lima, Pural (Sojlactis), Sapov (Sojal), Provamel (Soya Drink, Soya dessert choco [a pudding, made by Alpro in Belgium]), Naturvit (Soyalet, Soyalet sans sucre). 5. Tofu: Le Bol en

Bois (Koya-dofu), Soy (Tofu, Croque Tofu [6 types]). 6. Tempeh: Traditions du Grain. 7. Miso: Celnat (Brown rice miso imported from Japan, Barley miso), Lima (Hatcho miso, barley miso). 8. Soy sauce: Celnat (Shoyou), Lima (Tamari, Tamari Shoyu). Address: France.

2758. Gotoh, K. 1984. Historical review of soybean cultivation in Japan: Scientific approaches (1946-1977) (Document part). *Tropical Agriculture Research Series* No. 17. p. 138-40. March.

• **Summary:** “1. Characteristics of this period: Extensive research work on soybean breeding and cultivation started after World War II. Nagata (1955) wrote a book on soybeans in a comprehensive manner, based on domestic and foreign information. It may be said that Nagata’s publication was the first well written Japanese book on soybeans.

“The progress of research works was compiled by Saito (1972; breeding), by Kaizuma and Fukui (1972; quality breeding), by Konno (1972; physiology) and by Matsumoto and Ohba (1972; production techniques) in the Proceedings of the Symposium on Food Legumes held at the Tropical Agriculture Research Center in 1972.

“In the early stage of this period, production of soybeans for oil was attempted. However, since the quantity of soybeans imported from the USA increased, especially after 1961 when the Japanese market was opened for soybean importation, production became restricted to protein use or food.

“During this period the constraints on soybean production were analysed in each area in Japan...

“Thus breeding for overcoming these hazards was undertaken and cultivars showing cool weather tolerance, cyst nematode resistance, virus disease resistance, resistance to several important diseases, and lodging resistance were released in each location.

“One of the important objectives of breeding was to obtain cultivars with white hilum of grains which was requested from the processing industry, especially for miso production. Thus, 30 of a total of 43 cultivars released from 1961 to 1977 had white hilum. As mentioned previously, large seed size was preferred for consumption, and the cultivars with large seed size became predominant. However, several cultivars with small seeds were maintained for natto production.

“2. Genetic resources: During the period 1952-1954 surveys on land races of soybeans were conducted and the data were summarized in 1957. According to the results, Tohoku had abundant genetic resources. Almost all of the land races were grown in dikes surrounding paddy fields and some were used for soiling under alluvial and diluvial soil conditions and for the cultivation of vegetable beans.

“It was well known that the wild soybean (*Glycine soja* Sieb. et Zucc.) is native to Japan, except for Hokkaido.

However, in 1973 this variety was observed along the river Saru in the Hidaka area of Hokkaido and thereafter along several rivers there...

“3. Cultivation practices recommended: Several research workers attempted to introduce modern technology for the management of soybeans...

“4. Physiological studies: Fukui and Arai (1951) classified cultivars, based on the length of growth from germination to flowering and flowering to maturity. This classification which does not correspond with the maturity groups of the USA is widely used in Japan. Groups Ia, Ib, and IIa belong to the so-called summer type, IIb, IIc, IIIb, and IIIc to the intermediate type, and IVc and Vc to the autumn type, respectively...

“5. Plant density: Although progress has been made in the understanding of soybean characteristics as a crop, the cultivation of soybean in practice is still based on sparse planting on an individual plant basis. This concept may be due to the fact that under the hot and humid conditions prevailing in Japan luxuriant growth and severe lodging are likely to be associated. Thus plant growth must be inhibited and the number of branches must be increased for increasing the number of nodes in turn results in the increase in the number of pods. Consequently, cultivars bred before 1960 were generally adapted to such growing conditions. However, several cultivars bred after 1961 had a stiff stem and seemed to be adapted to dense planting. These findings suggest that the plant type has been changing from the branching type to the main stem type in which a larger proportion of pods occurs on the main stem, and lodging resistance becomes far more important.

“6. Differences between record yields and average yields: During this period record yields were obtained in several Agricultural Experiment Stations and in some yield contests as outlined in the paper of Gotoh (1982). However, the average yield of soybeans was low as usual, namely, less than 1.5 tons.” Address: Faculty of Agriculture, Hokkaido Univ., Nishi 9, Kita-ku, Sapporo, Japan.

2759. Hong, E.H.; Kim, S.D.; Hwang, Y.H. 1984. Production and use and research on soybeans in Korea. *Tropical Agriculture Research Series* No. 17. p. 81-93. March. International Symposium on Soybean in the Tropics and Subtropics.

• **Summary:** Abstract. Trends in soybean production: importance of soybeans, area planted, yield, production and import, regional distribution. Trends in supply and consumption: demand and supply, utilization. Methods of cultivation currently applied: cultural practices (planting time, land preparation and planting, fertilizer application, management, harvesting and processing, marketing and procurement, cropping patterns, competitive power), varieties and their distribution, major diseases and pests, problems in farm cultivation. Soybean research and

extension service. Government participation in and support for soybean production. Future prospects of soybean production and main constraints. Discussion.

In Korea, soybeans rank third among all food grain crops, in both the area planted and in production, after rice and barley. Soybean “products such as soy paste [doenjang], soy sauce [kanjang], beancurd [tofu] and beansprouts are the primary side dishes in conventional daily Korean meals.” The area planted to soybeans has steadily decreased from about 300,000 acres average in 1967-1971 to only 183,000 acres in 1982.

Tables: (1) Area planted and production of major food crops in Korea. (2) Production, yield and import of soybeans by year in Korea. (3) Regional distribution of soybean production in Korea. (4) Demand and supply of soybeans in Korea. (5) Utilization of soybean in Korea. (6) Regional distribution of soybean planting times in Korea. (7) Results of sample investigation for the application of herbicides on soybean in Korea. (8) change of cropping systems in the central part of Korea. (9) Farm income derived from major summer crops in Korea. (10) Characteristics of main soybean varieties currently recommended and their geographical distribution in Korea. (11) Research institutions, location and number researchers related to soybeans in Korea. (12) Amounts, area planted, and production for every class of soybean seeds in Korea in 1982. (11) research institutions, location and number of researchers related to soybeans in Korea. (12) Amounts, area planted, and production for every class of soybean seeds in Korea in 1982. (13) The amount and purchasing prices of soybean by the government and the prices of imported soybeans by year in Korea. Figures: (1) Marketing channels for soybean in Korea. (2) Flow chart of soybean research and extension services in Korea. Address: Crop Exp. Station, Office of Rural Development, Suwon 170, South Korea.

2760. Kantha, S. Sri; Erdman, John W., Jr. 1984. The winged bean as an oil and protein source: A review. *J. of the American Oil Chemists' Soc.* 61(3):515-26. March. [160* ref]

• **Summary:** The past 10 years of published literature concerning nutritional studies on and uses of the winged bean are reviewed, including its origin and cultivation, its overall proximate composition, its nutritional value and antinutritional factors, the functional properties of its proteins, and its use in protein based foods (supplemented breads, weaning food products, fermented products, winged bean milk and tofu). Address: Dep. of Food Science, Univ. of Illinois, Urbana.

2761. Konno, S. 1984. Soybean production in Japan. *Tropical Agriculture Research Series* No. 17. p. 95-102.

March. International Symposium on Soybean in the Tropics and Subtropics.

• **Summary:** Abstract. Trend in soybean production. Trends in supply and consumption of soybeans. Methods of cultivation currently applied in Japan. Soybean research and extension. Government participation in and support of soybean production. Future prospects of soybean production and main constraints. Discussion. Tables: (1) Production and trade of soybeans in Japan. (2) Soybean consumption in Japan. (3) Varieties registered during the last decade. Figures: (1) Soybean production by region in Japan (1983). (2) Planting and harvesting time of soybean in Japan. (3) Centers for breeding and research on soybean affiliated to the Ministry of Agriculture, Forestry and Fisheries in Japan. Address: Tropical Agriculture Research Center, Yatabe, Tsukuba, Ibaraki 305, Japan.

2762. Mori, Yutaka; Kiuchi, Kan; Tabei, Hideo. 1984. [Flavor components of miso: Basic fraction]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 44. p. 158-63. March. [21 ref. Eng; jap]

• **Summary:** Reprinted from *Agricultural and Biological Chemistry* 47(7):1487-92 (1981). Address: Div. of Applied Microbiology, National Food Research Inst., Yatabe, Tsukuba-gun, Ibaraki 305, Japan.

2763. Na Lampang, Arwooth. 1984. Soybean production in Thailand. *Tropical Agriculture Research Series* No. 17. p. 37-43. March. International Symposium on Soybean in the Tropics and Subtropics. [6 ref]

• **Summary:** Abstract. Soybean production in Thailand. Cropping patterns and practices. Varietal adaptation and improvement. Pest management. Harvest and storage. Marketing. Consumption and utilization. Prospects and constraints. Acknowledgement. Discussion. Tables: (1) Soybean acreage, yield and production in Thailand (1971-81). (2) Balance of soybean export and importation during 1976-1980. (3) Soybean prices at different locations (US g/kg) (1977-1981). Address: Field Crop Research Inst., Dep. of Agriculture, Bangkok, Bangkok 10900, Thailand.

2764. Saio, Kyoko. 1984. Dietary pattern and soybean processing in Japan today. *Tropical Agriculture Research Series* No. 17. p. 153-61. March. International Symposium on Soybean in the Tropics and Subtropics. [1 ref. Eng]

• **Summary:** Abstract. Consumption of soybeans in Japan. Varieties and processing of soybean foods. Traditional technology for modern products and emerging technology applied to traditional foods. Reference. Discussion. Tables: (1) Intake of Kcal/day/person. (2) Intake of protein/day/person. (3) Intake of fat/day/person. (4) Comparison of intake of nutrients among various nations. (5) Supply and demand of whole soybeans in Japan. (6) Detailed use of

whole soybeans supplied for food. Figures: (1) Flow sheet of Momen Tofu preparation. (2) Flow sheet of Kori Tofu preparation. (3) Flow sheet of Shoyu (soy sauce) preparation. (4) Flow sheet of Kome Miso preparation. (5) Flow sheet of soy milk preparation. (6) Manufacture of vegetable protein products. Address: National Food Research Inst., Yatabe, Tsukuba, Ibaraki 305, Japan.

2765. Sim, William J. 1984. Farmers' experiences and experiments with growing soybeans [in Ontario, Canada]. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 73-78.

• **Summary:** The author grows 500 acres of soybeans in Ontario. Soybean production in Canada is subsidized by the federal government. "Until 1973, the only export of any consequence was to the United Kingdom, mainly because of the preferential trade benefit. This was phased out in the early 1970s and export sales greatly diminished. In 1973, after years of frustration, the Soybean Board subsidized a shipment of about 30,000 bushels to Japan for the human consumption market, mainly miso and tofu. Since then, the quality of Ontario soybeans has become so renown in the Pacific Rim countries that 1982 exports to this area accounted for 2.2 million bushels. The potential of this market is almost unlimited..."

"In summary, I would like to say that I am excited about our soy production. It is like a new lease on life to grow something other than corn. We'll probably never get rich at it, but we'll enjoy trying." Address: Farmer, Moore township, Lambton County, ONT, Canada.

2766. Somaatmadja, Sadikin. 1984. Development of soybean culture in Indonesia. *Tropical Agriculture Research Series* No. 17. p. 23-36. March. International Symposium on Soybean in the Tropics and Subtropics. [3 ref]

• **Summary:** Contents: Abstract. Area and production: Share in national food production, national soybean production, producing centers, soybean area. Supply and demand situation: Export and import, future demand and production, utilization. Methods of cultivation: Cropping system, cultivation, pests, diseases and other problems. Research and CRIFC: Research program and activities. Support for soybean production. Further prospects and main constraints. Discussion (questions and answers).

Utilization (p. 28): "1. Side-dish with rice: Tempe (fermented soybean cake), tahu (soybean cake), taucu (soybean paste), tauge (soybean sprout), kecap (soy sauce) and goreng kedelai (fried soybeans). Of these, tempe and tahu are very important in the diet of the people.

"2. Snacks: Roasted soybeans, kerupuk tahu (tahu chips), boiled young soybean pods" [edamame].

Tables: (1) Annual average soybean production during and before PELITA (Five-year development plan, 1964-

1981). (2) Soybean production in the last six years, 1977-1982 (East Java, Yogyakarta, Lampung, Central Java, Nusa Tenggara Barat {NTB}, West Java). (3) Soybean production in six [major soybean producing] provinces, 1988-1981. (4) Soybean production in four additional centers, 1977-1981 (D.I. Aceh, N. Sulawesi, Bali, S. Sulawesi). (5) Soybean harvested area, yield and production in sawah (rice fields) and tegalan (dry land), 1979-1981. (6) Export and import of soybean, 1969-1982 (Indonesia was a small exporter until 1977 when exports stopped; imports over 100,000 tonnes began in 1976, and by 1982 had risen to 476,000 tonnes). (7) The estimated demand for soybean and production target, 1983-1988 (Source: Directorate General of Food Crops). (8) The important insects of soybean. (9) Improved soybean varieties. (10) Packages of technology in the intensification and areal [area] expansion programs.

Graphs: (1) Demand, production, and import of soybeans, 1978-1982. (2) Target of soybean area, 1983-1988 (tegalan field area is expected to rise rapidly; sawah field area will stabilize starting in 1985). A map of Indonesia (p. 31) shows seven research institutes under the Central Research Institute for Food Crops (CRIFC). They are located in Bogor, Sukamandi, and Lemband (W. Java), Sukarami (W. Sumatra), Banjarmasin (S. Kalimantan), Maros (S. Sulawesi), and Malang (E. Java). Address: Central Research Inst. of Food Crops, JL Merdeka 99, Bogor, Indonesia.

2767. Suzuki, Steven. 1984. Pacific Rim potential for edible soybeans. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 224-41.

• **Summary:** Soybeans were first exported from Canada about 12 years ago when a Japanese house approached the Ontario Soybean Grower's Marketing Board for a trial shipment to Japan. The trial worked out very well and in a short time Ontario's soybean exports became a multi-million dollar business. Ontario soybeans are very clean, the quality is comparable to Japanese and Chinese soybeans, and the supply is consistent. However the price is high in relation to Chinese and U.S. soybeans. As a result, Ontario soybeans are sold in high-priced markets, as for making premium quality miso or soyamilk. The supply of Chinese soybeans is irregular. Address: Manager, Grain Trading Section, Okura & Co. America Ltd., New York, NY.

2768. Wernham, Les. 1984. Exports-Problems and opportunities [for Canadian soybeans]. In: Ontario Soya-Bean Growers' Marketing Board. ed. 1984. Ontario Soybean Symposium. Chatham, Ontario, Canada: OSGMB. 319 p. See p. 246-53.

• **Summary:** Soybean exports from Ontario have expanded dramatically during the past 10 years; in 1982 they reached a high of 132,000 tonnes worth \$44 million. The East Asian

market including Japan, Korea, Hong Kong, and Malaysia accounted for 81% of Ontario's export soybean sales in 1983, with an additional 8% going to Europe. The main buyers in 1982 were: Japan 47,414 tonnes, Netherlands 19,545 tonnes, Singapore 18,039 tonnes, Indonesia 16,652 tonnes, Hong Kong 15,234 tonnes.

Most of these soybeans are sold for human consumption. "For example, one of Sweden's foremost pharmaceutical manufacturers has in the past years been that country's largest single importer of Canadian soybeans. Taking about 3,000 tons annually, this company produced a patented intravenous nourishment called Intralipid." Tiny soybeans (5 mm diameter or less) are used to make bean sprouts and natto. For soybean exports, freight constitutes an average 21% of the net delivered cost to the buyer in his country. They are shipped in bagged or bulk (20 or 40 foot) containers. The main focus of breeding should be to develop varieties that do not carry a common bitterness or beany flavor. Address: Grain Manager, King Grain, Chatham, ONT, Canada.

2769. *Mainichi Daily*. 1984. Researchers say miso good anticancer agent. April 1. p. 12 (B). Sunday. Summarized in East West Journal as "Miso and Cancer Update," July 1984, p. 11. [1 ref. Eng]

• **Summary:** Miso contains substances capable of controlling the growth of cancer. This finding was announced by a team from Tohoku Univ. in Sendai, Japan, headed by Prof. Shuichi Kimura. A formal report will be presented at the meeting of the Agricultural Chemical Society of Japan to be held this month in Tokyo. "The finding also confirms the popular belief in the effectiveness of miso soup against cancer, especially stomach cancer. The specific anticancer substances in miso appear to be combinations of fatty acids and ethanol, or ethylesters of fatty acids. The most effect of these is linolenic acid ethylester. In all, these anticancer ethylesters of fatty acid content account for some 0.5% of miso. Yet they are 'so effective against cancer that 10 milligrams, or the amount in an ordinary cup of miso soup, can completely eradicate the toxicity of 5 micrograms of benzopyrene, a powerful carcinogen,' according to Prof. Kimura. 'One kilogram of beef, entirely charred, can produce only 1 microgram of this carcinogenic chemical, thus indicating how miso soup is effective against cancer.'"

2770. Kawamura, Wataru. 1984. Re: Miso in America. Letter to William Shurtleff at Soyfoods Center, April 9. 1 p. Handwritten, with signature. [1 ref. Jap]

• **Summary:** Mr. Kawamura is widely known in Japan as "Miso Sensei" (miso teacher). Address: 2-4-7 Kugenuma, Tachibana, Fujisawa-shi, Kanagawa-ken 251, Japan. Phone: 0466-22-1351.

2771. Hesseltine, C.W. 1984. Re: NRRL history and culture collection. Dr Church, Dr. Raper, and Dr. Thom. Letter to William Shurtleff at Soyfoods Center, April 10. 1 p. Typed, with signature on letterhead.

• **Summary:** “In 1984 the NRRL culture collection contained 77,000 strains of molds, yeasts, and bacteria. It was staffed by 6 full-time curators,” of which two maintained the mold collection.

According to Dr. Raper, Dr. Church left USDA and went to a small college in Urbana, Ohio. Dr. Raper also provided a number of accounts about Dr. Thom.

“You might be interested to know that we have Dr. Thom’s original notebooks and his entries of the *Aspergilli* and *Penicillia*. I also rescued a drawerfull of correspondence on soy food going back into the 20’s and perhaps earlier about miso, shoyu, and other soy foods. For instance, there is one folder with nothing but Japanese and Chinese labels of soy foods.” Address: Chief, Fermentation Lab., USDA/NRRC, Peoria, Illinois.

2772. Bates, Cynthia. 1984. Re: History of The Farm’s work with tempeh. Letter to William Shurtleff at Soyfoods Center, undated. 3 p.

• **Summary:** Alexander [Lyon] and Dianne Darling began experimenting with tempeh in about 1972. Dr. Hesseltine had sent some literature and starter culture on the hunch we would be interested. I did not work at the [Soy] Dairy at this time, but I have been told about this time space by others who did work there then. Alexander was the Dairy straw boss and overview person; he set up the [soy] milk operation and ran it. Dianne mostly worked with the cultures and got into miso for the most part, I was told, but didn’t get into tempeh so much because she thought large scale production was not practical. Occasionally she and Alexander would make a small batch of tempeh, enough for the people who worked there to get a taste. Deborah Flowers started working at the Dairy and liked tempeh, and wanted to turn the Farm onto it. She made a couple of large batches, incubated in the boiler room at the Canning and Freezing plant, that were served for breakfast two different times at our community kitchen; that was the first time I tasted it. Deborah was trying to figure out ways to produce enough spores, a limiting factor along with the lack of an incubator...

“In 1974 I was researching algae for alternative protein sources in human foods and wanted to start an algae farm. I joined the [Soy] Dairy because soy systems looked like a good intermediate step that would accomplish the same ends (i.e. feed more people with less waste). One day we (the Dairy [soy] milk crew, Mary Hubbard, Marsha Ellis, JoAnne Else, and I) made some soy pulp [okara] sausages. Soon after I adopted the project and built an incubator out of an old refrigerator. JoAnne showed me the way the Dairy was currently making spores–inoculating petri dishes of

chopped sweet potatoes (sterilized) with cultures in test tubes. Alexander taught me basis lab procedure: transferring cultures with a needle, making agar slants, doing serial dilutions.

“November 1974 is the first recorded batch of tempeh in the Tempeh Shop, but I was not keeping very good records at the time. I made 20-30 pound batches out of soy pulp [okara] for the rest of the year. Alexander [Lyon] scored us the Flour Mill’s old bean dryer for an incubator which we used into 1975. At that time Alexander was still the overall manager of the [Soy] Dairy and, although he didn’t actually work at the tempeh shop, he would come in and do a project sometimes, be encouraging, give advice. He was the Dairy expeditor and teacher. Deborah Heavens and Valerie Epstein both worked at the Tempeh Shop at different times in its first year.”

“So far I haven’t been able to come up with a documented date on the first printed instructions [for making tempeh]. They were most likely written in 1975 after *The Farm Vegetarian Cookbook* came out, but they may have been published in late 1975 or early 1976.” Address: The Tempeh Lab., P.O. Box 208, Summertown, Tennessee 38483. Phone: 615/964-2286.

2773. Jacobs, Susan. 1984. The Cultured Club. Fantastic fermented foods. *Vegetarian Times*. April. p. 44-45, 47-48.

• **Summary:** A brief introduction.

2774. Leviton, Richard. 1984. Japanese soyfoods. In: Camille Cusumano. 1984. *Tofu, Tempeh, & Other Soy Delights*. Emmaus, Pennsylvania: Rodale Press. x + 261 p. See p. 144-49.

• **Summary:** Contents: Brief biography of Leviton and introduction. Deep-fried and grilled tofu treats: age, atsuage, ganmo, yaki-dofu, doufu-gan. Tofu haute cuisine (at 280-year-old Sasa-no-Yuki in Tokyo, dried-frozen tofu, wine-fermented tofu). Delights of soymilk and yuba (incl. Yuba Han). Natto, miso, and savory soy condiments (incl. Hamanatto or “savory soy nuggets,” thua nao from Thailand, and natto miso). And still more: Cooked soybeans with wakame, “soy sprouts packed in a sausagelike clear tube, green soybeans in the pods, *kinako* powder (a flour made from dry roasted soybeans, used as a basis for confections or nut butters), freeze-dried instant miso soup powder, instant silken tofu powder (just add water and stir), and dry meat sauces for tofu.” Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2775. Leviton, Richard. 1984. The organic Garden of Eden: A Michigan-based natural foods company [Eden Foods] stresses quality and fidelity. *East West Journal*. April. p. 18, 20-23.

• **Summary:** A good history of Eden Foods (although the early dates are incorrect), which has blossomed from a

student-run co-op in Michigan in 1967, to a nationally recognized name in 1984. Based on an interview with Mike Potter, who had become interested in macrobiotics in 1967 when, sick with hepatitis in California, he met Herman and Cornelia Aihara and found that macrobiotics “all articulated my own intuition.” Potter is now a seasoned businessman, with 13 trips to the People’s Republic of China and 7 to Japan.

“Eden’s beginnings are a little vague, Mike Potter explains... In July 1967 a group of students in Ann Arbor began distributing macrobiotic staples from Boston. This effort eventually led to a co-op called Eden Foods; in 1968 it became a full-fledged, though small, retail store. Around 1969 Potter visited Ann Arbor and the brand new Eden Foods. At the time, he was busy managing a natural foods store in nearby Birmingham [Michigan].

“In these days Judy and Bill Bolduc and Tim Redmond owned the 1,500 square foot Eden store. By 1971 the group was milling flour and baking granola and they asked Mike [Potter] to become a manager with an ownership position. In 1973 they moved the manufacturing end into a much larger building a half block away, and sales topped \$175,000 a year. By late 1973 Eden was sharing a building with competitor Midwest Natural Foods and co-distributing products. They also relocated their retail store, adding on a natural foods restaurant and a whole grain bakery, and employed 25 people. By 1972 Potter and the Bolducs had begun to distribute their products using first a Dodge van, then a couple of refrigerated twenty-foot trucks. But all this relocating and moving the retail store about, which had been underwriting the wholesale and manufacturing aspects, used up their cash flow. Financial troubles ensued. Mike bought out the Bolducs. ‘I can make this thing work, he told them.

“Potter traveled to Japan and made important contacts with Muso, a leading macrobiotic supplier. Eden imported Erewhon-branded products directly from Japan. They started searching Michigan farms for organic crops... A cornerstone of Eden policy since 1973 is support of local Michigan farmers. Eden supports sixteen farms in Saginaw Bay which grow organic grains and beans (and three organic rice growers elsewhere) for a total of 6,000 acres [in 1984]—up from 1,000 in 1977... In 1977 Eden opened Turtle Island restaurant, which stayed open until the fire. In 1978 Eden started to advertise in magazines. But the company had grown wobbly, bureaucratized, and unwieldy.”

“Late in the evening of November 26, 1979 the Eden warehouse was consumed and destroyed by flames... An estimated \$800,000 in inventory, machinery, and supplies were lost, much of it irreplaceable, since the eventual insurance settlement covered barely one half the loss. Most old-timers at Eden agree that the fire was ultimately highly beneficial... ‘The fire was constructive,’ says Ron Roller. ‘The energy here was stagnated, with too many departments each claiming a turf. The management was in disarray; a

change was needed...’ The Eden of 1979—2,400 products, 100 employees, a natural foods restaurant, a whole grain bakery, a retail store in Ann Arbor, several tractor trailer trucks, a \$50,000 computer with eight terminals, a 10,000 square foot building—burned to the ground. Eden, somehow, was out of operation for only two weeks after the fire. Immediately it began to function in an empty 5,000 square foot building next door (the truck garage). They got the cash flowing again on an inventory staggeringly depleted. The insurance company gave them a depressingly small advance against damages and refused to settle on the claim. Eden was advised to declare bankruptcy.” About a year after the fire, construction on the new building was completed. By 1980 Eden had moved into this 20,000 square foot building at 701 Tecumseh Road in the tiny town of Clinton, Michigan, (population 2,000) about 60 miles southwest of Detroit. It was 27 months [2¼ years] before the final settlement.

In 1982 Eden imported 25 container loads (each weighing 35,000 lb) of Japanese natural foods, including natto miso and buckwheat miso. Ron Roller is now purchasing manager, Bena Burda is sales manager, Bill Swaney is production manager, and Kathy Nohr is office manager. Cliff Adler and Mike Gorman are also key co-workers. The company has nine shareholders, of whom seven are daily employees. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

2776. Okazaki, H.; Kano, U.; Kimura, S. 1984. [Investigation of the anti-mutagenic substance in miso]. Paper presented at the annual meeting of the Agricultural Chemistry Society of Japan. 1 p. English abstract. Held 1-4 April 1984 in Tokyo. [Jap; Eng]

• **Summary:** No mutagens were found in miso. Some antimutagens were identified in the lipid fraction of miso. Ethylester of unsaturated fatty acids, especially that of linolenic acid, showed a strong anti-mutagenic effect. Ethylester of linolenic acid seemed to be formed from linolenic acid which was liberated from the glycerides in soybeans by the microorganisms in miso and ethyl alcohol produced by the yeast during fermentation of miso.

2777. Shurtleff, William; Aoyagi, Akiko. 1984. Soyfoods industry and market: Directory and databook 1984. 4th ed. Lafayette, California: Soyfoods Center. 203 p. April. 28 cm. [325 ref]
Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2778. Shurtleff, William; Aoyagi, Akiko. 1984. Yooroppa ni okeru miso no rekishi [History of miso in Europe]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 32(4):213-20. April. [221 ref. Jap]

• **Summary:** This is part 1 of a translation in 4 parts by Taeko Ebine of the chapter on the “History of Miso” from *The Book of Miso* by Shurtleff and Aoyagi. A facsimile of the entire bibliography of that book is printed on pages 217-220. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2779. American Natural Foods, Inc. 1984. Elf Works merges with American Natural Foods (News release). Suite 21, The Courtyard, Chapel Hill, NC 27514. 1 p. May 1.

• **Summary:** Elf Works’ primary brand was Wizard Baldour’s Hot Stuff. ANF’s president is John Troy. Address: Chapel Hill, North Carolina.

2780. Morris, Linda Lowe. 1984. Popularity of soyfoods keeps cookbook authors busy. *Journal-Gazette (Ft. Wayne, Indiana)* May 9. [3 ref]

• **Summary:** About Shurtleff & Aoyagi (authors of *The Book of Tofu, The Book of Miso*), Jana Crutchfield (*Tofu—Not Just for the Health of It*), and Juel Anderson (*Tempeh Primer*). Address: Baltimore Sun.

2781. Troy, John. 1984. Work with miso and American Natural Foods (Interview). *SoyaScan Notes*. May 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John dropped out in the 1960s. He has always loved to eat. He does not remember when he first heard of miso, but he probably first tasted miso or used it in a recipe in about 1976. That was the year he met Joel Dee of Edward & Sons. John started using miso in about 1980, on spiritual retreats when he was the cook. He brought in all the visiting gurus. When John Belleme and Barry Evans set up their American Miso Company they called him and invited him to visit. He was very, very impressed and soon got involved. Hot Stuff, his first product, was introduced in early 1981. Hot Stuff originated when a little string of peppers fell into the blender. He thought, “I’m gonna make me a hot sauce,” so he tossed in lots of macrobiotic ingredients on his lazy susan and “hit it pretty close.”

John is now working with Jimmy Silver and Jeffrey Hilgert in developing Hot Chips, which will be made by using powdered Hot Stuff for dusting corn chips. John is now also doing a private offering in North Carolina to raise money; a public offering is 3-5 years away.

Update: Talk with John Troy. 2000. June 26. John was working at a little natural foods store named Beautiful Day (in Durham, North Carolina) on day when Joel Dee drove up in a car peddling Miso Cup, a new product, sold in little packets. This was the first time that John can recall ever seeing miso or Miso Cup. Address: Suite 21, The Courtyard, Chapel Hill, North Carolina 27514.

2782. Fruin, W. Mark. 1984. History of Higeta Shoyu Co. 4060 Amaranta Dr., Palo Alto, CA 94306. 4 p. May 15.

Unpublished manuscript.

• **Summary:** Higeta shoyu is one of the oldest brands of soy sauce in Eastern Japan, tracing its history back to the Hamaguchi brothers who migrated at the beginning of the 17th century from Hiromura in Wakayama prefecture (across the river from Yuasa, the birthplace of shoyu in Japan) to Choshi on the eastern tip of the Miura Peninsula, which curves around the top of Tokyo Bay. The Black Current, which runs northward from Wakayama to Choshi, carried the Hamaguchi brothers’ ships. They had the foresight to transport shoyu from its place of origin in western Japan to the newly opened vistas in the 17th century of Tokyo and the Kanto plain hinterland.

Around 1615 the elder of the two Hamaguchi brothers established Hiroya, a food distribution company in Tokyo (then Edo), while the younger brother ventured into the manufacture of Yuasa shoyu. For the next several centuries, Yamasa was noted as a good but local shoyu, indistinguishable from other local brands except for the access to the Tokyo market, which it enjoyed through Hiroya.

In 1914 the elder Hamaguchi joined with two other Choshi families, Tanaka Genba and Fukui Kichibei, to form the Higeta Shoyu Co. Ltd. Each family continued to produce their own brands of shoyu but around 1925 Higeta, which had been Tanaka Genba’s brand, became the sole company brand. An ambitious plan of expansion of expansion was drafted to leapfrog Higeta over Yamasa its local rival. But Higeta became overextended and in 1937 Kikkoman stepped in and purchased 80% of Higeta’s outstanding shares.

As Higeta was brought into the fold of Kikkoman companies, the involvement of the original investors changed. Tanaka Genba gradually withdrew. The Fukui family remained active in the company until the 1970s, but then they too withdrew. Only the elder branch of the Hamaguchi has stayed with the firm throughout the postwar era, and they now constitute the firm’s top management and own some 30 percent of the company stock; the Mogi-Takanashi families from Kikkoman control another 20 percent (Kikkoman had to divest itself of Higeta during the economic deconcentration programs of the Allied Occupation of Japan); the wider Hamaguchi family claims another 20 percent, with the remaining shares widely scattered.

Higeta differs noticeably from the other major shoyu companies in Japan. Most importantly, since 1966 it has relied entirely on Kikkoman for its marketing, concentrating its energies instead on manufacturing. This has saved Higeta the expense of trying to establish its name as a national brand. It spends less than 3 percent of its sales on advertising, and most of this is directed toward institutional sales, where Higeta is strong. It dominates the market for shoyu in noodle shops in Tokyo, for example, claiming 80

percent of soba and udon shops. Overall, about 65 percent of sales go to such institutional customers and 35 percent of the home market.

Because Higeta has relied on Kikkoman for its marketing since 1966, most of its line of minor products, like miso and sauce, have nearly disappeared through the lack of an independent marketing effort. In fact, 90 percent of its sales come from the sale of shoyu, and 90 percent of the shoyu it makes is koi-kuchi [koikuchi] or Eastern style shoyu. In short, Higeta is a single-product company.

But the single-mindedness of Higeta is its strength. It leads Japan in shoyu production know-how. Higeta, for example, in cooperation with Hitachi Ltd. was the first maker to automate the koji culturing step of production, reducing the labor force required for this stage from 250 to 30 people. Indeed, Higeta, because of these strengths, is the third largest maker in Japan with 7 percent of the total production, even though the Higeta brand is only the fourth largest selling shoyu in Japan. This difference is explained by the fact that Higeta's production excellence is so well established than many firms buy filtered but unrefined shoyu from Higeta to brand as their own product.

Higeta's manufacturing superiority comes from the concentration of all of its production and brewing know-how in just one plant in Choshi since 1973. The highly efficient design of this factory means that Higeta has the lowest operation costs of any company in the industry and even Kikkoman is not above buying shoyu from Higeta to sell as its own. Nevertheless, the lack of marketing muscle means that most Japanese only sample Higeta in their favorite noodle shops.

Higeta is known among afficiandos for its quality. This is derived from a combination of color, aroma, and taste which is unique among large mass producers of shoyu. Address: Palo Alto, California. Phone: 415-858-2226 or 327-0857.

2783. Kawai, Naoki. 1984. Re: History of Marusan-Ai's work with tempeh. Letter to William Shurtleff at Soyfoods Center, May 30. 2 p. [Jap; eng+]
Address: Manager, Development Section, Marusan-Ai Co. Ltd., 1 Arashita, Niki-cho, (P.O. Box 444-21), Okazaki-shi, Aichi-ken 444-21, Japan. Phone: 0564-45-3111.

2784. American Natural Foods, Inc. 1984. Confidential private placement: Offering circular, May 1, 1984. Suite 21, The Courtyard, Chapel Hill, NC 27514. 40 p. 28 cm.
• **Summary:** Contents: American Natural Foods, Inc. (ANF)—Offering circular. Risk factors and capitalization (One million shares are offered for \$150,000. Four million shares have been issued to the principals in this venture and 4 million shares have been issued to the former Shareholders of Elf Works, Ltd. If fully subscribed, the total proceeds from subscriptions and from investment by the

principals will be as follows (in millions): John C. Troy \$2.4. Jeffrey Hilgert \$1.040. James Silver \$1.040. John Fogg \$0.80. Hague C. Bowman \$0.600. Ernest G. Golding \$0.600. Thomas D. Higgins, III \$0.600. etc.). Owners of shares in Elf Works Ltd. Capital leveraging. Application of proceeds. Terms of offering. Description of securities. Summary of the merger between American Natural Foods, and Elf Works, Ltd. Obligations of and to American Natural Foods, Inc. Legal options. Exhibit A: Corporate stock redemption agreement. Exhibit D: Employment agreement. Exhibit E: Contract between ANF and American Miso Company, Inc. Exhibit F: Contract between ANF and Mrs Campbell's Canning Co., which has a plant in Winston-Salem, North Carolina. Exhibit G: Exclusive distributorship agreement between ANF and U.S. Naturals (Novato, California). Product schedule. Addendum to exclusive distributorship agreement: Minimum purchase required. The natural foods industry. An overview of the market for health/natural foods (from *Business Trends Analysts = BTA*). Supermarket nutrition centers (from *BTA*). Health-natural food chains. The market for health/natural groceries (from *BTA*).

Tables (from BTA): (1) Retail sales of health/natural foods by product (shows soyfoods have grown from \$26.1 million in 1977 to an estimated \$163.0 million in 1983). (2) Manufacturers' shipments of health/natural foods by product (shows soyfoods have grown from \$15.8 million in 1977 to an estimated \$101.8 million in 1983). (3) Manufacturers' shipments of health/natural foods, 1977-1993P—dollars per year. (4) Retail sales of health/natural foods, 1977-1993P—dollars per year (Annual growth is about 25% a year). (5) Retail sales of grocery items in health food stores, by specific product category, 1981-1982. (6) Manufacturers' shipments of natural groceries, 1977-1993P—dollars per year. etc.

ANF financial objectives, by product and by year. ANF corporate strategy (create single brand identities). Distribution and sales strategy. ANF overall product strategy. ANF individual brand strategies for nine products: Hot Stuff, Hot Chips, Smoky Mountain Sizzlin', Naturally Preferred—Miso Mustard, Fiesta Salsa, Bee Nut Butter (for kids; peanut butter with a dab of miso and bee pollen), Bee Nut Butter Bar, Sea Sauce, The Works (for hamburgers and hot dogs). Management profiles: President John Fogg, Treasurer Hague Bowman, Vice President and General Counsel Thomas D. Higgins III, Secretary Eugene C. Brooks III, Marketing Director John Fogg. "Miso soup—Safeguard against cancer," by Bill Shurtleff (from *East West Journal*). "Ah, so you want to try miso: A mountain couple is practicing the ancient art of making this Japanese food," by Beatrice Taylor Quirk (from *Carolina Lifestyle*, Sept. 1982). Color poster titled "It's Hot Stuff." Address: Chapel Hill, North Carolina. Phone: (919) 929-1240.

2785. American Natural Foods, Inc. 1984. The love affair of miso and mustard (Ad). *East West Journal*. May. p. 19.

• **Summary:** An elegant full-page color ad. The top half of this ad shows a photo of a jar of Naturally Preferred Miso Mustard in front of several heads of barley, a bowl of whole soybeans, and a wooden miso tub with braided bamboo hoops.

“Miso Mustard marries three carefully chosen mustard seeds—a high valued yellow seed, a robust dark seed and a pungent Oriental seed—with Amakuchi Miso, the prized barley miso from Japan, now made in America.

“The mustard seeds are stone ground, sensitively and sparingly, to release their flavor while protecting the delightful grainy texture.

“The Amakuchi Miso gently mellows the mustards, making the flavors rich and round with superb and memorable character.

“But Miso Mustard is more than an excellent new mustard. It doesn’t just season other foods, it transforms them!” Address: P.O. Box 2321, Chapel Hill, North Carolina 27515. Phone: (919) 929-0113.

2786. Dremann, Mary Carroll. 1984. Making the most of miso. *Vegetarian Times*. May. p. 35-36.

• **Summary:** An introduction to miso with seven recipes and one color photo showing three bowls of miso soup.

2787. Farah, Adelaide P. 1984. Tofu: The good-for-everything food. *Health* 16:48-50, 52, 54. May.

• **Summary:** Contains several beautiful color photos plus 8 tofu recipes: Marinated orange tofu salad. Five-minute miso soup with tofu. Steamed watercress with tofu and ginger. Tofu mayonnaise. Blue cheese dressing. Light vinegar-oil dressing. Tofu green goddess dressing. Buttermilk dip.

2788. **Product Name:** Live Soy Sauce, Live Miso, Barley (Mugi) Miso, Hacho (Soybean) Miso, Chick Pea Miso, Pea Miso, Peanut Miso, White Miso.

Manufacturer’s Name: Great Life Products.

Manufacturer’s Address: P.O. Box 2546, Escondido, CA 92025.

Date of Introduction: 1984. May.

Ingredients: Chick peas, rice koji, natural sea salt, soybeans (optional).

Wt/Vol., Packaging, Price: 1 lb plastic bags.

How Stored: Refrigerated preferably.

New Product–Documentation: Great Life Products catalog. 1984. May. * Limited editions (aged six months and over): Chick Pea Miso (chick peas, rice koji), Pea Miso (split peas, barley koji), Peanut miso (whole peanuts, barley koji), white miso (small navy beans, rice koji). * These misos sell out fast—Quantities are limited.

Talk with Lino Stanchich. 2002. Sept. 11. See interview.

2789. Great Life Products. 1984. Great Life Products (Mail order catalog). P.O. Box 2546, Escondido, CA 92025. 4 p. 28 cm.

• **Summary:** Dark blue ink on light gray paper. Describes and gives weights and prices for the following products: Muramoto seasalt (from the unpolluted Pacific Ocean of Baja, California). Umeboshi. Umeboshi juice (umezu, umevinegar). Chiso condiment. Live soy sauce. Live miso. Barley (mugi) miso. Hacho (soybean) miso. * Limited editions (aged six months and over): Chick Pea Miso (chick peas, rice koji), Pea Miso (split peas, barley koji), Peanut miso (whole peanuts, barley koji), white miso (small navy beans, rice koji). * These misos sell out fast—Quantities are limited. Energy tea (Genkito). Address: P.O. Box 2546, Escondido, California 92025. Phone: (619) 743-6890.

2790. *Prevention (Emmaus, Pennsylvania)*. 1984. The top 25 superfoods. May.

• **Summary:** “Healthy foods” include amaranth, soybean products (like tofu and miso), and yogurt.

2791. Shurtleff, William; Aoyagi, Akiko. 1984. Amerika Gasshû-koku oyobi Kanada ni okeru miso no rekishi [History of miso in the USA, and Canada]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 32(5):237-40. May. [221 ref. Jap]

• **Summary:** This is part 2 of a translation in 4 parts by Taeko Ebine of the chapter on the “History of Miso” from *The Book of Miso* by Shurtleff and Aoyagi. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2792. Shurtleff, William; Aoyagi, Akiko. 1984. History of soy sauce, shoyu, and tamari. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 118 p. June 6. Unpublished typescript.

• **Summary:** A comprehensive history of the subject. Contents: What is soy sauce? Etymology. World overview. Part I: History of soy sauce in China and Taiwan. Early Chinese soy sauces (shih-you and jiangyou). The 1800’s. 1900-1948. 1949-1980’s (People’s Republic of China). Taiwan. Hong Kong. Part II: History of soy sauce in Southeast Asia and Korea. Dissemination and common characteristics. Association of Southeast Asian Nations (ASEAN)—general. Philippines (1912-). Thailand (1974-). Malaysia (1970-). Singapore. Indonesia. Vietnam. Korea. Part III: History of shoyu in Japan. Hishio (jiang), tamari, and other forerunners of shoyu (700-1600). The development of shoyu (1500-1700). Standardization of the shoyu formula (1716-1867). The rise of shoyu in Japan (1750-1867). Overview of origins. Shoyu during the Meiji period (1868-1911). Shoyu from 1912-1945. The postwar period and modern times (1945-1981). Part IV: History of soy sauce in Europe. Part V: History of soy sauce in

Australasia and the Pacific. Part VI: History of soy sauce in the United States. Part VII: History of soy sauce in Latin America, Africa, the Indian Subcontinent, and the Middle East. Address: Lafayette, California. Phone: 415-283-2991.

2793. Stinchecum, Amanda Mayer. 1984. Okinawa: Chinese influence. *New York Times*. June 10. p. XX6. Sunday.

• **Summary:** Urizun, a restaurant in Naha (Asato 388-5), the capital of Okinawa Prefecture, is a “rare combination of superb food and ambiance.” It was started 12 years ago by Tsuchiya Saneyuki, because of his passion for awamori, “the Okinawan liquor distilled from Tahiri rice and aged like whiskey.” Its flavor resembles that of shochu, which is distilled from potatoes in southern Kyushu.

Urizun serves Tofu-yo (\$1.30), Okinawa-style fermented tofu with a sharp taste. Another popular dish has a dressing of miso and vinegar. Another Okinawan standard is a “creamy white tofu made of peanuts.”

2794. Appropriate Foods, Inc. 1984. Eat Appropriately! Summer catalog '84. 137 New Hyde Park Rd, Franklin, NY 11010.

• **Summary:** The following lines are carried and distributed: Appropriate Foods (tempeh, soymilk), New York Soy Deli, Grainaissance (amazake and mochi), Garden of Eatin', McZand Products, N.Y. Miso, Nasoya, Nutri-Gest, The Soy Source, Sister Shorter, Swan Gardens, Sprout Delights, Willow Run Margarine, Great Eastern Sun (all of their products). Address: Franklin Park, New York.

2795. Beuchat, Larry R. 1984. Fermented soybean foods. *Food Technology* 38(6):64-70. June. [31 ref]

• **Summary:** Discusses soy sauce, miso, and tempeh, and gives details of their fermentation processes. Address: Prof., Dep. of Food Science, Univ. of Georgia, Agric. Exp. Station, Experiment, GA 30212, USA.

2796. Chandrasiri, Vasina. 1984. Assessment of protein quality in soybean processed foods: Available lysine contents. *J. of the National Research Council of Thailand* 16(1):35-50. Jan/June. [18 ref. Eng; tha]

• **Summary:** Available lysine contents of soybeans and 10 soyfoods was determined as follows: raw soybeans 6.62 g/16 g nitrogen, cooked soybeans 6.12, white tofu 5.64, yellow tofu 6.24, soft curd tofu 5.63, tube tofu 6.17, yuba 8.13, soymilk 4.43, soy sprouts 3.79 (each g/16g N).

Values for fermented soyfoods were as follows: white soybean paste [miso] 4.72, black soybean paste 3.72, fermented curd cake (okara) 5.35. 30 minutes of boiling did not reduce the available lysine significantly. The study concluded that there was no reduction in available lysine content of soybeans before they were made into fermented or non-fermented soyfoods. There was no change in the amount of available lysine in the non-fermented soyfoods,

but there was a small, statistically significant reduction in fermented soyfoods. Address: School of Home Economics, Sukothaithammatirat Univ., Thailand.

2797. Shurtleff, William; Aoyagi, Akiko. 1984. Amerika Gasshû-koku oyobi Kanada ni okeru miso no rekishi (2) [History of miso in the USA and Canada (2)]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 32(6):287-91. June. [221 ref. Jap]

• **Summary:** This is part 3 of a translation in 4 parts by Taeko Ebine of the chapter on the “History of Miso” from *The Book of Miso* by Shurtleff and Aoyagi. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2798. Watanabe, Tokuji; Kishi, Asako. 1984. The book of soybeans: Nature's miracle protein. New York, NY: Japan Publications. 191 p. June. Illust. General index. Recipe index. 26 cm. [21 ref]

• **Summary:** Contents: Introduction. Part 1. General information: 1. Characteristic traits: Agronomic and other biological characteristics, physical properties, chemical properties, soybean protein, properties of soybeans as food material. 2. Current ways of using and processing soybeans: Throughout the world, traditional ways of using and processing, new soybean food products. 3. Tofu and other nonfermented soybean food products: Tofu, deep-fried tofu, dried-frozen tofu, soy milk, yuba, roasted soy flour (kinako), soybean sprouts. 4. Miso and other fermented soybean products: Miso, natto, Hama-natto (tera-nattô), soy sauce, sufu, tempeh. 5. Other ways of eating soybeans—Simple traditional Japanese foods: Parched soybeans, boiled soybeans (*budo-mame; hitasahi mame*), beaten and mashed [or ground] soybeans (*go*, or (from edamamé) *zunda or jinda*), molded soybean mash (*jinta-dôfu*), molded mashed soybeans and rice flour (*shitogi*), soybean soybean-mash paste. 6. New soybean protein products.

Note: This is the earliest document seen (Nov. 2008) that mentions *zunda* which is a healthy and tasty snack or treat made from mashed edamamé. It's sweet, rich in protein, high in fiber and emerald green. It is said to have originated hundreds of years ago in Japan in Miyagi prefecture. In and around Sendai (capital of Miyagi prefecture) one can find many shops and booths that sell *zunda* cakes, *zunda* mochi treats, and *zunda* shakes, all made from edamamé (green vegetable soybeans). One well-known company in Japan that markets delicious *zunda* products is Zunda Saryo.

Part 2. Cooking with soybean food products: Tofu, yaki-dofu, kori-dofu, nama-age, abura-age, gammodoki, yuba, natto, miso, soy milk, soybeans, bean sprouts. Afterword. Bibliography.

In the chapter on tofu, pages 43-44 discuss okara or *unohana* (the residue remaining after soy milk production); a photo shows it in a glass bowl. “Though it formerly

appeared on many Japanese tables seasoned and cooked with vegetables, today it is most often fed to animals. As the number of animals raised in urban and suburban areas decreases, however, tofu manufacturers are finding it harder to dispose of residue.”

Page 99 notes of tofu: “At a certain temple in Kyoto is a plaque bearing the following inscription, which, while comparing this food to religious faith, clearly shows the esteem in which the Japanese people hold tofu. ‘Religious faith should be like tofu: it is good under any circumstances. It is good boiled, grilled, or fried. Raw, chilled, served with soy sauce and other seasonings, it is good with steamed rice. Simmered in hot water and flavored, it is good with sake. Because it is soft, old people and sick people welcome it, but children and young people like it too. Men like it, women like it; poor and rich both like it. Though common, it has elegance enough to find a place in the upper class.

“It cuts clean and well for use in clear broths. It is good in the meatless diets of religious training. It can be crushed for use in miso soup. It is used all the time and in all seasons. It is inexpensive yet numbered among the delicious treats. It is welcomed everywhere, in mountains as well as in big cities. It is well received at dinners for dignitaries and guests yet is convenient enough for college students who do their own cooking. Women especially should be like tofu. The mature and cultivated person should be tender, yet firm, like tofu. Though apparently tasteless, it is delicious. Though apparently ordinary, it is extraordinary.”

Other ways of eating soybeans (p. 83-84): (1) Parched—“Parched gently in unglazed ceramic dishes made for the purpose,” then tossed by people at Sestubun in February around their houses as they chant “Demon out! Good luck in!” “Then they pick up the beans and eat them. “Parched soybeans are included in some varieties of *mochi* (glutinous rice cake) and in *okoshi* a confection made of puffed rice bound together with sugar syrup. In the past they were eaten with salt, miso, or soy sauce.” Note: In the USA, parched soybeans are called “dry roasted soynuts.”

Tables show: (1) World production of soybeans (1977-1982). (2) Price trends in dollars per ton for wheat, soybeans, and corn (1970-1981). (3) Soybean yields in the USA and Japan (1974-1981). (4) Chemical composition of soyfoods: Tofu, abura-agé, *kôri-dôfu*, yuba, kinako, soybean sprouts, nattô, miso (dark yellow), soy sauce (common), soybean (Japanese). (5) Statistics on production of modern soybean products in Japan (1975-1981). (6) Annual production and prices of modern soy protein products in the USA (May 1983).

Japan once produced a million tonnes (metric tons) of soybeans annually. This figure decreased dramatically during World War II. After the war, as soybean imports from the United States steadily increased, Japan’s domestic crop gradually fell to the level of no more than 100,000 tonnes.

In 1977 it was 111,000 tonnes, yet by 1982 it had jumped to 226,000 tonnes as rice acreage was reduced.

All photos are black and white. Figures show: (2) Line drawing of soybean plant with flowers and leaves. (2) Cross section of soybean seed-coat and cotyledon. (3) Graph of protein solubility (NSI) of defatted soybean meal at different pH values. (4) Graph of protein solubility (NSI) of defatted soybean meal at different concentrations of calcium chloride. (5) Graph of relationship between time and temperature of soaking soybeans in water (colder water temperature requires longer soak time). (6) Flow sheet for making regular tofu. (7) Photo of regular (*momen*) “cotton tofu.” (8) Line drawing of grinder (horizontal type) used with soaked soybeans when making tofu. (9) Photo of continuous filter for soy-milk preparation. (10) Photo of small-scale soy-milk processing plant. (11) Line drawing of molding box [forming boxes with lids] for making regular tofu. (12) Photo of yaki-dofu [grilled tofu]. (13) Photo of okara in a glass cup. (14) Line drawing of molding box [forming box] for silken tofu. (15) Photo of silken tofu. (16) Flow sheet for packaged tofu production [GDL]. (17) Photo of packaged tofu in package. (18) Flow diagram of large-scale process for making tofu and abura-age with 26 pieces of equipment labeled. (20) Flow diagram of continuous process for making packaged tofu [GDL]. (21) Photo of 2 pieces of abura-agé. (22) Photo of deep fryer for making abura-agé. (23) Photo of nama-agé [deep fried tofu cutlet]. (24) Photo of two types of ganmodoki. (25) Line drawing for tofu kneader for ganmodoki production. (26) Photo of *kôri-dofu* [dried frozen tofu]. (27) Flow sheet for making dried-frozen tofu. (28) Flow diagram of process for making large-scale dried-frozen tofu. (29) Photo of aseptic carton and glass of soy milk. (30) Flow sheet for making aseptically packaged soy milk. (31) Photo of 5 different forms of dried yuba. (32) Photo of kinako in two clear glass bowls. (33) Photo of soybean sprouts in a woven bamboo basket. (34) Flow sheet for making miso. (35) Three different types and colors of miso on 3 bamboo rice paddles (*shamoji*). (36) Line drawing of cut-away view of traditional pressure cooker (*koshiki*) for rice cooking. (37) Diagram of continuous rice cooker with 7 parts labeled. (38) Line drawing of *Aspergillus oryzae* with conidia (spores), sterigmata, and mycelium labeled. (39) Photo of pieces of koji. (40) Diagram of modern fermentation room for making koji. (41) Cut-away view of miso fermenting in a wooden vat with stone weights above vinyl film on top. (42) Line drawing of a mashing machine for miso. (43) Photo of natto in rice straw wrapper and polystyrene tray. (44) Cross sectional view of pressure cooker for soybeans. (45) Line drawing of rotating mixer to combine cooked soybeans with pure-cultured *Bacillus natto*. (46) Photo of soy sauce table dispenser. (47) Flow sheet for making Japanese soy sauce (shoyu). (48) Transparent view of crusher (roller) for roasted wheat in making soy sauce. (49) Photo of modern

stainless steel fermentation tanks / vats (indoors). (50)
 Photo of a jar and a cup of sufu [fermented tofu]. (51)
 Diagram showing relationships between modern soy protein foods.

Note: Surprisingly, edamamé, one of the most popular soyfoods in Japan, is mentioned only once, in passing (p. 84) in this book.

Photos on the rear cover show Tokuji Watanabe (born in 1917, graduated from the Faculty of Agriculture of Tokyo University, 1941, with Doctor of Agriculture) and Asaki Kishi. A brief biography of each is given. Address: 1. D. Agr., Kyoritsu Women's Univ., Tokyo.

2799. Watanabe, Tokuji; Kishi, Asako. 1984. Hama-nattô (Tera-nattô). In: Tokuji Watanabe and Asako Kishi. *The Book of Soybeans: Nature's Miracle Protein*. New York, NY: Japan Publications. 191 p. See p. 75-76.

• **Summary:** To make Hama-natto: Ingredients: Selected soybeans, wheat, salt, and ginger. Soak soybeans in water at about 20°C for 3-4 hours, then drain and steam for 5-6 hours. Allow to stand in the steaming vessel overnight [so that their color darkens]. When their temperature has fallen to less than 40°C, mix soybeans with toasted and ground wheat (sometimes barley is used instead) and inoculate with koji starter (*tane-koji*). Mix well and distribute among shallow wooden koji boxes. Store these [typically in a koji incubation room] at from 30-35°C for 50 hours, until beans are covered with a fragrant mold mycelium.

Spread out beans and dry in the sun until a mixture that formerly contained 30-35% moisture contains only 20-25% moisture. [The color of the beans will also become still darker]. Place molded beans in a vat, just cover with brine (Baumé 15 degrees), cover with a pressing lid, weight the lid, and allow to stand for 6-12 months. (Sometimes soy sauce is used in place of brine).

Spread the beans on clean lines in a clean place and dry once again in the sun. Finally mix with ginger that has been pickled in soy sauce.

"Hama-natto retains the shape of the original soybeans but is a lusterless blackish color." It has a high salt content (about 10%) and a low water content (36-38%), and it keeps for a long time. Hama-nattô is a specialty of a city named Hamamatsu in Shizuoka prefecture, which is adjacent to Aichi prefecture; the latter is famous for its soybean miso [including Hatcho miso]. Clearly there is a close relationship between Hama-natto, a sort of salted soybean koji, and varieties of soybean miso. Address: 1. Kyoritsu Women's Univ., Tokyo.

2800. Elf Works, Ltd. 1984. It's hot stuff (Ad). *Natural Foods Merchandiser*. July.

• **Summary:** At the top of this large-format, full-page color ad is a hand pouring a bottle of Hot Stuff, a spicy seasoning. At the bottom of the ad are flames dancing up around

vegetarian shish-kebobs. The background goes from black at the top to dark blue at the bottom. The text (black on gold in the middle, with sentences separated by red hearts) begins: "Now you can add sure-fire magic to all your favorite foods with Wizard Baldour's Hot Stuff. Shake it—wake up the dragon—and watch the magic make food disappear. Hot Stuff is much more than America's newest, best-tasting, all natural, all-purpose hot sauce. It's good for ya' too! Wizard Baldour doesn't just make Hot Stuff. He concocts it." Ingredients include "heartly organic miso" and Umeboshi plums from Japan. Hot Stuff comes in two intensities: Regular and Blazing. Distributed by U.S. Naturals Corp., 84 Galli Drive, Novato, California 94947. Address: Box 2321, Chapel Hill, North Carolina 27515. Phone: 919-929-0113.

2801. **Product Name:** Colorado Organic Misos [2 or 3 Year Sweet Potato, or 2.5 Year Squash].

Manufacturer's Name: Mountain Ark (Distributor). Made in Colorado by Linda Payone.

Manufacturer's Address: 120 South East St., Fayetteville, AR 72701.

Date of Introduction: 1984. July.

Ingredients: Sweet potato: organic soybeans, organic sweet potatoes, wheat koji, Muramoto's sea salt, well water.

Wt/Vol., Packaging, Price: 1 lb tub. Retail for \$4.25, incl. shipping.

How Stored: Refrigerated.

New Product—Documentation: Summer Flyer. 1984.

June/July. p. 2. "Linda studied the art of traditional miso making with Noboru Muramoto in California."

2802. **Product Name:** Traditional Miso Kit [Rice, or Barley].

Manufacturer's Name: Mountain Ark.

Manufacturer's Address: 120 South East St., Fayetteville, AR 72701.

Date of Introduction: 1984. July.

New Product—Documentation: Summer Flyer. 1984.

June/July. p. 2. Home miso kits developed by John Belleme. This is unaged miso, all ready to age. 45 lb tub for \$60.00, on sale. Regular \$90.00.

2803. *Natural Foods Merchandiser*. 1984. Macrobiotics: Varied trends boost sales. July. p. 1, 85-86, 88, 90, 93-94.

• **Summary:** There is a definite upward trend in sales of macrobiotic foods. Macrobiotics is both a diet and a philosophy. "The basic foods are whole grains, miso, soy sauce, tofu, seaweed, pasta, fresh vegetables, and various types of pickled vegetables. Dairy products, honey, and most animal foods are not used or are used minimally."

2804. Shurtleff, William; Aoyagi, Akiko. 1984. Amerika Gasshû-koku oyobi Kanada ni okeru miso no rekishi (3)

Oyobi sono hoka no shokoku ni okeru miso [History of miso in the USA and Canada (3) And miso in other countries]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 32(7):308-12. July. [221 ref. Jap]

• **Summary:** This is part 4 of a translation in 4 parts by Taeko Ebine of the chapter on the “History of Miso” from *The Book of Miso* by Shurtleff and Aoyagi. The other countries mentioned above are Israel, India, Brazil, and Nigeria. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2805. Rothschild, Barbara; Zwerdling, Daniel. 1984. Virginia dining: Ya Shue Yuen. *Washington Post*. Aug. 23. p. VAE11.

• **Summary:** This is a restaurant review of Ya Shue Yuen (2607 Wilson Blvd., Arlington, Virginia). “Noodles at Ya Shue Yuen often are tossed with an addictive, salty and roasty black bean paste...”

2806. **Product Name:** Eden Miso [Rice, Brown Rice, or Barley].

Manufacturer’s Name: Eden Foods, Inc. (Importer). Made in Japan.

Manufacturer’s Address: Clinton, MI 49236.

Date of Introduction: 1984. August.

New Product–Documentation: Ad in *Soyfoods*. 1984. Summer. p. 37. “Just the Best.”

2807. Eden Foods, Inc. 1984. Just the best [Edensoy, Eden tamari, brown-rice miso, barley miso] (Ad). *Soyfoods*. Summer. p. 37.

Address: Clinton, Michigan 49236.

2808. Fiske, Doug. 1984. Soyfoods in the supers [supermarkets]. *Soyfoods*. Summer. p. 18-23.

• **Summary:** Gives an in-depth look at the marketing strategies of Legume Inc., Tomsun Foods, Eden Foods, Vitasoy, Tempehworks, Nasoya, Eden Foods, Tempehworks, Soyfoods of America (Furama and Naturespring brands), White Wave, Hinode Tofu Co., Tofu Time (Tofutti), and Nasoya.

Eden Foods of Clinton, Michigan, has been involved with natural foods for 15 years, but only within the past year have they been able to establish a beachhead in supermarkets with their miso, soymilk, and soy sauce products. They are presently selling through 5 chains representing about 50 individual stores. Supermarket sales now account for about 10% of their \$7.5 million yearly sales.

2809. *Food Engineering*. 1984. Vegetable proteins: Topics from nutrition to cancer prevention to dietary fiber were presented by soy protein suppliers at the IFT [Institute of Food Technologists] show. Aug. p. 116, 119.

• **Summary:** A.E. Staley makes Textured Procon, textured soy protein concentrates. Central Soya makes Response, structured soy concentrate. Cargill makes Textratein, textured soy flours in 3 particle sizes used as partial ground meat replacers. “Among the ingredients from Kikkoman International were dehydrated miso and dehydrated tofu from soy, and dehydrated HVP (hydrolyzed vegetable protein) from soybean meal and corn gluten.” Hercules highlighted its standard and Luxor lines of HVPs for mild and beef-like flavors, and its capacity to customize HVPs to customer need. A brief summary is given of research indicating that miso may prevent cancer.

2810. **Product Name:** [Soybean Miso].

Manufacturer’s Name: Granja Tierra Nueva.

Manufacturer’s Address: Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

Date of Introduction: 1984. August.

New Product–Documentation: Letter from Ing. Oswaldo Perez. 1987. July. He made 100 kg of 18 month miso.

2811. Leviton, Richard. 1984. Soyfoods market: The top 15 prepared convenience soyfoods. *Soyfoods*. Summer. p. 42-43.

• **Summary:** “Since 1980 most of the innovation—and excitement—in the American soyfoods industry has centered around what are now called prepared convenience soyfoods.” The top 15 are: (1) Legume Light & Natural Tofu Entrees. (2) Edward & Sons’ Miso-Plus Jalapeno and Chive miso dips. (3) Farm Foods’ Ice Bean and Ice Bean Sandwich. (4) Tofu Time’s Tofutti. (5) Light Foods’ Light Links (tofu hot dogs). (6) Brightsong Light Foods’ Tofu Desserts and Dips. (7) Tomsun Foods’ Spice and Herb Tofu. (8) Eden Foods’ Edensoy. (9) Nasoya’s Vegi Dips. (10) Sonoma Specialty Foods’ Nutcracker Sweets. (11) Pacific Tempeh and Soyfoods Unlimited’s Tempeh Burgers. (12) Soyfoods Unlimited’s Leandro’s Meatless Lasagna. (13) Fantastic Foods’ Tofu Burger Mix. (14) Quong Hop’s Soy Fresh. (15) Garden of Eatin’s Nuclear Freeze (soymilk ice cream pops). A photo shows each product.

2812. Nikkuni, Sayuki; Itoh, H.; Tanaka, M.; Ohta, T. 1984. Studies on soybean protein digestion during miso fermentation. I. Changes in SDS polyacrylamide gel pattern of water-insoluble fraction during miso fermentation. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 31(8):502-10. Aug. [14 ref. Eng]*

Address: National Food Research Inst., Ministry of Agriculture, Forestry & Fisheries, Yatabe, Ibaraki 305, Japan.

2813. Shurtleff, William. 1984. Ideal miso climate. *Soyfoods*. Summer. p. 34.

• **Summary:** Discusses the temperature and precipitation in Sendai, Japan. Address: Soyfoods Center, P. O. Box 234, Lafayette, California.

2814. Westbrae Natural Foods. 1984. Distributor catalog No. 2: Sept. 1, 1984. Emeryville, California: Westbrae. iv + 11 + [7] p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on a tan background. Pages i-iv are general information, 1-11 are a computer-printed price list, and the last 7 are a product glossary. The company now sells Malted (soymilk shakes in 3 flavors, packed in foil pouches), Organic soymilk (available in August) and two types of Instant miso soup (aka [red] and shiro [white]). Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (415) 658-7518 (orders).

2815. Nordquist, Ted. 1984. Re: New developments with tofu at Aros in Sweden. Letter to William Shurtleff at Soyfoods Center, Sept. 6. 1 p. Typed, with signature on letterhead.

• **Summary:** “The company continues to expand, sales have doubled each year since we started in 1980. We now have steam injected cooking and pasteurization with a 30 day shelflife on all six products: Tofu (12% protein, made with nigari), tofu (8% protein, made with calcium sulfate), tofuburgers, tofulindstrom (red beets), Indian curry and marinated tofu. We will soon introduce tempeh, deep fried and marinated. We also plan to introduce a sandwich spread much like liverwurst in consistency before the end of this year.

“We produce about 108 kg of tofu per hour now and between 1.5 and 2 tons of products per week. I will be attending the first European Soyfoods Workshop, Sept. 27-28 in Amsterdam...”

“Would you please write a short resume about your work so I can submit it to the right people for the Alternative Nobel Prize.”

Across the top of this handsome letterhead are three logos: (1) Left: aros sojaprodukter örundsbro shows a little blue Viking with a horned helmet and big red heart. (2) Center: Aros. (3) Right: A Soyfoods Center, Sweden, with the California Soyfoods Center logo in all blue.

Enclosed with the letter: (1) Eight-panel brochure of “What is tofu?” and tofu recipes. (2) Aros mail order catalog (1 sheet, 8½ x 12 inches, blue on beige, 3 panels each side), with 8 books, a tofu kit, nigari, tempeh starter, and koji for making miso or amazake. Address: President, Aros Sojaprodukter, Bergsvagen 1, S-190 63 Orsundsbro, Sweden. Phone: 0171-604 56.

2816. Troy, John. 1984. American Natural Foods, Elf Works, and work with miso (Interview). *SoyaScan Notes*.

Sept. 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** American Natural Foods (ANF) was formed in Jan. 1984 as its own company with its own investors; in March 1984 it acquired Elf Works, Ltd. Miso Mustard, BeeNut Butter, and Smoky Mountain Sizzlin’ were all introduced formally for delivery in Sept. 1984. ANF had a private stock offering in May 1984 in North Carolina; the proceeds (\$150,000) from 25 shareholders will be used mainly to develop new products. Some of the shareholders (such as John Fogg, marketing and design) are working with the company. Barry Evans, owner of American Miso Co. in North Carolina, is the company’s miso supplier. The packer is also a shareholder. Hot Stuff is John’s only commercial miso product with a sales record to date. The Works will be out in about 2 weeks. He expects big revenues from it because people use much more per serving—dink dink vs. glug glug. Smoky Mountain Sizzlin’ is getting rave reviews. It’s super with tempeh. They are sampling it on grilled skewered tempeh and pineapple.

John’s first commercial miso product, Hot Stuff, was first put on the market in early 1981 [about April]. John is trying to use miso to create natural foods for Americans. To date John has sold exclusively to U.S. Naturals, his distributor, run by Jeffrey Hilbert and Jimmy Silver. But he has had bad service and many problems from them, so he is considering a new distribution system. He may get regional warehouses and sell from there to distributors like K&L [Kahan & Lessin], cutting out any master distributors. Address: Suite 21, The Courtyard, Chapel Hill, North Carolina 27514.

2817. **Product Name:** Naturally Preferred Miso Mustard. **Manufacturer’s Name:** American Natural Foods, Inc. **Manufacturer’s Address:** P.O. Box 2321, Chapel Hill, NC 27514. Phone: (919) 929-0113.

Date of Introduction: 1984. September.

Ingredients: Mustard seeds [3 varieties, ground], vinegar, amakuchi miso (soybeans, barley, water, sea salt), natural herbs and spices, sea salt.

Wt/Vol., Packaging, Price: 9 oz jar (255 gm).

How Stored: Shelf stable.

New Product–Documentation: Ad in East West Journal. 1984. May. p. 19. “The Love Affair of Miso and Mustard.” Full-page color. Spot in Adweek. 1984. Aug. 20. p. 37. Interview with John Troy, developer of this product. 1984. Sept. 26. Miso will be mustard ready to deliver in September 1984. Label. 1984, dated. 2.5 by 2.5 inches (smaller at top). Paper. Red, blue, black, and white on gold. “Rich and round, with a grainy texture, naturally preferred by gourmets and natural food cooks for its superior flavor and mellow character.”

Natural Foods Merchandiser. 1985. May. p. 48. Gold medal award in 6th annual merchandising contest. Ad in

East West Journal. 1985. May. p. 19. "Miso mustard--new." Spot in Chicago Tribune. 1985. Nov. 27. "Miso madness." Sec. 7, p. 12. A photo shows Miso mustard. Spot in Chilton's Food Engineering. 1985. Dec. "Miso: Superior flavor enhancer." A photo shows Miso Mustard. Spot in NASFT Showcase. 1985. Dec. "The taste of Japan: American Natural Foods." Published by the National Association for the Specialty Food Trade, Inc. A photo shows Miso Mustard.

Talk with John Troy, who now owns and runs a separate company. Miso Mustard is still on the market. It is made in Emeryville, California, for American Natural Foods, Inc.

2818. **Product Name:** BeeNut Butter [Smooth, or Crunchy].

Manufacturer's Name: American Natural Foods, Inc.

Manufacturer's Address: Box 2321, Chapel Hill, NC 27514.

Date of Introduction: 1984. September.

Ingredients: Peanut butter, honey, miso, bee pollen.

Wt/Vol., Packaging, Price: 12 oz reusable glass jar.

How Stored: Shelf stable; refrigerate after opening.

New Product--Documentation: This is peanut butter, sweetened with honey, and lightly seasoned with miso. Label. 1984, dated. 9.5 by 3 inches. Paper. Orange, yellow and black. Little bees on honeycomb background. Poem from "Buddy Bee" on back: "When you feel like something yummy, And junk food just won't do, Try this Bee Nut Butter. It might be right for you..." Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Spot in Whole Foods. 1985. March. p. 65. "Bee Spreader," A photo shows the jar.

2819. **Product Name:** Smoky Mountain Sizzlin'--"More than a barbecue sauce!"

Manufacturer's Name: American Natural Foods, Inc.

Manufacturer's Address: P.O. Box Box 2321, Chapel Hill, NC 27514.

Date of Introduction: 1984. September.

Ingredients: Tomato paste, apple cider vinegar, pure water, red miso, peanut oil, tamari soy sauce (soybeans, water, sea salt), honey, molasses, garlic juice, onion juice, umesu (Japanese plum vinegar), natural herbs and spices, toasted sesame oil, tamarind, natural hickory smoke, natural seaweed extract.

Wt/Vol., Packaging, Price: 18 fluid oz (540 ml) glass jar.

How Stored: Shelf stable; refrigerate after opening.

New Product--Documentation: Label. 1984, dated. 10.25 by 2.5 inches. Paper. Yellow, green, red and white on black background. "All natural. For bastin', grillin' and table use. Made with miso." Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Ad in Vegetarian Times. 1985. June. "You're gonna' love that Smoky Mountain twang."

2820. **Product Name:** New York Soy Deli Tofu Cheddar Spread.

Manufacturer's Name: Appropriate Foods, Inc.

Manufacturer's Address: 137 New Hyde Park Rd., Franklin Square, Long Island, NY 11010.

Date of Introduction: 1984. September.

Ingredients: Cheddar: Organic tofu, carrots, tahini, miso, umeboshi, black olives, pimentos, onions, sea salt.

Wt/Vol., Packaging, Price: 7 oz.

How Stored: Refrigerated.

New Product--Documentation: Label. 1984. New York Soy Deli Brand. 1.5 by 3 inches. Black on orange. Interview with Robert Werz. 1987. Sept. 9.

2821. **Product Name:** New York Soy Deli Sesame Miso Spread.

Manufacturer's Name: Appropriate Foods, Inc.

Manufacturer's Address: 137 New Hyde Park Rd., Franklin Square, Long Island, NY 11010.

Date of Introduction: 1984. September.

Ingredients: Organic white miso, tahini, toasted sesame oil, herbs.

Wt/Vol., Packaging, Price: 7 oz.

How Stored: Refrigerated.

New Product--Documentation: Label. 1984. New York Soy Deli Brand. 1.5 by 3 inches. Dark brown on light brown. Interview with Robert Werz. 1987. Sept. 9.

2822. **Product Name:** New York Soy Deli Tofu Ricotta.

Manufacturer's Name: Appropriate Foods, Inc.

Manufacturer's Address: 137 New Hyde Park Rd., Franklin Square, Long Island, NY 11010.

Date of Introduction: 1984. September.

Ingredients: Organic tofu, tahini, miso, umeboshi vinegar, tamari, herbs.

Wt/Vol., Packaging, Price: 7 oz.

How Stored: Refrigerated.

New Product--Documentation: Label. 1984. New York Soy Deli Brand. 1.5 by 3 inches. Brown on yellow. Interview with Robert Werz. 1987. Sept. 9.

2823. Berry, Linden. 1984. The soy of cooking. *Women's Sports* 6:40-41. Sept.

• **Summary:** A brief introduction, without recipes, to tofu, tempeh, miso, and shoyu. "You don't have to be a vegetarian to eat and enjoy soy foods... Look for cookbooks with recipes for using these soy foods at your local bookstore. There are lots of delicious and healthful alternatives to meat that await you."

2824. Beversdorf, W.D. 1984. Development of new soybean varieties for soy foods [in Canada]. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984.

Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 18-20. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• **Summary:** “Historically, soybean breeding efforts in Canada have been directed toward improving yields, increasing the area of adaptation (to shorter season and cooler geographic areas) and improving pest tolerance. As soybean production has increased toward domestic self-sufficiency, the industry has placed more emphasis on development, production, and marketing of special quality beans for specific non-oil export markets...”

“In Canada, yield of soybeans per unit land area has remained a primary consideration in soybean breeding (except for natto-type beans) because of licensing requirements for pedigreed seed production and marketing. Among high yielding breeding lines, large seed size, white or yellow hilum colour and high seed quality (resistance to discolouration and cracking) are common selection criteria associated with tofu and miso export potential.”

Canadian soybean breeders are generally aware of the characteristics defined during the 1982 “Soybean Export Mission to South East Asia” for various soyfood uses. These desired soybean characteristics are shown in Table 1 for natto, miso, tofu, soymilk, and soy sprouts. Address: Assoc. Prof., Univ. of Guelph, Guelph, ONT, Canada.

2825. Chan, Fred. 1984. General uses of soybeans in Hong Kong and competition from Chinese soybeans. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 15-17. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• **Summary:** Tofu: The two major types of tofu in Hong Kong are soft tofu (which is displayed in water to maintain its form) and mild tofu (which is firmer, is displayed on wooden planks, and is the most common type). Chinese soybeans are preferred to Canadian soybeans because after a maximum of 5 hours on display in the open market, water will start to weep from the tofu made from Canadian soybeans. In 1983, about 6,000 tonnes of imported soybeans were used to make tofu in Hong Kong; this was about 33% of the total soybeans imported.

Bean curd sheets and bean curd sticks [yuba] are very common snacks and dishes in Hong Kong. “Canadian soybeans have an advantage in this market because they produce whiter soymilk which in turn will produce whiter colour products. However, the bigger size of the Chinese soybean results in a higher yield... Manufacturers will normally mix 60% of Canadian soybeans with 40% of Chinese soybeans in order to achieve a higher output of whiter sheets... Total utilization was around 4,000 tonnes in 1983, with Canadian soybeans representing 78%.

Soy sauce and bean paste: The market is dominated by Chinese soybeans because bigger beans produce more sauce and paste. In 1983 approximately 6,000 tons of soybeans were used to make soy sauce and bean paste, with Chinese soybeans representing 75%, Vietnamese 14%, and Canadian 11%.

Soymilk: In 1983 about 1,800 tonnes of soybeans were used to make soymilk in Hong Kong, mostly by Vitasoy. Chinese and Canadian soybeans each share about 50% of the market.

Discusses various reasons that Chinese soybeans are very competitive in Hong Kong. The Chinese Oil, Cereal and Foodstuff Company in Hong Kong has an office in Hong Kong. Under this national organization are two agents specializing in Chinese soybeans. Transport time from China to Hong Kong is 7 days versus 32 days from Canada. Address: Director, Chung Hing Co., Hong Kong.

2826. Chen, Steve. 1984. Soyfoods in the Far East and USA: Products, markets, trends. In: American Soybean Assoc., ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 36 p. See p. C1-C38. Held Sept. 27-28 at Amsterdam, Netherlands. [11 ref]

• **Summary:** Contents: Summary. 1. Introduction: Ten reasons why soybeans will be a key protein source for the future. 1. Soyfood products. A. Non-fermented soyfoods: Fresh green soybeans, soybean sprouts, soynuts, soymilk, soy flour, yuba or soy protein film, tofu. B. Fermented soyfoods: Soy sauce, miso, tempeh, natto, fermented tofu, soy nuggets (tou-shih, hamanatto). 3. Soyfoods markets and trends in the Far East: Taiwan, China, Japan, South Korea, Indonesia, Malaysia, Singapore, Thailand, Philippines. 4. Soyfoods markets and trends in the U.S. 5. References. Plus 15 tables and 8 figures.

“It is our [American Soybean Association’s] strong intention that marketing and consumption of soy protein should not in any way deter the expansion of the production and sale of as much animal protein as the world can be expected to produce in the years ahead. Soy protein foods are being intentionally brought to the market to complement and not necessarily to replace animal protein products.”

“Taiwan imported 1.41 million tonnes (metric tons) of soybeans in 1983 and used about 250,000 tonnes as soyfoods for direct human consumption, which made Taiwan one of the highest in per capita consumption of soyfoods (13.2 kg or 29 lb) in the world. In the past 10 years (1974-1983), the consumption of traditional soyfoods showed an average increase of 3% per year as compared to 12% and 8.1% for poultry and soy oil, respectively. The market for packaged soymilk, soy pudding and tofu has also been expanding rapidly in recent years in Taiwan.” Table 7 shows the production of soymilk in Taiwan, which grew from 103,600 tonnes in 1974 to 210,000 tonnes in 1983, for an average growth rate of 8.2% a year.

China produces about 9 million tones of soybeans a year, and about half of these are consumed as soyfoods, giving a per capita consumption of 4.5 kg of soyfoods. "An improvement in the general economy and soyfood technology and equipment will bring a sharp increase in soybean demand and more soyfoods consumption."

In South Korea soymilk consumption has increased more than seven-fold in the last 4 years. Currently about 10,000 tonnes of soybeans are used to make 70,000 tonnes of soymilk. "It is projected that soymilk production in Korea will double in 1984 as compared to the previous year."

Indonesia continues to be Southeast Asia's largest consumer of soybeans as food. In 1982/83 soybean consumption was 6.7 kg per capita. Indonesia consumes about 1 million tonnes of soybeans annually, 60-65% of them in the form of tofu and 35 to 40% as tempeh.

Malaysia consumes only about 30,000 tonnes of soybeans per year as food. In Singapore, more than 75% of the population of 2.5 million are Chinese. Therefore tofu, soysauce, and soymilk are the predominant traditional soyfoods consumed.

Thailand consumes about 40,000 tonnes of soybeans a year as food, mainly in the form of tofu. The Philippines uses only 5,000 tonnes of soybeans annually for food, mainly as tofu.

To summarize (Table 6), annual per capita consumption of soybeans in various East Asian countries, in descending order of the amount consumed, is as follows: Taiwan 13.2 kg (population 19 million); Japan 8.3 kg (population 120 million); South Korea 7.5 kg (population 40 million); Indonesia 6.7 kg (population 150 million); Singapore 6.25 kg (population 2.4 million); China 4.5 kg (population 1,000 million); Malaysia 2.1 kg (population 14 million); Thailand 0.8 kg (population 50 million); Philippines 0.3 kg (population 15 million). Address: Director, American Soybean Assoc., Room 603, Kwang-Wu Building, No. 386, Tun Hua South Road, Taipei, Taiwan.

2827. Fujimori, Ikuo. 1984. Users' requirements [of soybean varieties] for miso. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 10-11. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• **Summary:** "In 1983, 1,600 miso makers in Japan produced 570,000 tonnes of miso. They used a total of 181,000 tonnes of soybeans comprised of approximately 121,000 tonnes from China, 20,000 tonnes of domestic soybeans [grown in Japan], and 20,000 tonnes of Canadian white hilum soybeans and others." The desirable characteristics of soybeans for making miso are as follows: A yellow or white hilum. The larger the seed size the better (more than 18 gm per 100 seeds); larger soybeans tend to be

more consistent in texture, taste and color. The thinner the hull (seed coat) the better, but not easy to split. The cotyledon cells should be light yellow. The less foreign materials, and damaged and split beans the better; corn is an especially undesirable foreign material. The four key cooked conditions: 1. The texture of the cooked soybeans must be soft; 2. The soybeans should absorb water quickly and thereby cook quickly; 3. The soybeans should have a high carbohydrate content; 4. The color of the cooked soybeans must remain bright yellow. Address: Executive Vice-President, Takeya Miso Co. Ltd., Suwa, Japan.

2828. Just In Foods, Inc. 1984. Miso Master (Ad). *East West Journal*. Sept. p. 8. Expanded ad in *East West Journal*. 1986. Nov. p. 81.

• **Summary:** At the top of this one-third page black-and-white ad is the Miso Master logo, an illustration showing the head and shoulders of a Japanese miso master, with a knotted headband, in front of a large wooden vat of miso. The text reads: "The Miso Master is truly one of Japan's National Treasures. With roots that go back centuries, he is an intimate of the land, knowing its seasons and sharing its changes. He is artist and scientist, blending the best of both tradition and technology.

"The making of Miso is a way of life. To master this life requires hard work, long hours and great sensitivity. Miso is a living good. It is vital and strengthening, full of vitamins and minerals, beneficial bacteria and rich in the highest quality protein. Miso is an extraordinary source of essential nutrition.

"Miso Master products are dedicated to the spirit of the Miso Master. Our Miso is made by hand in the old, traditional way: aged in wood, unpasteurized, using only organic grains and beans, with pure water and salt from the sea. All of the ingredients in our products are the very best: like brown rice vinegar, natural mirin, and delicate grain sweeteners.

"Miso Master products are made with reverence for a way of life. They are both nutritious and delicious, because food that is truly best for you to eat—tastes best too."

Note 1. This ad also appeared in the October issue of this magazine (p. 21).

Note 2. This is the earliest ad seen run by Just In Foods or American Miso Co. It is also the earliest document seen that mentions "Just In Foods." But notice that American Miso Co. is not mentioned! Address: Box 541, Route 3, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

2829. Kooij, J.A. van; de Boer, E. 1984. Microbiological aspects of soyfoods. In: American Soybean Assoc., ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 131 p. See p. 11-115. Held Sept. 27-28 at Amsterdam, Netherlands. [20 ref]

• **Summary:** “To learn more about the microbiological quality and safety of tempeh and tofu a survey was carried out by the working party ‘Fungi in Foods’ in the summer and autumn of 1983. The products were sampled in stores, restaurants and production places throughout the Netherlands and analyzed by using standard microbiological procedures...”

In 110 samples of tempeh: “About 10% of the samples contained *Staphylococcus aureus* and *Bacillus cereus* in numbers which may cause food intoxication. However, the *S. aureus* strains isolated in this survey proved to be non-enterotoxigenic. *Yersinia enterocolitica* (non-pathogenic serotypes) was found in 6 samples. *Salmonella* was not isolated from any of the samples tested...”

“In 154 samples of tofu: 2.1% had more than 100 counts/gm of *Staphylococcus aureus*; 11.2% had more than 100 counts/gm of *Bacillus cereus*. And 36.3% had more than 100 counts/gm of *Escherichia coli*. “About 95% of the samples appeared to have an aerobic count over 1,000,000 colony forming units (cfu) per gram. This means that there is a very great proliferation of bacteria after the production, for immediately after the production the aerobic plate count is usually below 10,000 cfu/g. This indicates that the tofu had been stored improperly or for too long. The average pH of tofu immediately after production was about 6.5, but at the time of sampling it averaged 5.2. But 5% of the samples had a pH of less than 4.5, and 16% has a pH of 4.5 to 4.9. These low pH values indicate sour/acidic products caused by large numbers of lactic acid bacteria. “In 0.7% of the tofu samples *Bacillus cereus* and *Staphylococcus aureus* were present in numbers that may cause food intoxication. The presence of *B. cereus* was probably caused by an outgrowth of the spores which survived the heat treatment. This indicates that the tofu must have been stored at too high a temperature during a long period (12–48 hours).

“The presence of *S. aureus* can be explained by a bad hygienic practice during production, after the heat treatment step. *Salmonella* was not found in any of the tofu samples.” Address: Food Inspection Services, Netherlands.

2830. Loh, Michael. 1984. An overview of export markets for edible soybeans. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 1-9. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• **Summary:** “Ontario first exported edible soybeans in 1972 and over 12 years have built it into a \$40 million business. 1981 was our best year when exports totalled \$46 million... The bulk of Ontario’s soybean exports are sold to the Far East [East Asia]—Japan (\$8 million in 1983), Singapore (\$6 million), Hong Kong (\$3.5 million), Malaysia (\$1 million), Indonesia, and Korea.” In these countries soybeans are consumed in the daily diet of the people. In Japan, for

example, they are made into miso, tofu, natto, soymilk and shoyu. Korea also makes soy sprouts, Indonesia makes tempeh, and Singapore, Malaysia, and Hong Kong make dried yuba. In addition, sales to the Netherlands, United Kingdom, and France are quite significant.

Concerning Ontario’s market share of soybean imports for food use: Japan imports 877,300 tonnes, of which 27,000 tonnes or 3.1% is from Ontario. Singapore and Malaysia import 36,000 tonnes, of which 20,000 tonnes or 55.0% is from Ontario. Hong Kong imports 20,000 tonnes, of which 10,000 tonnes or 50.0% is from Ontario.

Japan’s sources of its 877,300 tonnes of imported soybeans are as follows: USA 570,000 tonnes (65%), China 280,000 (32%), Canada 27,000, South America 300.

Japan uses its 877,300 tonnes of imported soybeans as follows: tofu 485,000 tonnes (55.3%), miso 180,000, natto 185,000, soymilk 25,000, cooked soybeans 10,000, shoyu 6,500, other 85,800. Within these figures, Ontario’s soybeans are used as follows: Miso 20,000 tonnes (11.1% of the total), natto 5,000 tonnes (5.9%), and tofu 2,000 tonnes (0.4%). Address: Export Development Specialist, Ontario Ministry of Agriculture and Food, Toronto, Canada.

2831. Martin, Michael. 1984. World supply and demand for soybeans with special reference to soyfoods. In: American Soybean Assoc., ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 131 p. See p. B1-B32. Held Sept. 27-28 at Amsterdam, Netherlands.

• **Summary:** The author estimates that European soymilk consumption is about 9-10 million liters/year, which is very small compared to European cow’s milk consumption of 22,000 million liters/year. European tofu consumption is estimated at 5-6 million kg/year, which is about one-fourth of U.S. tofu consumption. Other estimates for Europe consumption are: Miso 250,000 to 300,000 kg/year; Soy protein products (probably mostly isolates and concentrates) 40,000,000 kg/year; soy oil 1,700,000 tonnes/year. Europe has a fairly small ethnic population, about 1,000,000 people compared to 3,500,000 in the USA. Europe presently has some 20-25 tempeh companies producing an estimated 400,000 to 500,000 kg/year compared to 900,000 kg/year in the USA. Europe, and especially the Netherlands, are moving ahead quickly with tempeh.

The European food market is more fragmented, diverse, and conservative than its American counterpart. “The European consumer expects freshness and quality as a matter of course, and does not expect to pay a premium for these.”

“It is well known that the European healthy foods market is booming. It is part of a much wider social trend which involves ecology and politics, real environmental concerns, alternative medicine and coping with unemployment, an aging population, and a minimum

growth economy. It places emphasis on quality of life, individualism and cooperation. It does not exclude any age group.

“Soyfoods will increasingly find a place in our daily diets, but not without significant changes in the existing soyfoods industry, with above all greater attention to product quality and product marketing.”

Appendix 1 lists 9 U.S. suppliers of food-grade soybeans in small quantities suitable for tofu manufacturers. Pages B15 to B32 contain numerous other tables, 8 of them reprinted without permission from *Soyfoods Industry and Market: Directory and Databook*, by Shurtleff & Aoyagi. Address: American Soybean Assoc., Centre International Rogier, Bte 521, 1000 Brussels, Belgium.

2832. Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on export markets for Ontario soybeans: Edited proceedings. Ontario, Canada. 45 p. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• **Summary:** Contains 9 chapters by various authors, most cited separately. Address: Ontario, Canada.

2833. *WomenSports*. 1984. The soy of cooking. 6:40-41. Sept. *

2834. **Product Name:** Lima Ohsawa's Miso [Genmai, Hatcho, or Mugi].

Manufacturer's Name: Chico-San, Inc. (Importer). Made in Japan.

Manufacturer's Address: Chico, California.

Date of Introduction: 1984. October.

New Product–Documentation: Chico-San Cracker Barrel. 1984. Oct. p. 1, 4. Labels read: “Pressure release valve. Keep unclogged. Organic, Unpasteurized.” Aged over one year (Genmai and Mugi); Over 2 years for Hatcho. This pressure release bag is a major innovation, and a first.

2835. Kiuchi, Kan; Mori, Yutaka; Nikkuni, Sayuki. 1984. [Isolation of microorganisms from specially prepared miso]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 45. p. 14-18. March. [15 ref. Jap; eng]

Address: National Food Research Inst., Japan.

2836. Nakao, Shinichi; Yumoto, Satoshi; Watanabe, Atsuo; Kimura, Shoji. 1984. Performance of membranes during the treatment of soybean cooking drain from a miso (fermented soy paste) factory by ultrafiltration and reverse osmosis. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 45. p. 348-54. Oct. [10 ref. Eng; jap]

• **Summary:** Soybean cooking drain is the water after it is used to cook soybeans but before it is run down the drain.

This water was treated by ultrafiltration and reverse osmosis to “study of separation of low molecular weight solutes from higher molecular weight ones, the recovery of valuable materials and the removal of BOD.

Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 30(8):442-48 (1980).

Address: 1. Inst. of Industrial Science, Univ. of Tokyo, 7-22-1 Roppongi, Minato-ku, Tokyo 106; 2. Nitto Electric Industrial Co., Ltd., 1-2-1 Shimohozumi, Ibaraki-shi, Osaka, Osaka 567; 3. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

2837. Nakao, Shinichi; Yumoto, Satoshi; Watanabe, Atsuo; Kimura, Shoji. 1984. Characteristics of gel layer during the treatment of soybean cooking drain from a miso (fermented soy paste) factory by ultrafiltration and reverse osmosis. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 45. p. 355+59. Oct. [10 ref. Eng; jap]

• **Summary:** Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 30(8):449-53 (1983). Address: 1. Inst. of Industrial Science, Univ. of Tokyo, 7-22-1 Roppongi, Minato-ku, Tokyo 106; 2. Nitto Electric Industrial Co., Ltd., 1-2-1 Shimohozumi, Ibaraki-shi, Osaka, Osaka 567; 3. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

2838. Taira, Harue. 1984. [Quality of soybean seeds grown in Japan. VI. Regional and varietal differences in the physical properties, chemical composition, and suitability for food processing]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 45. p. 55-62. Oct. [9 ref. Jap; eng]

Address: National Food Research Inst. (Shokuhin Sogo Kenkyujo), Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3-4. Hokkaido Prefectural Central Agric. Exp. Station, Naganuma, Hokkaido.

2839. Udagawa, Shun-ichi; Sakabe, Fumi; Suzuki, Meiko; Narita, Noriko; Kurata, Hiroshi. 1984. Kansô kakô shokuhin no hinshitsu ni kansuru shinkin shiken [Mycological quality of dehydrated food]. *Eisei Shikenjo Hokoku (Bulletin of the National Institute of Hygienic Sciences)* No. 102. p. 147-50. Nov. 20. [3 ref. Jap; eng]

• **Summary:** 52 samples of dried foods, including 10 miso soups, were obtained from retail outlets in Japan and examined for fungi. Fungi were found in all miso soup and vegetable samples. The highest counts were 2,500/gm, typically in the vegetables. In miso soups, *Eurotium* species and yeasts predominated, followed by *Aspergillus* and *Penicillium*. Attempts to control fungal contamination

during the drying and packaging processes are not always adequate. Address: Eisei Shikenjo.

2840. Macrobiotic Wholesale Co. (The). 1984. Catalog and price list [Mail order]. 92 McIntosh Road, Asheville, NC 28806. 63 p. 28 cm.

• **Summary:** The catalog, effective 15 Oct. 1984, contains 450 new products from 15 new vendors, plus 73 new books. The president of the company is Don DeBona. Soy-related products include miso, shoyu, tamari, nigari, kinako, natto and koji spores, black soy beans, tekka, Ah Soy soy drink (soymilk), and amasake.

One of the many suppliers is The Mitoku Co. Ltd., which “was founded in Tokyo [Japan] in 1968 by Mr. Kazama at the express behest of Michio and Aveline Kushi. In fact, the company was named after MI-chio and TO-moko (Aveline’s real name; Aveline was given her name by George Ohsawa) KU-shi.” Address: Asheville, North Carolina. Phone: 800/438-4730 or 704/655-1056.

2841. **Product Name:** Wild Leek Miso (Wild Spring Leeks Pickled in Three-Year Organic Barley Miso).

Manufacturer’s Name: South River Miso Co. Inc.

Manufacturer’s Address: South River Farm, Conway, MA 01341.

Date of Introduction: 1984. November.

Ingredients: Organic wild leeks (*Allium tricoccum*) and Maine coast kelp (*Digitata*) pickled for one summer in three-year Barley miso made from deep well water, organically grown barley and soybeans, Lima sea salt, and koji culture.

New Product–Documentation: Mountain Ark Trading Co. catalog. 1984. April. p. 1. Pickled for 2 full years. \$8.50/lb. Label sent by Christian Elwell. 1992. March 15. After the miso has aged for 2 summers, the land- and sea vegetables are added then the mixture is allowed to ferment until the end of the third summer. He started selling this miso in the winter of 1984. Label. 3.5 by 2 inches. Black on white. Self adhesive. “100% organic ingredients. Unpasteurized. Please refrigerate.”

2842. **Product Name:** Dandelions Pickled in Miso.

Manufacturer’s Name: South River Miso Co. Inc.

Manufacturer’s Address: South River Farm, Conway, MA 01341. Phone: 413-369-4057.

Date of Introduction: 1984. November.

Ingredients: Wild spring dandelion greens, harvested by hand, washed, lightly steamed, and pickled in Barley Miso for 1 full summer. The Barley Miso itself is aged two summers, made from deep well water, organically grown soybeans and barley, solar dried sea salt and koji culture.

New Product–Documentation: Mountain Ark Trading Co. catalog. 1984. April. p. 1. Pickled for 2 full years. \$8.50/lb.

Talk with then Label sent by Christian Elwell. 1992. March 13. He started selling this miso in Winter 1984. Label. 3.5 by 2 inches. Black on white. Self adhesive. “Containing not less than 3 dandelions (about ¼ lb.) embedded in Barley Miso-aged 2 summers.”

2843. *Vegetarian Times*. 1984. People who have popularized vegetarianism. Nov. p. 28-29, 58-60.

• **Summary:** Introduces each person with a brief biography (those followed by an * also contain a photo of the person): Paavo Airola*, Mollie Katzen*, Jay* & Freya Dinshah, Alex Hershaft, Andreas Cahling*, Nellie Shriver, Peter Singer, Herman & Cornelia Aihara, Michio Kushi*, Gary Null*, Dick Gregory, the Seventh-day Adventists, Michael Jacobson, Nikki & David Goldbeck*, The Farm (Summertown, Tennessee; Margaret Dotzler*, Louise Hagler*, and Cynthia Bates*), Jim Mason*, Francis Moore Lappé*, Paul Obis, Laurel Robertson, Carol Flinders & Bronwyn Godfrey, Bill Shurtleff & Akiko Aoyagi*.

2844. Kennedy, J. Robert; Milbury, Peter. 1984. The sale of Chico-San to H.J. Heinz Co. (Interview). Conducted by William Shurtleff of Soyfoods Center, Dec. 18. 1 p. transcript.

• **Summary:** Peter: Chico-San was sold on 16 Nov. 1984. The sale price is confidential, but it was large and all cash. Bob Kennedy, who will soon be age 65, has a full-time contract for 6 months, then 6 months on a half-time basis, then a retainer after that. Bob sold the business because he could no longer finance the runaway expansion of the rice cake business, and so he could retire to do his own work with food. One big question is what Heinz will do with the macrobiotic product line—mostly imports. The marketing, sales, and product development liaison for Chico-San in Pittsburg is Mary Ann McCullough, Heinz USA, Div. of the H.J. Heinz Co., P.O. Box 57, Pittsburg, Pennsylvania 15230. Phone: 412-237-3812.

Bob: The original intent was to sell only the rice cake portion of Chico-San. But the rice syrup business was also sold. If Heinz wants to get behind the macrobiotic foods with all their financial and with Chico-San macros in control of that division—that’s one idea they are now studying. Heinz is interested in the macrobiotic program as a program for the future. But it may not be compatible. Herman Aihara may be hired as a food consultant; he and Peter Milbury might stay in that division. Bob thinks the key is to preserve the quality of the foods, and not to put pressure on small suppliers. Right now he doesn’t think it will work, but it might. If it doesn’t work out, Bob will set up another company. The contract allows him to keep the brand names and buy back inventories. Bob has joint ventures starting to be planned with Japanese friends. Bob has already established a new company to continue his work with macrobiotic foods. He wants to cut his work load and

get away from nuts and bolts. “We’re not selling just food products; we’re selling a philosophy. There are two levels of macrobiotic foods: Medicinal quality foods, and regular products.”

Bob’s organization starts with Lima Ohsawa, then goes through Ohsawa Japan, then Herman and Bob Kennedy, Peter Milbury, and Joel Wollner. All of this organization could go into the macrobiotic division of Heinz. For example, Heinz could use miso in their barbecue sauces. Address: Chico, California.

2845. Belleme, John; Belleme, Jan. 1984. Miso, the ABC’s of an ageless food. *East West Journal*. Dec. p. 62-66. [1 ref]
 • **Summary:** Miso is said to break down and discharge cholesterol. Scientists studying Japanese populations have discovered that those who regularly drink miso soup suffer significantly less from some forms of cancer and heart disease. Japan’s Tohoku University has recently isolated chemicals from miso that cancel out the effects of some carcinogens.

A fine variety of traditionally-made miso is available in the refrigerator section of natural foods stores in small tubs or the recently introduced plastic bag with a one-way valve that prohibits the entrance of air. For the busy cook who wants to add flavor and protein, miso gives 22 grams of protein per tablespoon. Dark miso has a meat-like quality; light miso, a dairy-like quality. Light, sweet miso contains twice the niacin and 10 times the lactic acid bacteria as dark, saltier miso. Dark miso is higher in protein and because of its larger proportion of soybeans, contains more fatty acids, which have been shown effective as anti-carcinogenic agents.

Sweet miso can be used instead of milk in mashed potatoes or creamed soups, and with tofu and lemon and lemon or rice vinegar in place of sour cream, in salad dressings and sauces. Sweet miso and sake or mirin combine well in sauces. Address: Rutherfordton, North Carolina.

2846. Kotsch, Ronald E. 1984. Made in Japan—naturally: Natural foods from the Muso Company are popular worldwide. *East West Journal*. Dec. p. 14-21.

• **Summary:** “Muso was founded in 1966 as a macrobiotic food company, aiming to provide the highest quality traditional Japanese foods. It is now the oldest and largest macrobiotic food concern in Japan. Within the natural foods movement in the country it is one of the top three firms. Also, since 1969, it has been a major exporter of macrobiotic foods. With its Tokyo-based competitors the Mitoku Company and Ohsawa Japan, it dominates the large and growing international trade in Japanese foods.”

Shuzo Okada, one of George Ohsawa’s earliest and most devoted disciples, was the son of a family of Osaka textile merchants. After Ohsawa’s death in 1966, Okada invested

\$3,000 to establish Muso Shokuhin in Osaka, with his eldest son Teizo as director. Yuko Okada, the second eldest Okada son, was head of the export division; he had spent 6 years living in Boston, mostly working for Erewhon. Initially the company was located in Fukusenji, a dilapidated Buddhist temple.

Today “the company has gross annual sales of over \$25 million and employs over 120 people. In addition to the Osaka headquarters, built at a cost of over \$1 million, it has an 18,000-square-foot production and warehouse facility in Osaka, as well as branch offices in six other cities. It wholesales over 1,800 products in the domestic market... Muso has accounts with nearly half of Japan’s 3,400 natural food outlets. In addition, it has developed a rapidly growing franchise chain of fifty-two stores, mostly in the Kansai area...

“About \$5 million a year comes from international sales... Growth in the international sector has been steady despite the blow of the 1981 Erewhon bankruptcy. (Muso had credits of about \$200,000 when its chief customer failed, and lost over \$150,000 of that.) Muso, which is now owned by more than fifty investors, was able to survive the shock. Muso exports about 270 different products...

“At present a runaway best seller is a soybean drink made of soybeans, pearl barley, kombu sea vegetable, and malt sweetener. Marketed in North America as Edensoy it has proven an excellent dairy substitute.”

There follows a description of the Nanki Umeboshi Co., Muso’s principal supplier, and then of the Kanemitsu Miso Co. (in Fuchu City, Hiroshima prefecture) which has been in business for 300 years. “While it once made sake and soy sauce as well, it now produces only miso—1,300 tons a year.” There are now some 2,000 miso makers in Japan and Kanemitsu is one of only 200 which produce more than 1,000 tons annually. It is one of a very few which produce miso according to traditional methods... It is aged in natural temperatures for two years, run through a masher, then packed in either 40-pound wooden kegs or 1-pound plastic pouches. “All the miso going into the pouches is pasteurized by 84°C heat. If it were not, gases produced by the continuing fermentation would burst the bags. Kegs may or may not be pasteurized.”

Photos show Yuko Okada.

2847. **Product Name:** The Works. SuperNatural Condiment.

Manufacturer’s Name: American Natural Foods, Inc.
Manufacturer’s Address: Box 2321, Chapel Hill, NC 27514.

Date of Introduction: 1984.

Ingredients: Fresh onions, tomato paste, pure water, red miso, honey, garlic juice, celery juice, umesu (Japanese plum vinegar), tamari (whole soybeans, water, sea salt),

natural herbs and spices, mustard, arrowroot powder, natural seaweed extract.

Wt/Vol., Packaging, Price: 12 oz (336 gm) jar.

How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Label. 1984, dated. 8 by 4 inches. Paper. Red, blue, yellow, white on burgundy. Picture of wizard with staff. “New. Made with miso. Give ‘em The Works... an all natural wonder. Everything you want on it—is in it! It’s all you need to make historic hot dogs, brilliant burgers, spectacular sandwiches, outrageous omelets, terrific tempeh and fantastic fries!” Signed by Wizard Baldour. Label. 1985, dated. 8.25 by 4 inches. Paper. Red, yellow, black, and white on navy blue. Hamburger looking illustration. “New. For hot dogs, burgers, tacos, omelets and lots more! Made with miso.” Reprinted in *Soyfoods Marketing*. Lafayette, CA: Soyfoods Center.

2848. **Product Name:** Sea Sauce.

Manufacturer’s Name: American Natural Foods, Inc.

Manufacturer’s Address: Box 2321, Chapel Hill, NC 27514.

Date of Introduction: 1984.

Ingredients: Tomato paste, pure water, apple cider vinegar, red miso, rice syrup, horseradish, Japanese umeboshi plums, lemon juice, garlic juice, onion juice, natural herbs and spices, sea salt, natural seaweed extract.

Wt/Vol., Packaging, Price: 12 oz (336 gm) glass jar.

How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Label. 1984, dated. 8.5 by 2.5 inches. Paper. Red, green, pink, white on tan. Picture of lobster and shellfish. “All natural. For seafood and shellfish. The natural gourmet compliment to all your shellfish and seafood favorites. With Sea Sauce you can create splendid shrimp cocktails, superior scallops and outrageous oysters. You can transform tuna salad, add charm to cherry stones, and enhance the flavors of all your favorite fish dishes. From clams to crabs, lobster to swordfish steaks.” Reprinted in *Soyfoods Marketing*. Lafayette, CA: Soyfoods Center.

2849. *AOK Magazin (Germany)*. 1984. Soja: (2) ein Tausendsassa! [Soya: The bean of a thousand forms!]. 25(4):15. [Ger]

• **Summary:** A brief introduction to the many foods made from the soybean, including soy sauce, soymilk, tofu, and miso. Note: This is the major health insurance magazine in Germany, with a huge circulation.

2850. **Product Name:** Tofu Skinny Dip (with Dill).

Manufacturer’s Name: Bountiful Bean Plant.

Manufacturer’s Address: 2049 1/2 Atwood Ave., Madison, WI 53704.

Date of Introduction: 1984.

Ingredients: Tofu, lemon juice, mellow white miso, shoyu soy sauce, garlic powder, dill weed, onion powder, dry

mustard, dried chives, celery seed.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

New Product–Documentation: Interview with Deborah Bachmann. 1987. Dec. 29. James Lubbe. 1988. March. Abbreviated History of the Bountiful Bean. Label. 1985. 3.5 inches diameter. Self adhesive. Light blue on white. “Non-dairy dip and dressing.”

2851. Hirayama, Takeshi. 1984. Misoshiru inyô to igan shibô ritsu to no kankei ni kansuru ekigaku-teki kenkyû [Epidemiological study on the relation between the consumption of miso soup and standardized mortality rates by gastric cancer]. *Yobo Gangaku (Preventive Oncology)*. p. 146-57. [15 ref. Jap]

Address: Epidemiology Div., National Cancer Center Research Inst., Tokyo, Japan.

2852. Hirayama, Takeshi. 1984. [Epidemiology of stomach cancer in Japan]. *Japanese J. of Clinical Oncology* 14:159-68. [Jap]*

• **Summary:** The author found a significant graded inverse association between the consumption of miso and green/leafy vegetables and stomach (gastric) cancer risk among 122,261 men and 142,857 women followed for 13 years. Address: Epidemiology Div., National Cancer Center Research Inst., Tokyo, Japan.

2853. Miyako Oriental Foods, Inc. 1984. Cold Mountain Miso: Experience in new flavor. Natural protein from soybeans with exciting recipes (Leaflet). Baldwin Park, California. 8 panels. Front and back.

• **Summary:** The front two panels of this full color, glossy leaflet show containers of the three types of Cold Mountain Miso and Cold Mountain Koji resting on a wooden cutting board and a bed of soybeans. In the background are many colorful vegetables. On the inside four panels are color photos of the four products, a description of miso as “A living work of art,” five nutritional features of miso, and a discussion of how these products are made in America. On the back two panels are four recipes for using Cold Mountain Miso. “For many more delicious recipes, see *The Book of Miso*, by William Shurtleff and Akiko Aoyagi.” Address: Baldwin Park, California 91706.

2854. **Product Name:** Living Treasures Miso.

Manufacturer’s Name: Salt Company (The).

Manufacturer’s Address: Carbondale, CO 81624.

Date of Introduction: 1984.

Ingredients: Soybeans, barley, salt.

New Product–Documentation: Talk with Ron Roller. 1991. Nov. 22. Scott Halizon of Salt of the Earth in Rifle, Colorado, sells natto starter cultures. Ron wants to learn how to make natto at home.

Talk with Scott Halizon. 1991. Nov. 23. Ron Roller is planning to export small seeded natto soybeans to Japan via Kawasho. In about 1971 Scott decided to learn as much as he could about salt and to make traditional salt available in America. His company now makes salt in Mexico, on the west/Pacific side of Baja, California. He brings this crude salt to Colorado, dissolves it in water, filters out the dust and grit, boils it, recycles the nigari, and dries it for sale. He started to sell this salt in about 1978-80 via a company he established named The Salt Company. Then he went to southern California and made miso with Mr. Noboru Muramoto. Returning to Carbondale, Colorado, he started to make barley miso, which he first started to sell in about 1984 as Living Treasures Miso. During this time he went back and forth to California, made miso with Mr. Muramoto, and sold some of his miso. In the first year he sold about 1,500 lb/year. Then next year he made about 8,000 lb or miso. Then on 25 Feb. 1985 he had a rather severe car accident. He let the miso cure/age for about 10/12 seasons, to make a "really hearty, strong, medicinal kind of miso." He also started to develop a miso using hatomugi instead of barley as the grain.

In 1987, about 18 months after the accident, he moved to Rifle, Colorado. There he changed his company name to Salt of the Earth. He stopped making miso (because he was quite disabled for a while), but he continued to sell that which he had made. He is still selling domestic miso made by Mr. Muramoto, Junsei Yamazaki, and Miso Master, plus imported miso from Eden Foods. He is now interested in *fu* (wheat gluten and glutinous rice gluten). A man in Kyoto, Japan, who has an old factory has invited Scott to come and learn how to make these products from him.

2855. Product Name: [Tofu, Miso, Seitan].

Manufacturer's Name: Sunfood.

Manufacturer's Address: Mlynska 659, 51081 Dobruska, Czechoslovakia. Phone: 42 443 94325 or 443 21578.

Date of Introduction: 1984.

New Product-Documentation: Talk with Bernd Drosihn of Viana Naturkost GmbH, Cologne, Germany. 1991. Aug. 25. At a recent trade show, Bernd met a "very curious visitor," a macrobiotic man from Czechoslovakia who has been making tofu, miso, and seitan for 8 years. He has a large line of products, which he sells mostly in Czechoslovakia. He speaks a little English, and is about 40-45 years old. He now wants to start making tempeh. He buys his soybeans from China. He has great difficulty in obtaining nigari for use as a coagulant. His address is: Sunfood, Mlymska 659, 51081 Dobruska, Czechoslovakia. Phone: 011 + 42 443 94325 or 443 21578.

Letter from Dr. Kamil Bersky, M.D., for The Macrobiotic Centre of Czechoslovakia, Mlynska 659, 51 801 Dobruska, Czechoslovakia. Phone or fax: 011 + 42 443 21578. 1993. July 30. "We are now producing 5 varieties of

seitan, 5 varieties of tempeh, amasake, tofu, and we can offer barley malt. Our plan is to start koji and miso production, open a macrobiotic center with a year-round program, a kindergarten, and a small restaurant with a shop."

Talk with Sladjan Randjelovic of Serbia, Yugoslavia. 1993. Dec. 29. His friend named Vacek runs Sunfood in Dobruska, Czechoslovakia (about 75 miles east northeast of Prague near the border with Poland), and his friend is also an agent for Mitoku Macrobiotic Foods.

Note: This is the earliest known commercial soy product made in the Czech Republic.

2856. Product Name: Westbrae Natural Buckwheat Miso. "Soba Miso."

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: 415-658-7518.

Date of Introduction: 1984.

Ingredients: Whole soybeans, buckwheat, water, sea salt.

Wt/Vol., Packaging, Price: 17.6 oz (499 gm).

New Product-Documentation: Label. 1984, undated. 3.5 by 5.5 inches. Plastic. Brown and black on gold with green and orange. Information on package given in Japanese.

2857. Westbrae Natural Foods. 1984. Westbrae Natural-Traditional foods of Japan (Poster). P.O. Box 8711., Emeryville, CA 94662. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

• **Summary:** This is a color photo of a large beige metal display rack with six shelves holding products including the following: (1) Samurai snacks, soup plum drops. (2) Tamari brown-rice wafers, Tamari brown-rice crackers. (3) Miso ramen, Instant miso soup. (4) Organic shoyu, tamari, mild soy sauce, Johsen tamari shoyu, Tofu sauce. (5) Kukicha (tea), Umeboshi (salt plums), Shiitake mushrooms, Agar flakes, Kuzu, Miso (in plastic bags; brown rice, red, barley, Hatcho). (6) Seaweeds (Wakame, kombu, hijiki, nori, sushi nori), Jinenjo soba, Somen, Brown rice noodles. At the top is the banner featuring the head of a samurai. One accompanying leaflet (printed black on white) is titled "Westbrae Natural product inventory. 4-foot Japanese foods section." A second leaflet titled "'Ichi-Ban' Westbrae Natural-No. 1 supplier of macrobiotic food in the U.S." lists the products by category. In the upper left corner are the Japanese characters for "Ichi-Ban" above a line drawing of Mt. Fuji. Address: Emeryville, California.

2858. Asunaro Eastern Studies Institute. 1984. Natural healing and foods preparation: 1984-85 (Leaflet). Escondido, California. 2 p. Front and back.

• **Summary:** Black lettering on orange paper. Classes will be taught by Noboru Muramoto, author of *Healing Ourselves*.

“Asunaro is a non-profit educational organization established in 1976. Its purpose is to provide a means by which many people can understand and learn traditional oriental culture.” Address: 145 W. El Norte Pkwy, Escondido, California 92026. Phone: (619) 743-6890.

2859. Atlas, Nava. 1984. *Vegetariana: A rich harvest of wit, lore and recipes*. Garden City, New York: The Dial Press, Doubleday & Company, Inc. 196 p. Illust. by Nava Atlas. 23 cm. [62 ref]

• **Summary:** A vegetarian cookbook scattered with quotes on vegetarianism and historical anecdotes. Filled with lovely, creative illustrations.

Soy-related recipes include: Chinese vegetable miso soup (p. 29). White bean dip (with soybeans, p. 50 & 179). Peanut sauce (with soy sauce or tamari, p. 52). Tofu “mayonnaise” (p. 52). Tofu sesame dressing or sauce (p. 53). Eggs and tofu in peanut sauce (p. 62). Peanut rice and tofu (p. 81). Mushrooms and tofu in wine (p. 119). Stir-fried vegetables with tofu (p. 132). Address: New Paltz, New York.

2860. Bloodroot Collective; Beaven, Betsey; Furie, Noel; Miriam, Selma. 1984. *The second seasonal political palate: A feminist vegetarian cookbook*. Bridgeport, Connecticut: Sanguinara Publishing. xli + 242 p. Illust. Index. 23 cm. [35 ref]
Address: 85 Ferris St., Bridgeport, Connecticut 06605.
Phone: 203-576-9168.

2861. Bray, Francesca. 1984. Legumes (Document part). In: F. Bray. 1984. *Science and Civilisation in China*. Vol. 6, *Biology and Biological Technology*. Part II: Agriculture. Joseph Needham series. Cambridge, England: Cambridge University Press. xxvii + 724 p. See p. 510-14. [49 ref]

• **Summary:** Note: Chinese characters are given for all italicized Chinese words or terms. Although legumes were among the earliest plants to be domesticated in West Asia and the Americas*, there is no solid evidence that legumes were cultivated in China in prehistoric times, even though several species were native to China, and even though legumes played a very important role in Chinese agriculture from the late Chou [ca. 722 B.C.] onwards.

* Footnote: In the Near East and Europe carbonised peas and lentils, assumed to be domesticated, have been identified at farming sites dating as far back as 7000 B.C. Various species of *Phaseolus* beans seem to have been domesticated in Peru and Mexico by the 6th millennium B.C. And groundnuts are believed to have been domesticated in the upper Amazon regions, in South Bolivia and North Argentina well before 3000 B.C.

“Though remains of leguminous species have been found in one or two Chinese neolithic sites, they have been identified as broad beans (*Vicia faba*) and groundnuts

(*Arachis hypogaea*); since the former is believed to have been introduced to China from Western Asia in Han times [220 B.C.–220 A.D.] and the latter is a native American species, the authenticity of these identifications is doubtful, to say the least” (Footnote: K.C. Chang. 1977. *The Archaeology of Ancient China*, 3rd revised ed.).

“There are apparently no references to legumes in the Shang oracle records, and the earliest uncontested evidence for the cultivation of leguminous plants in China is found in Chou bronze inscriptions and in the *Shih Ching*. Both these sources refer to a crop called *shu* (Chinese characters given), and the early form of the character clearly depicts the nodules on the roots of the plants (Fig. 237). The term *shu*, though also used to refer to legumes in general, is primarily associated with the soybean, *Glycine max* (L.) Merrill, and its presence in these writings is usually taken to signify the domestication of this crop” (Footnote: Hu Tao-Ching {1963} in fact postulates a much earlier domestication [it must have been domesticated and well known long before it appeared in inscriptions on bronze vessels in 1024 B.C.]; Ping-To Ho {1975, p. 70} believes that domestication occurred about 1000 B.C.)

“In later lexicographical texts the term *shu* is usually qualified when soybeans are referred to: *jung shu*, *jen shu*, and *ta shu* are mentioned (Footnote: In the *Erh Ya* and its commentary for example), and this does suggest that even in pre-Han times *shu* was used as a generic term for legumes rather than a specific term for soybeans. The modern term for soybean is *ta tou*, ‘greater bean,’ a term which first appears in the -1st century *Fan Sheng-Chih Shu*. In classical times the term *tou* was applied only to a type of ‘wooden vessel or dish containing flesh sauces at sacrifices or feasts’ (Bretschneider 1882, vol. II, p. 162), but by Han times it seems that it was also used as a general term for pulse crops, as it still is today.

“Whether or not the unqualified term *shu* in early texts and inscriptions should be understood to refer to soybeans or to legumes in general, there is no doubt that the soybean was domesticated in China some time around the beginning of the Chou, for texts describing -7th-century events refer to soybeans (*jung shu*) as novel introductions to the Central States, whereas by the time of Mencius [Meng tzu, c. 371-c. 289 B.C.] they had already become a staple food of the common people (Footnote: P.T. Ho 1975, p. 79).

“The presumed wild ancestor of the soybean, *Glycine ussuriensis* Regel & Maack or *G. soja* L. is native to northeast China and the adjacent areas of Manchuria, Korea, and Japan (Footnote: Hymowitz 1970, 1976), and it may be significant that the cultivated soybean was called *jung shu* for Jung was the name commonly given to the Tungusic tribes of Northeast China in Chou times. The *Kuan Tzu* states that in the -7th century Duke Huan of Ch’i (Footnote: Ch’i covered most of modern Shantung) led an expedition to the territory of the Mountain Jung and brought back

'winter onions and soybeans (*jung shu*) for dissemination throughout the various states' (P.T. Ho 1975, p. 78)."

An alternative interpretation of *jung* and of its (then) homophone *jen* is that it simply meant large and luxuriant (Bretschneider 1882, vol. 2, p. 164), for the soybean is a large, bushy plant which grows up to 6 feet tall. Its modern name of *ta tou* can be attributed to its growth habit, and not to the size of its beans which are only about as big as a lentil. Fig. 238 (*Shou Shih T'ung K'ao*, 1742) shows an illustration of a soy bean plant.

"The soybean's rapid conquest of Chou China is a tribute to its superior qualities, qualities so outstanding that they frequently provoke outbursts of surprising lyricism in modern writers: 'that miracle, that noblest of crops, that wondrous plant, the soybean' (Anderson & Anderson 1977, p. 346)." The ancient Chinese were more moderate in their praise, perhaps because they were unaware of the benefits of modern nutritional analysis. The chief virtues of the soybean for the ancient Chinese "were that it produced good crops even on poor land, that it did not deplete the soil, and that it guaranteed yields even in poor years, so that it made a useful famine crop." It gave 3-4 times the yield of millet. The *Fan Sheng-Chih Shu* says that in former times (presumably the late Chou) it was customary for peasants to plant 5 *mu* per capita of soybeans to guard against famine. Soybeans were widely grown in China from Chou times on, "but they were not held in high esteem for their gastronomic qualities." The Chinese appreciated soybeans most when they were fermented to make sauces (*jiang*) or relishes (*shi*), or transformed into beancurd (*doufu*). These foods were generally made from yellow soybeans, although the *Qimin Yaoshu* (+544) recommends black soybeans. The various fermentation processes were discovered in early times; they improved the soybean's palatability and its nutritional properties. Address: Research Fellow, East Asian History of Science Library, Cambridge, England.

2862. Clergeaud, Chantal; Clergeaud, Lionel. 1984. *Mystères et secrets du soja* [Mysteries and secrets of soya]. Paris: Editions La Vie Claire. 134 p. Illust. 21 cm. [Fre]
 • **Summary:** Contents: 1. A little history, the properties of soya, soybean culture, soya and animal feeding, recipes based on whole soybeans (*fèves de soja*). 2. Soy flour, soy proteins, recipes based on soy flour and soy proteins. 3. Soy sprouts, recipes based on soy sprouts. 4. Soy oil, recipes based on soy oil. 5. Soymilk, recipes based on soymilk. 6. Tofu, recipes based on tofu. 7. Fermented soy products: miso, recipes based on miso, tamari, tamari-shoyu, recipes based on tamari and tamari shoyu, tempeh, recipes based on tempeh. 8. Other [fermented] soy-based products consumed in the world: Chee fan (fermented tofu), Hamanatto, ketjap (Indonesian soy sauce), Meitauza (fermented okara), Sufu (fermented tofu). Address: Naturopathes-Ostéopathes, France.

2863. Gerras, Charles. ed. 1984. *Rodale's basic natural foods cookbook*. Emmaus, Pennsylvania: Rodale Press. xi + 899 p. Illust. Index. 24 x 20 cm.

• **Summary:** This book, containing over 1,500 recipes, does not use salt or white sugar, but does use meats, poultry, and fish. It was also published by Simon & Schuster as "A Fireside Book." It contains extensive information on and many recipes for soyfoods, including whole dry soybeans, tofu, soy ice cream, soy flour and grits, miso, soymilk, soy oil, okara (soy pulp), soy sauce, tamari, and soy sprouts. Address: Pennsylvania.

2864. Just In Foods, Inc. 1984. *Cooking with miso—General principles* (Card). Rutherfordton, North Carolina. 1 p. Front and back. 12 x 14 cm.

• **Summary:** This card, printed front and back, gives a brief, general description of miso. It begins: "Every morning millions of Japanese wake up to a hot, stimulating bowl of miso soup. Miso (pronounced 'mee-so') is a delicious, very versatile fermented soy food. Loaded with protein, high in vitamin B12, essential amino acids and minerals, but very low in fat and calories, miso is a concentrated source of many nutrients." After describing the nutritional and medicinal value, varieties and colors, versatility, and use in miso soup, it concludes: "According to ancient Japanese mythology, miso is a gift from the Gods. We at the American Miso Company are striving to maintain the simplicity and purity of this previous gift."

On the front of the card: An illustration at the lower right shows a wooden keg of miso bound with three ropes that join at the top. The company logo of crossed sheafs of grain in a circle appears at the top right. Address: Box 541, Route 3, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

2865. Kagaku Gijutsu-cho, Shigen Chosa-kai (Science & Technology Bureau). 1984. *Shitei shokuhin seibun hyō* [Standard tables of food composition in Japan. 4th ed.]. Tokyo. 370 p. Introduction by R. Kagawa, Joshi Eiyo Daigaku. 28 cm. [Jap; Eng]

• **Summary:** Pages 76-80 gives a nutritional analysis of the following Japanese soyfoods: Soybeans: whole domestic (dry, or boiled), USA whole dry, Chinese whole dry. Green immature: raw, or boiled. Soybean sprouts: raw, or boiled. Defatted soybeans: whole, or dehulled. Kinako (roasted, ground soybeans). Budō-mame. Tofu: regular (momen), silken (kinugoshi), soft, packed, Okinawa tofu, grilled (yaki-dofu), nama-agé (deep-fried tofu cutlets), abura-agé (deep-fried tofu pouches), ganmodoki, kori-dofu, Tofu chikuwa (steamed, or roasted). Natto: Itohiki natto, goto-natto, tera-natto (soy nuggets). Miso: Rice koji miso (ama miso, light yellow miso, dark yellow miso), barley koji miso, soybean koji miso, dried miso, kinzanji miso, hishio

miso. Okara. Soymilk: regular, reconstituted, soft drinks. Yuba: Fresh, or dried.

Page 254 gives the amino acid composition of soybeans, tofu, dried frozen tofu, yuba, okara, natto, and 3 types of miso. Address: Japan.

2866. Ko Swan Djien. 1984. Fermentation of foods by moulds. In: R.A. Samson, E.S. Hoekstra, and C.A.N. van Oorschot, eds. 1984. *Introduction to Food-Borne Fungi*. 2nd ed. Baarn, Netherlands: Centraalbureau voor Schimmelcultures. See p. 236-42. [47 ref]

• **Summary:** Contents: Introduction. Species used for fermentation. Natural inoculation. Traditional starters: Chinese yeast, tane koji, tempe inoculum. Fermented foods and mycotoxins. Roles of the moulds: Synthesis of enzymes, mould growth, synthesis of colouring compounds, protection of the product. Conclusion. Address: Bandung Inst. of Technology, Indonesia, and Agricultural Univ., Wageningen, Netherlands. Present address: Tarthorst 333, 6708 HL Wageningen, The Netherlands.

2867. Kurz, Marey. 1984. Soja in der Vollwertkueche: Rat und Rezept-Ideen zum Kochen und Backen mit allen Soja-Varianten: Bohnen, Mehl, Milch, Sauce, Tofu und Miso. Das erste komplette Soja-Kochbuch [Soya in whole-foods cookery: Advice and recipe ideas for cooking and baking with all the varieties of soya: Beans, flour, milk, sauce, tofu and miso. The first complete soya cookbook]. Munich, West Germany: Graefe und Unzer GmbH. 104 p. [11 ref. Ger] Address: West Germany.

2868. Photographs of the Arcata Tofu Shop in Arcata, California (1980-1984). 1984. Arcata, California.

• **Summary:** Twenty-two color photos (most 4 by 5 inches), numbered with captions, were sent to Soyfoods Center on 24 Sept. 2002 by Matthew Schmit, founder and owner of the Arcata Tofu Shop. They were taken in Arcata between 1980 and 1984. Nos. 3-12 were taken in Dec. 1980. They show: (1) Oct. 1980—Inside of building in Arcata during complete remodeling of previous insurance offices (1,000 square feet). (2) Oct. 1980—Outside of same building at 768 18th St. Lease just signed. Newspapers in windows in preparation for remodeling. (3) Open for business. Large wooden sign above door reads “The Tofu Shop: Soy Deli and Whole Grain Bakery.” (4) Putting up sign over door. All people standing on sidewalk or ladder have their backs to the camera. Bottom left (standing on sidewalk): Paul Kusterman, who loaned money to help shop open; a truck driver for United Naturals, he had been selling tempeh burgers at local fairs since 1978. On ladder: Matthew Schmit. Bottom right (standing on sidewalk): Jackson Hollomon and wife Valerie. Jackson gave Matthew Schmit his first taste of tofu in the winter of 1973-74. In 2001 Jackson finished 3-year Buddhist retreat. On roof holding

sign—On left: Man who created the sign. On right: Daniel Schmit (Matthew’s brother). (5) Grocery section inside The Tofu Shop, with bottles of sauces, packages of Miso Cup, and an issue of *Soyfoods* magazine on wooden shelves, with a “What is Tofu?” pamphlet on the wall. (6) Suzanne Kosciolk Schmit stocking specialty grocery shelves. A Learning Tree Tofu Kit is now visible. (7) Suzanne Kosciolk Schmit holding The Tofu Shop’s tiled logo (a writhing blue dragon on four white tiles in a wooden frame) next to the first shipment from United Naturals: Soybeans (from Arrowhead Mills), nigari, barley malt, natto miso, sea vegetables, etc. (8) Looking in the front door of The Tofu Shop; six shelves of special groceries, tempeh kits, etc. (9) Matthew Schmit dressed in white apron with “first batch grin.” Deli store front counter area is in the background. (10) Back wall of shop with supplies and custom forming box table with adapted “load bar” presses (idea from *Soyfoods* magazine). (11) Cutting first batch of tofu in stainless steel sink. (12) Close-up of The Tofu Shop’s first printed tofu labels in Arcata atop a deli take-out carton. Color and design are similar to those from Telluride—Blue on white, with a dragon in a circle. (13) 1981—Steve Rhine setting presses on metal forming boxes. (14) 1981—Matthew Schmit ladling *gô* from cooking pots to hand-screw apple-cider press used as a soymilk press. (15) 1982—Workers sitting on brick bench in front of shop. Left to right: Matthew Schmit. Stephen Lyons, tofu maker. Amy Pujanawski, deli worker. Tom Nawrocki, maker of tofu and tempeh. Rob Earhardt, tofu maker. John Hendricks, tofu maker. (16) 1982—Matthew Schmit packing tofu in take-out boxes on shelf of shop’s back wall. (17) 1983—Linda Redfield behind Tofu Shop table, promoting soyfoods at Arcata Co-op event. (18) 1983—Deli worker Jeannie Penn behind Tofu Shop table World Food Day at Arcata Co-op. Jeannie was one of the few female tofu makers ever employed by the shop. (19) 1982—Tofu Shop booth at Gemini Distributors Food Show, Fortuna, California (in the middle of cow country), attended by Matthew Schmit and Linda Redfield. Prepared dishes with signs on red checkerboard tablecloth: Creamy herb & onion tofu dressing. Marinated and baked tofu cutlets. Most early labels were rubber stamped on pre-printed generic Tofu Shop adhesive labels. (20) Soyfoods books and magazines on tablecloth at Gemini Food Show. Two signs: Introducing tofu, and The Tofu Shop. (21) Different view of table, with sign: “The Tofu Shop Specialty Foods, Arcata, CA. We specialize in freshmade soyfoods.” (22) 1984—Shawn White at food demo in a store. Address: Arcata, California.

2869. Rosengarten, Frederic, Jr. 1984. *The book of edible nuts*. New York, NY: Walker and Company. xxv + 384 p. See p. 324-27. Illust. Index. 26 cm. [330* ref]

• **Summary:** The chapter titled “Soybeans” (p. 324-27) contains a brief discussion of soybean oil, soybean meal,

tofu, miso, tempeh, and soy sauce, plus more detailed information on soynuts, which are attractive nut substitutes. Soynuts are whole soybeans that have been processed to look and taste like nuts, and be used like nuts. With a crunchy texture and no cholesterol, they have more than twice the protein content of most tree nuts and are relatively inexpensive. The author explains that large-seeded vegetable-type soybeans are used for soynuts. He describes how they are processed and the different flavors and brands that are available.

One major reason for the vast increase in soybean production in the USA is the ease with which the crop can be fully mechanized. Address: Associate in Economic Botany, Botanical Museum, Harvard Univ. [Massachusetts].

2870. Saito, Akio. 1984. [Chronology of soybeans in Japan, 1970 to 1984] (Document part). In: Akio Saito. 1985. Daizu Geppo (Soybean Monthly News). Feb. p. 16-18. [Jap]

• **Summary:** 1970–Soybean cultivation area in Japan drops to 95,500 ha, falling below 100,000 ha for the first time. Soybean cultivation area in Japan is nearly 10% of total cultivation area for all crops.

1970–Soybean imports rise to 3,243,790 tonnes, passing 3 million tonnes for the first time.

1972–Production of defatted soybean meal reaches 2,035,000 tonnes, topping 2 million tonnes for the first time. Production has risen 2.8 fold during the past decade.

1972–Production of deep-fried tofu pouches (*aburage*) reaches 200,000 tonnes.

1973–Soybean imports reach 3,635,000 tonnes, up 7% over last year despite U.S. export regulations.

1973–Some 2,740,000 tonnes of soybeans, representing about 80% of all soybeans in Japan, are crushed to make soy oil. 1973 Jan. 27–An extraordinary Cabinet meeting is held and the decision is made to import soybeans from the USA urgently. The price of soybeans in late 1972 was 3,000 yen per 60 kg sack but now it has become very difficult to get them even if you pay 15,000 yen per 60 kg. Soybeans are called “yellow diamonds.”

1973 June 27–President Richard Nixon sets new regulations for U.S. soybean exports. These give the Japanese tofu, miso, and soy oil industries a big “shock.”

1973 July 6–The Japanese government passes a new law that forbids soybean brokers or sellers in Japan from buying up and selling at inflated prices 16 important items—including soybeans.

1973 July 12–The Japanese Department of Commerce announces that it permits the export of soybeans for special food uses, such as tofu and high-quality misos, which were planted under previous contracts.

1973 Sept. 7–The U.S. Department of Agriculture removes all regulations that concern exports of agricultural products.

1973 Oct. 17–OPEC nations decide to regulate the production and supply of crude petroleum. This leads to huge price increases in petroleum products—known in Japan as the “oil shock.” Japanese buy up toilet paper and wash detergents causing much confusion.

1974–Good quality miso now retails on average for 251 yen/kg, up 22.4% from last year. The average retail price of shoyu in Tokyo is 434 yen for 3 liters, up 33.5% from last year.

1974 Feb.–The Japanese Ministry of Agriculture and Forestry asks manufacturers of tofu, natto, deep-fried tofu pouches, and dried-frozen tofu to reduce the retail prices of their products to the levels they were at in November 1973.

1974 July 30–In order to get rid of AF2 (a preservative widely used in tofu), the City of Tokyo decides to make a public announcement of all foods which may contain AF2 and announces that food inspections will start immediately, on August 1.

1974 Aug.–The Japanese Ministry of Public Welfare forbids the usage of AF2.

1974 Oct.–The JAS food certification system, formerly applied to widely distributed foods, is applied to tofu, natto, konnyaku, etc., which are foods that are distributed over a small area.

1975–The typical price of Tofu in Tokyo is 60-70 yen per 300 gm. Yet in supermarkets it averages 50 yen, and some sell it for as little as 25 yen.

1976–Soybean production in Japan drops to 109,500 tonnes, the lowest level since 1878 when production statistics started to be recorded.

1978–The soybean cultivation area reaches 127,000 ha, topping 100,000 ha for the first time in 9 years.

1978–Soybean imports rise to 4,260,000 tonnes, topping 4 million tonnes for the first time. This is 4.5 times as much soybean imports as 20 years ago.

1978 Aug.–Unbranded generic foods, such as shoyu, miso, and salad oil, start to be sold. They retail for about 30% less than major branded products.

1979–Tofu production continues to rise, reaching 1,114,000 tonnes, an topping 1.1 million tonnes for the first time.

1980–Production of natto reaches 153,000 tonnes, up 33% compared with 10 years ago (when it was 115,000 tonnes).

1981–The area occupied by registered soybean varieties rises to more than 60% of total soybean area.

1981 Per capita consumption of miso drops below 6 kg/year to 5.9 kg/year, down 30% compared with 20 years ago (when it was 8.4 kg) This is a reflection of the health food movement in Japan.

1981 Sept.–Dr. Hirayama of the National Cancer Center announces that miso soup has some effect on lowering the death rate from stomach cancer, stroke, and sclerosis of the liver.

1981 Nov.—The Ministry of Agriculture and Forestry announces JAS (Japanese Agricultural Standards) for soymilk. The soymilk boom starts. The total yen value of the soymilk by all major Japanese manufacturers is 5,000 million yen.

1982—There are now 77 registered varieties of soybeans cultivated in Japan. Two of these (Norin 1-go and Norin 5-go) have a Norin [Ministry of Agriculture] number, and 25 have various place names.

1982—Production of soybeans in Japan this year is 226,300 tonnes, and soybean imports are 4,344,000 tonnes— which is only 5% self sufficiency.

1982—Per capita consumption of soy oil rises to 5.1 kg, topping 5 kg for the first time. It is 3 times higher than it was 3 years ago.

1982—Production of defatted soybean meal reaches 2,800,000 tonnes—up 38% over the last 10 years.

1983—Production of soymilk in Japan rises to 116,724 tonnes, topping 100,000 tonnes for the first time. It has risen 71% during the past year.

1983—Per capita consumption of soybeans in Japan is 5.8 kg, up 3.6% during the past year.

1984—The use of soymilk as a beverage is declining in Japan. The movement to use more soymilk as an ingredient in foods (such as noodles, breads, ice creams, and creamy soups) is becoming more active.

1984—Soybean yields in Japan reach 1,770 kg/ha, and all-time record. The old record was 1,540 kg/ha in 1982. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

2871. Samson, Robert A.; Hoekstra, E.S.; Oorschot, C.A.N. eds. 1984. Introduction to food-borne fungi. 2nd ed. Baarn, Netherlands: Centraalbureau voor Schimmelcultures. 248 p. Index. 30 cm. [164* ref]

• **Summary:** Contents: Introduction. 1. Identification: Zygomycetes, Ascomycetes (Aspergillus), Deuteromycetes (Monascus, Mucor, Rhizopus), Yeasts, References. 2. The detection and quantification of fungi in food, by B.J. Hartog. 3. Fungal growth on foodstuffs related to mycotoxin contamination, by M.D. Northolt & P.S.S. Soentoro. 4. Mycotoxins, sampling and chemical detection, by H.P. Van Egmond. 5. Heat resistance of yeast cells and fungal spores, by W.I. Baggerman. 6. Food preservatives, by E. De Boer. 7. Fermentation of foods by moulds, by Ko Swan Djien. Appendix. Glossary of used mycological terms. Special literature on food mycology. Index of the taxa described in chapter 1. In the Identification chapter, details and good illustrations (line drawings) and photos are given for the genera of molds used with soyfoods mentioned above. Address: Netherlands.

2872. Shi, Shenghan. 1984. Qimin yaoshu (yinshibu) [The food and drink section of the *Qimin Yaoshu* (Ch'i-min yao-

shu)]. Peking, China: Commercial Publishers. [Chi]*

• **Summary:** Wade-Giles reference: *Ch'i Min Yao Shu* (*yin shih pu*), by Chia Ssu-hsieh. This section of Shi Shenghan's modern translation of the *Qimin Yaoshu* (1957-58) was published separately in 1984. H.T. Huang used this extensively in his book on *Fermentations and Food Science* (2000) in the Joseph Needham series. Address: China.

2873. Shurtleff, William; Aoyagi, Akiko. comps. 1984. Soyfoods labels, posters & other graphics: 5. Miso and soy sauce. Lafayette, California: Soyfoods Center. 164 p. 28 cm. • **Summary:** This book is a collection of black-and-white photocopies of materials ranging in date from 1975 to 1984. The books in this series, each a unique collection of graphic materials, are designed for a number of purposes: (1) To serve as a source of ideas, ingredients, inspiration, legal specifications, and basic guidelines for companies in the process of designing graphics for their own soyfoods company. (2) To document the tremendous diversity of soyfoods products and ways of introducing them to the public. (3) To document, through this, the rise and history of the soyfoods industry and market in the Western World.

Contents: Miso. Second generation miso products. Soy sauce, shoyu & tamari. Second generation soy sauce products. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2874. Steinkraus, K.H. 1984. Solid-state (solid-substrate) food/beverage fermentations involving fungi. *Acta Biotechnologica* 4(2):83-88. [13 ref]

• **Summary:** Contents: Summary. Introduction. Oriental food fermentation: Tempeh, miso, soy sauce, tape ketan. Address: Inst. of Food Science, Cornell Univ., Geneva, New York 14456.

2875. Vegetarijanska kuhinja [Vegetarian cooking]. 1984. Zagreb, Yugoslavia: SNL (Sveucilna mklada Liber). 389 p. Photos by Luka Mjeda. 25 cm. [Scr]

• **Summary:** This attractive, hardcover book, printed on glossy paper and containing many excellent color photos of dishes, has a lengthy section on soya (Soja; p. 291-307). It gives descriptions of and recipes for using (or making) whole dry soybeans, soymilk, tofu, and miso. Address: Zagreb, Yugoslavia.

2876. Wood, B.J.B. 1984. Progress in soy sauce and related fermentations. *Progress in Industrial Microbiology* 19:373-409. M.E. Bushell, ed. Modern Applications for Traditional Biotechnologies. [100 ref]

• **Summary:** Contents: Introduction. Soy sauce: Introduction, raw materials and koji, the *unami* taste, defatted soybean meal, microbiological considerations, moromi stage of fermentation, refining of and properties of

shoyu, patents, work with Japan. Miso. Tempeh. Conclusions.

Tables show: (1) Glossary of terms used in soy sauce and similar fermentations: *Koji, miso (hatcho, mame, mugi, genmai, kome), moromi, shoyu (koikuchi, usukuchi, tamari, shiro, saishikomi), tamari, teriyaki*. (2) Recently published national standards for soy sauce, miso, etc. (cites 8 standards, 5 from Taiwan and 1 each from Thailand, Malaysia and USA). (3) Recent patents relating to shoyu and miso production and processing: Japanese 1980 shoyu (13 patents), Japanese 1981 shoyu (11), USA 1979 (2), USA 1980 (2), Japanese 1979-1981 miso (8), USA tempeh 1979-1980 (3 patents). (4) Japanese journal titles and their English translations (11 journal frequently cited in FSTA–Food Science and Technology Abstracts). Address: Applied Microbiology Div., Dep. of Bioscience and Biotechnol, Univ. of Strathclyde, Glasgow, G1 1XW, Scotland.

2877. **Product Name:** Lima Brown Rice Koji.

Manufacturer's Name: Chico-San, Inc. (Importer). Made in Japan.

Manufacturer's Address: P.O. Box 1004, Chico, CA 95927.

Date of Introduction: 1984?

Ingredients: Dried fermented brown rice with koji (*Aspergillus oryzae*).

Wt/Vol., Packaging, Price: 17.6 oz (500 gm) plastic bag.

How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Label for Barley Rice Koji for Making Miso and Amasake. 1984. Collected by Lorenz Schaller of California. 4 by 5 inches. Orange and brown on beige. “Imported from Ohsawa Japan by Chico-San.”

2878. **Product Name:** Westbrae Natural Miso (Light Yellow, Mellow White, or Red).

Manufacturer's Name: Westbrae Natural Foods (Distributor). Made in Canada by Shin-Mei-Do.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.

Date of Introduction: 1984?

New Product–Documentation: Catalog. 1984. Talk with Bob Gerner. 1988. Jan. 30. Westbrae has dropped Miyako Oriental Foods's miso. Switched to that made by Shin-mei-do on Denman Island, Canada.

2879. American Miso Co., Inc. 1985. The secret of Japanese miso comes to America (Ad). *East West Journal*. Jan. 4.

• **Summary:** This full-page, black-and-white ad begins: “At last! The ancient traditions of the Japanese miso-making art have been carefully and lovingly carried to America by the American Miso Company, the proud now caretaker of traditions passed down from Master to Miso-Master for many centuries.” This miso is made from the finest ingredients, including organic rice, barley, and soybeans.

“Last and perhaps most important, our miso is unpasteurized, unlike so many other misos. This leaves intact the beneficial lacto-bacillus and enzymes so essential for proper health and food digestion, and imparts the savory aroma, outstanding character, and mellow taste so prized in unpasteurized miso. The American Miso Company logo, crossed sheaths of grain in a circle, is at the bottom center of the ad.

Photos show: (1) A 1-lb package of the company's barley miso in a plastic bag with a one-way pressure release valve. (2) Jan Belleme, with a baby (Justin) on her back, mixing koji—her hands up to the wrists. (3) A bearded employee [Bob Zullo] moving a huge wooden vat of miso using an hydraulic dolly. Address: Box 541, Route 3, Rutherfordton, North Carolina 28139. Phone: (704) 287-2940.

2880. **Product Name:** Natural Soya Chips. Low Sodium [Zesty Miso, or Chili Vegetable].

Manufacturer's Name: Edward & Sons Trading Co.

Manufacturer's Address: P.O. Box 3150, Union, NJ 07083.

Date of Introduction: 1985. January.

Ingredients: Incl. okara.

Wt/Vol., Packaging, Price: Bag. Retail for \$1.59.

How Stored: Shelf stable.

New Product–Documentation: Ad in *Vegetarian Times*. 1985. June. Inside front cover. “Crisp & Delicious soybean snacks. The soyfoods revolution marches on with Soya Chips... Natural Soybean Snacks in two scrumptious flavors.”

2881. Fukushima, Danji. 1985. Fermented vegetable protein and related foods of Japan and China. *Food Reviews International* 1(1):149-209. [99 ref]

• **Summary:** Introduction. Historical aspects of soy sauce and miso. General description of fermented vegetable protein foods: Soy sauce (varieties, manufacturing, flavor components and quality evaluation), miso, natto, sufu (fermented product of tofu), fermented soy milk. Microbiology, biochemistry and nutrition: Role of koji as enzyme source (unique sources of enzymes, peptidases in koji, role of proteinases and peptidases in koji during protein digestion, role of glutaminase in koji in formation of glutamic acid during protein digestion), effect of heat treatment of soybean proteins on their digestibility and nutritive value (enzyme digestibility and yield of soy sauce, enzyme digestibility and nutritive value of protein), basic mechanisms for protein coagulation, microorganisms during brine fermentation in soy sauce and miso (change of microflora during brine fermentation, properties of *P. halophilus*, properties of *S. rouxii*, properties of *Torulopsis* species), nutritive value, safety and anticarcinogenicity of fermented foods. Future of traditional vegetable protein

foods made through fermentation. References. Address: Food Science Research Lab., Kikkoman Corp., Noda-shi, Chiba-ken, Japan.

2882. Harayama, Fuminori; Yasuhira, Hitomi. 1985. *Rhizopus-zoku ni yoru miso jôzô ni tsuite*. I. [Application of the genus *Rhizopus* for miso manufacturing. I. Studies on fermented soybean food manufacture using various molds]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 80(4):281-86. [17 ref. Jap; eng]

• **Summary:** Two strains of *Rhizopus* with high protease activity and low spore-forming capacity, *R. oryzae* IFO 5418 and *R. japonicus* IAM 6002 were used instead of *Aspergillus oryzae*. Miso obtained had more lactic acid and lower pyroglutamic acid contents, less creaminess, harder consistency, more clear color, and flavor with unique aroma compared with ordinary miso. Address: Shinshu-Miso Research Inst., 469-6 Nakagoshô, Nagano-shi, Nagano-ken 380, Japan.

2883. Saito, Akio. 1985. *Daizu bunka-shi nenpyô* [Chronology of soybeans, 122 B.C. to 1984]. *Daizu Geppo (Soybean Monthly News)*. Jan. p. 12-16; Feb. p. 10-18. 28 cm. [Jap; eng+]

• **Summary:** This very interesting, well-researched, and detailed chronology, which is full of new information, focuses on the development of soybeans and soyfoods in Japan. We have divided the contents of the chronology into 9 separate records; the date of each corresponds to the last year in that part of the chronology: 1292, 1599, 1699, 1868, 1899, 1926, 1949, 1969, and 1984. Address: Norin Suisansho, Tokei Johobu, Norin Tokeika Kacho Hosa.

2884. Hatsuhana. 1985. Hasuhana (Ad). *New York Times*. Feb. 10. p. 735.

• **Summary:** A half-page ad for this Japanese restaurant at 17 East 48th St. Most of the ad is devoted to the menu, which is divided into appetizers and entrees. Appetizers include: "Soy bean [miso] soup. Geso yaki, broiled squid feet with butter, salt or soy bean paste / miso. Hiya yakko, cold soy bean curd [tofu]. Oshitashi [O-shitashi, O-hitashi], spinach prepared in a delicate sesame and soy sauce. Toro natto, chopped fatty tuna with aged soy beans in a cup.

Many of the entrees are nori-wrapped sushi.

2885. *Asahi Shinbun*. 1985. Nihon no daizu kakôgaku manabu. Nepaaru no Baideya-san. Kuni de gijutsu ikashitai. Kyô jôkyô. Hirogaru kaigai kyôryoku no wa [Mr. Vaidya of Nepal is studying soybean processing in Japan. Hoping to use the techniques at home, he arrived today in Tokyo, expanding international cooperation]. Feb. 14. [Jap]

• **Summary:** Mr. Vaidya was invited by the Rotary Club to come to Japan to learn how to make soyfoods. He will be learning about tofu, miso, and shoyu. A photo shows Mr.

Vaidya making tofu at Senhachi [Senpachi?] tofu shop at Yajima-cho, Yamadera, Japan. Address: Japan.

2886. Kikkoman International Inc. 1985. Analysis of Kikkoman Instant Soups. 50 California St., Suite 3600, San Francisco, CA 94111. 1 p. Unpublished manuscript. [1 ref]

• **Summary:** Gives a complete nutritional analysis for four packaged miso soups (aka miso, shiro miso, tofu, wakame), and Osuimono. They have a moisture content of 2.1–4.4%. Protein is 11.5–23.9%. Typically 10 gm of the dry soup is mixed with 2/3 cup water. Address: San Francisco, California. Phone: 415-956-7750.

2887. Langley-Danysz, Pernette. 1985. L'entrée discrète du soja en Europe [The discreet / cautious entry of soya into Europe]. *Revue Laitière Française* No. 438. p. 16-20. Feb. [Fre]

• **Summary:** An illustration on the cover shows an American cowboy-like man, wearing a cowboy hat and cowboy boots, smoking a cigarette, and carrying a briefcase on which is written ASA. He appears to be emerging from a garbage can labeled "soya" and from his briefcase are flying several cartons of soymilk. The article begins: "Two soy products, milk and tofu, were at the center of a conference organized in September 1984 at Amsterdam [Netherlands] by the American Soybean Association (ASA)."

Gives data on the chemical composition and nutritive value of soy beverages, soymilks, and tofu. Discusses the products recently introduced in Europe. Consumption of soy products in the E.E.C., principally as soy protein concentrates or isolates, has never exceeded 40,000 tonnes/year. Consumption of traditional East Asian soyfoods such as tempeh, miso, sufu, and soy sauce, is still low in Europe, but consumption of tofu and soymilk is growing significantly. Nutritional composition of cow's milk and soymilk are compared, and various commercial soy products are discussed.

Soy ice creams (including Ice Bean and Tofutti) are discussed in detail on page 19, col. 1. The pioneer of these soy ice creams (*ces ice cream au soja*), named Ice Bean, was developed by Farm Foods in Tennessee. Today there are a dozen other brands of tofu ice cream (*glaces au tofu*). One of these ice cream (*ces crèmes glacées*), Tofutti, made by the company Tofu Time and presented at SIAL in 1984, took the first place last fall on the hit parade of dairy products from the United States." Note: This is the earliest French-language document seen (March 2007) that mentions soy ice cream which it calls *ice cream au soja*, or *glaces au tofu*, or *crèmes glacées*.

Photos show the following products, each in a Tetra Brik carton: Nestle Bonus Soya Bean Milk, Plamil Soya Milk Concentrated, Morinaga Ever-Fresh Silken Tofu, Yeo's Soya Bean Drink, Alpro Soya Drink. Address: France.

2888. MacDonald, Sandy. 1985. Designer beans: Soybeans aren't stuck down on the farm anymore. High-protein, low-calorie soyfoods have gone gourmet. *New Age Journal* (Boston, Massachusetts). Feb. p. 53-59. [2 ref]

• **Summary:** An excellent introduction to soyfoods and soyfoods companies in America today. Photos show Chandri and Gary Barat of Legume, Akiko Aoyagi and William Shurtleff "parents of the soy boom," and Tom Timmins president of Tomsun Foods.

Note: This is the earliest document seen that contains the term "designer beans." Though this interesting term is used in the title of this article, it does not appear in the body of the article itself. The author appears to mean that the soybean can be made into hundreds of "ingenious" and imaginative (often delicious) foods from ice cream to lasagna, from burgers to creamy dips and dressings—and industrial products, including spun soy protein fibers invented by Robert Boyer, a Ford Motor Company employee, and first put to use in the upholstery of Ford cars; they were later used to make bacon bits and meat alternatives. Address: Brighton, Massachusetts.

2889. Shurtleff, William; Aoyagi, Akiko. 1985. Brief history of Imagine Foods (Arkansas) and Rice Dream non-dairy frozen dessert (Document part). In: Shurtleff and Aoyagi. 1985. *Tofutti & Other Soy Ice Creams: The Non-Dairy Frozen Dessert Industry and Market*. Vol. 1. 145 p. See p. 88-89.

• **Summary:** "In June 1984 Robert Nissenbaum and David Carlson of Imagine Foods, a small rural Missouri company that also made tempeh and miso, introduced Rice Dream, one of the most creative non-dairy frozen desserts to appear in America in decades. It was based on *amazake* (literally "sweet sake") a creamy-thick, subtly-sweet, low-alcohol precursor of Japanese sake, made by fermentation of rice koji in water. Koji, used to make rice miso, is made by fermenting rice with the koji mold (*Aspergillus oryzae*) (Shurtleff and Aoyagi 1983). The company made its own koji and amazake. Unlike most other non-dairy ice creams, Rice Dream was extremely low in calories, since it originally contained no added oil or fat. Most of the product's sweetness came from the natural sweetness of amazake, but small amounts of Grade A maple syrup were also used. A nutritionist's dream, containing only 132 calories and 18 mg of sodium per ½ cup serving, Rice Dream was advertised with a lovely full-page color ad in various natural foods magazines. As demand grew, production of the amazake was moved to California and the hard-pack frozen dessert was made at Peninsula Creamery in Palo Alto, California. Thereafter a small amount of safflower oil had to be added for functional reasons, and Chico-San's rice syrup replaced the prohibitively expensive maple syrup. The only soy in the product was soy lecithin. By January 1985 there were 16 distributors for the product

nationwide. Originally made in hard pack, it was also sold as a soft-serve mix starting in early 1985."

Note: At the time of this writing, the author was not aware that Rice Dream was no longer being made from koji, and that commercial enzymes were being used instead of the enzymes from koji. Address: Lafayette, California.

2890. Ballard, Bob. 1985. Ah-Soy! and Great Eastern Sun (Interview). *SoyaScan Notes*. March 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ah-Soy was launched at the NNFA show in Atlanta, Georgia, in the summer of 1984. Initial flavors were vanilla, chocolate, and original (plain). It was made by Saniku Foods in Japan and imported via Mitoku. Carob flavor was introduced in the fall of 1984. Vanilla is now the best seller because it is the most unique. The product is a "fantastic success." The four flavors account for 15-20% of Great Eastern Sun's total sales from 1,100 products. GES only sells to distributors [i.e. it is a master distributor].

Sales reports for the period 1 Nov. 1984 to 25 Feb. 1985 show the following number of units sold (there are 30 units/per case): Vanilla 210,000 units. Original/plain 110,000. Carob 105,000. Chocolate 100,000.

Other GES soyfoods that sell well: Mellow white miso (made by American Miso Co.), 35 lb tub, #9 best seller by dollar volume. Onozaki rice miso, 11 lb tub, #20 best. Mellow white miso, 15 lb tub, #20 best. Instant miso soup from Japan (ranking unknown). This month's sales are annualized. The company is now doing \$4 million/year in sales. They used to import freeze-dried tofu; the FDA forced them to change the name to "dried tofu." Shurtleff notes that he prefers the term "dried-frozen tofu."

Another best seller (about #3-5) is their White Cloud Rice Syrup It is made from rice with sprouted barley for malt. Address: Great Eastern Sun, 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730 or 704 252-3090.

2891. Byrne, Maureen. 1985. The future for soyfoods. The first European Soyfoods Workshop was held in Amsterdam by the American Soybean Association, and papers covered subjects from marketing to microbiological standards. *Food Manufacture (London)* 60(3):49, 51, 53. March.

• **Summary:** Contains an interesting full-page table in which Oriental soyfoods are classified into two types: Non-fermented and fermented. The non-fermented soyfoods are: Fresh green soybeans, soybean sprouts, soynuts, soymilk, soy flour, soy protein-lipid film (yuba, tou-fu-pi), soybean curd (tofu). For each food is given the local names, description, and uses.

The fermented soyfoods are: Soy sauce, miso, tempeh, natto, fermented tofu, and soy nuggets. For each fermented soyfood is given the local names, organisms used, description, and uses.

Soy sauce includes *chiang-yu* from China, *shoyu* from Japan, *ketjap* from Indonesia, *kanjang* from Korea, *toyo* and *see-ieu* from Southeast Asia.

Soy nuggets include *tau-shih* from China, *tao-si* from the Philippines, *tau-cheo* from Malaysia, *tauco* from Indonesia, and *Hamanatto* from Japan.

2892. Nabetani, Hiroshi; Watanabe, Atsuo; Horikita, Horiyuki. 1985. [Energy consumption for waste and waste water treatment in food processing. III. Natto (fermented soy bean) processing]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 46. p. 73-77. March. [1 ref. Jap; eng]
Address: National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

2893. Nikkuni, Sayuki; Itoh, Hiroshi; Tanaka, Masahi; Ohta, Teruo. 1985. Changes in SDS polyacrylamide gel electrophoretic pattern of water-insoluble fraction during miso fermentation (Studies on soybean protein digestion during miso fermentation part 1). *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 46. p. 281-89. March. [14 ref. Eng; jap]
• **Summary:** Reprinted from *Nippon Shokuhinkogyo Gakkaishi (J. of Food Science and Technology)* 31(8):502-10 (1984). Address: 1,2&4. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3. Gino Miso Co. Ltd., Matsumae-machi, Iyo-gun, Ehime prefecture 791-31, Japan.

2894. Ohtani, Toshio; Nikkuni, Sayuki; Hoshino, Chimaki; Nabetani, Hiroshi; Watanabe, Atsuo. 1985. [Energy consumption for waste and waste water treatment in food processing. II. Miso (soy bean paste) processing]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 46. p. 67-72. March. [2 ref. Jap; eng]
Address: National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

2895. Public Sector Consultants, Inc. 1985. The potential for expanding the Michigan soyfoods industry. In: *The Potential of Food Processing for Economic Development in Michigan*. PCS, Knapp's Centre, 300 S. Washington Square #401, Lansing, MI 48933. See p. III-45 to III-67. 28 cm. [47 ref]
• **Summary:** Michigan soyfoods manufacturers include Michigan Soy Products (Royal Oak; Tofu, soymilk; 1,650

lb/week of tofu), Oryana Soy Shop (Traverse City; Cooperative. Tofu, tempeh, soysage; 275 lb/week of tofu), The Soyplant (Ann Arbor; Cooperative. Tofu, tempeh, tempeh burgers, soymilk, dofugan, soysage; 7,500 to 10,000 lb/week of tofu), INARI Ltd. (Mason; Soynuts), Michigan Farm (Bitely; Miso), Hercules, Inc. (Harbor Beach; HVP), Eden Foods (soymilk importer, which hopes to build a soymilk plant in Michigan), and Midwest Natural Foods (Ann Arbor).

“Hercules produces nonfermented soy sauce and sells its product to large final producers, such as La Choy and Beatrice Foods, located outside Michigan for sale under their labels.” This report was prepared for the Michigan Dept. of Agriculture. March 15. Address: Lansing, Michigan.

2896. Steinkraus, K.H.; Ayres, R.; Olek, A.; Farr, D. 1985. Factors influencing permeability of the cell membrane of the osmotolerant yeast *Saccharomyces rouxii* grown in the presence and absence of 18% NaCl. I. *International J. of Food Microbiology* 1(5):291-99. March. [31 ref]

• **Summary:** *Saccharomyces rouxii* is an essential microorganism in the high salt fermentations Chinese soy sauce, and Japanese shoyu and miso. It can grow and metabolize at high osmotic pressures. “Its ability to produce ethanol, glycerol and concentrate amino acid in high salt contributes to the desirable meat-like flavors of soy sauce and miso.” Address: 1-3. Inst. of Food Science, Cornell Univ., Geneva, New York.

2897. Taira, Harue; Hoshino, Shiro. 1985. [Quality of soybean seeds grown in Japan. VIII. Effect of late-season culture with close planting on chemical composition and suitability for food processing]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 46. p. 137-44. March. [14 ref. Jap; eng]
Address: 1. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 2. Niigata Agric. Exp. Station, Nagaoka, Niigata, Japan.

2898. Belleme, John. 1985. New developments at American Miso Co. (Interview). *SoyaScan Notes*. April 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In Feb. 1984 (actually 1 Oct. 1983) John sold his ownership in the American Miso Co. to Barry Evans. Originally, John, Sandy Pukel, and Barry each owned one-third of the business. Before that, it had 6-7 owners. First Sandy (under pressure from Barry) sold his one-third to Barry, which made Barry the majority shareholder. After that, Barry let John run the company, which is doing very well in terms of productivity and profitability. They are selling all the miso they can possibly make.

At the time John sold his stock, he set up a new corporation named Just In Foods, Inc. (named after his son, Justin) to make second-generation miso products. John recently sold Just In Foods (which makes Miso Master brand products) to Barry Evans, because John doesn't own a miso plant. John is now a paid consultant for American Miso Co.

Miso Master is a marketing company for miso and miso products, and also a brand name. Chick Peaso is a mellow miso made with chick-peas instead of soybeans; it contains no soy. Introduced in May 1984, it was first sold in bulk from Great Eastern Sun but is now sold in 1-pound plastic bags.

Two tofu-miso dips were introduced in Nov. 1984; they are made by Nasoya using John's miso. They are both selling well, under the Miso Master label. Another new product is a delicious spaghetti sauce produced by Ventrillos in New York; it is made with a very mellow miso, low in salt. John sells John Troy about 35,000 lb/year of mellow miso; that's all Troy uses but Belleme does not make much money on this. Troy's miso mustard has 3-month amakuchi miso in it. John first saw this product in Fukuoka, Japan, made by Toshi Shiroozu, a man who makes mellow white miso for Eden Foods; it was in 1-pound packages, exported by Muso Shokuhin. John had a product named Mellow Ebony Miso, made with black soybeans. It was delicious but the color was grotesque, so he phased it out.

Another new non-profit organization is the Institute for Fermented Foods. Its logo is a pickle barrel with a rock on it borrowed from the book *Miso Daigaku*.

Pretty soon John is going to stop making miso. He is now training Don DeBona, who Barry sent to be trained. After that, John plans to run Barry's Just In Foods full time. John's wife, Jan, is writing a book on Japanese foods. John plans to go back to Japan for a while. Address: North Carolina.

2899. Product Name: Traditional Red Miso, Mellow White Miso, Sendai Genmai Miso, Traditional Barley Miso, Mellow Barley Miso, Amakuchi Mugi Miso, or Inaka Mugi Miso.

Manufacturer's Name: American Miso Co., Inc.

Manufacturer's Address: Box 541, Route 3, Rutherfordton, NC 28139.

Date of Introduction: 1985. April.

Ingredients: Barley: Soybeans, barley koji, sea salt, well water. Red: Soybeans, brown rice koji, sea salt, well water.

Wt/Vol., Packaging, Price: 1 lb.

How Stored: Refrigerated.

New Product–Documentation: Label. 1985. 3 by 4.5 inches. Self adhesive. Barley: Black and brown on white. Red: Red and black on white. "All natural. Unpasteurized. For over 400 delicious recipes, see *The Book of Miso* by William Shurtleff & Akiko Aoyagi." Label. 1985. 3.25 by 4

inches. Self adhesive. Blue and black on white. Fine line farm illustration. "Inaka Mugi Miso. Traditionally-made organic miso. Non-pasteurized. No preservatives. Country barley miso. Aged at least 24 months." Ad in *Macromuse*. 1984. No. 18. Winter. p. 47. And in *East West Journal*. 1985. April. p. 23. "Introducing Our 7 New Misos. Traditionally Made and Superbly Delicious." Leaflet. 8½ by 11 inches. Labels (2-color) reprinted in *Soyfoods Marketing*. Lafayette, CA: Soyfoods Center.

Labels (plastic tubs for all 7 types) sent by American Miso Co. Each 1-pound tub is 4.5 inches across the top, and 3 inches deep. Black, brown, and one other bright color on yellowish beige. Several varieties (Traditional Red, Traditional Barley) have the Miso Master logo on the lid. Ingredients for each are listed but no nutritional composition is given, so the salt content is unknown. "Traditionally-made organic miso. All natural. Unpasteurized. Refrigerate. Naturally fermented soybean paste. Made with imported Lima sea salt." Circle K Kosher. On the side of each tub is a recipe, a statement about Miso Master, and a statement about this particular type of miso. Amakuchi Mugi Miso has been renamed Sweet Barley Miso, and Inaka Mugi Miso has been renamed Traditional Barley Miso.

Letter (fax) from Don DeBona. 1997. April 20. America Miso began selling its miso in plastic tubs soon after Don took over in 1985. Initially and before that it was sold in plastic bags. Since 1996 it has been available in glass jars (10 oz) as well.

2900. American Miso Co., Inc. 1985. Introducing our 5 misos. Traditionally made and superbly delicious (Ad). *East West Journal*. April. p. 23.

• **Summary:** This half-page, black-and-white ad begins: "The American Miso Company is proud to present its own domestic organic misos. From the choicest cultured organic rice or barley and whole organic soybeans, to our deep well water and pure sea salt, we use only the finest ingredients available. Then naturally aged in wood... Because all our misos are unpasteurized and high in enzymatic activity, refrigeration is recommended." The five are: Traditional red miso. Mellow white miso. Traditional barley miso. Mellow barley miso. Inaka mugi miso (Country barley miso). The American Miso Company logo, crossed sheaths of grain in a circle, is in the lower right corner. Address: Box 541, Route 3, Rutherfordton, North Carolina 28139. Phone: (704) 287-2940.

2901. Estella, Mary. 1985. Natural foods cookbook: Vegetarian dairy-free cuisine. Briarcliff Manor, NY, and Tokyo: Japan Publications. 250 p. April. Color plates. Index. 26 cm. [22 ref]

• **Summary:** This macrobiotic cookbook, though free of dairy products, uses fish in many recipes. In the chapter

titled "Getting Started" there is a section on "Soy Foods" (p. 26-27) which begins by stating that "Soybeans, the king of beans, are ironically not often eaten as whole beans, but instead are processed into miso, shoyu, tofu, tamari, and tempeh." Each of these foods are discussed briefly. Three types of soy sauce are defined: Shoyu, tamari, and commercial soy sauce (which is said to be artificially colored and processed). Chapter 7, titled "Whole grains, beans, tofu and tempeh" contains 7 tofu and 7 tempeh recipes. There are a large number of soy-related recipes throughout the book, including those using miso, black soybeans, and tamari.

2902. Shurtleff, William; Aoyagi, Akiko. 1985. Soyfoods industry and market: Directory and databook 1985. 5th ed. Lafayette, California: Soyfoods Center. 220 p. Index. April. 28 cm. Updated every 1-3 years with a bibliographic supplement. [360 ref]

• **Summary:** Contents: 1. Introduction. 2. Directory of soyfoods manufacturers. 3. Directory of soyfoods support industry: Goods & services. 4. The many types of soyfoods. 5. Historical: Historically most important books and serials, earliest references to individual soyfoods. 6. Year in review. 7. Soyfoods industry and market in the U.S. 8. Tofu industry and market in the U.S. and Canada. 9. Soymilk industry and market: Worldwide and in the U.S. 10. Tempeh industry and market in the U.S. 11. Soy sauce industry and market in the U.S. and Japan. 12. Miso industry and market in the U.S. and Japan. 13. Soynut industry and market in the U.S. 14. Natto industry and market in Japan. 15. Statistics on fermented soyfoods in East Asia. 16. Soyfoods in restaurants, delis & cafeterias. 17. Soybean crushing industry in the U.S. 18. Soy oil industry and market in the U.S. 19. Soy flour and cereal-soy blends industry and market worldwide. 20. Modern soy protein products industry and market in the U.S. 21. Soyfoods terminology and standards. 22. Names of soyfoods in major foreign languages. 23. Soybean production worldwide and country-by-country. 24. Key institutions working with soyfoods worldwide. 25. Measures, weights, and equivalents. 26. About the Soyfoods Center & soyfoods consulting services. 27. Bibliography.

In February 1977 a Gallup poll in America showed a remarkable shift in the public's awareness of and attitudes toward soyfoods. The sampling of 1,543 adults across the nation found that: 33% believe that soybeans will be the most important source of protein in the future—ahead of fish at 24% and meat at 21%. 55% believe that "soy products have a nutritional value equal or superior to that of meat." 54% reported that they "had eaten foods containing soy protein as a prime ingredient within the past 12 months." Younger age groups living in large cities and those with college or university educations had the most favorable attitudes toward soy protein, indicating that support for

soyfoods is likely to grow in the future. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

2903. *Asahi Shinbun (Asahi Daily News, Tokyo)*. 1985.

Enbun 1% no miso kaihatsu: Konnyaku o riyō shite. Datsuen [Marudai has developed 1% salt miso: Removed the salt, added konnyaku]. May 12. [Jap]

• **Summary:** Marudai Miso Co. will sell this low-salt miso under the Marutin brand to food processing companies. The story also appeared in *Toyo Shimpo* (May 21).

2904. Kushi, Michio; Jack, Alex. 1985. Diet for a healthy heart. *East West Journal*. May. p. 34-38.

• **Summary:** "In the Middle Ages, the Black Death [bubonic plague] earned its reputation by killing about one-third of the population of Europe. Today, cardiovascular disease claims the lives of over 50 percent of the people in the United States and in many other advanced industrial societies... heart disease is more deadly than all other modern scourges combined, including cancer and loss of life from car accidents, crime, and war..."

"One out of every five men in this country will have a heart attack by age sixty... This year, according to the American Heart Association, 1.5 million Americans will have a heart attack, and 550,000 of them will die."

According to Marstow and Page (1978. *National Food Review*. Dec. p. 28-33. "Nutrient content of national food supply), the fat in the American diet comes from the following sources:

43% cooking and baking fat, salad oils, butter, and margarine.

34% red meat, poultry, and fish.

12% dairy products, not including butter.

4% beans, peas, nuts, soy flour, grits.

4% grains, vegetables, fruits.

3% eggs.

The authors believe that a macrobiotic diet based on natural foods (including miso soup and tofu) can largely prevent heart disease.

2905. Mori, H. 1985. Shōwa 57 nendo ni okeru shōyu, miso no kenkyū gyōseki [Review of annual achievements in shoyu and miso research]. *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 78(5):328-59. [766 ref. Jap]

• **Summary:** This important Japanese-language article, published each year in the May issue of this periodical, has two parts: (1) A review of the past year's major discoveries and developments in the fields of miso and soy sauce in Japan. (2) A bibliography related to those discoveries and developments. Address: Noda Sangyo Kagaku Kenkyusho.

2906. *Natural Foods Merchandiser*. 1985. 6th Annual Natural Foods Merchandiser Merchandising Awards. May. p. 1, 48, 49.

• **Summary:** Three soy products won awards. A color photo shows each. Gold: Naturally Preferred Miso Mustard by American Natural Foods, Malted by Westbrae; Silver: Ah Soy by Great Eastern Sun. Color photos show all three products.

2907. **Product Name:** Soft Tofu Cheese (Non-Dairy Cream Cheese / Soft Tofu-Miso Dip) [Plain, or Herb].

Manufacturer's Name: Simply Natural, Inc.

Manufacturer's Address: P.O. Box 295, Norma, NJ 08347.

Date of Introduction: 1985. May.

Ingredients: Tofu, sweet white miso, seasonings.

Wt/Vol., Packaging, Price: 8 oz round plastic container. \$2.59 retail.

How Stored: Refrigerated.

Nutrition: Per 1 oz.; 43 calories.

New Product–Documentation: Spot in Natural Foods Merchandiser. 1987. June. p. 64. “Tofu Cheese.” The product is similar to cream cheese. Ad in Natural Foods Merchandiser. 1986. Oct. p. 18. “So Who Needs Cream Cheese Any More? Mama Would Approve... Can be used in place of cream cheese and ricotta cheese.” Also ad in Vegetarian Times, Dec. 1986. p. 9. This address is given as Simply Natural, Inc., Norma, New Jersey 08347. Label. 1986. 4.5 inches diameter plastic lid. Green and purplish red on white. “A Non-Dairy Cheese Substitute. Spreads smoothly. Ideal on breads, bagels, crackers, on sandwiches, in dips and in sauces.” Spot in Soya Newsletter. 1987. 1(4):6. New Onion / Chive or Garlic flavors.

Spot in Gourmet Today (Birmingham, Michigan). 1987. Aug. The founders of Simply Natural Inc. are Bob Pirello and Christina Hayes. Talk with Christina Hayes Pirello. 1988. May 11-12. See Brief History of Simply Natural, Inc. This product is a creative product made by wrapping firm tofu in cheesecloth and embedding it in sweet white miso, then blending / pureeing it. Sold initially as a catering item, it was first sold commercially in May 1985.

Note: This is the earliest record seen (April 2001) concerning Simply Natural, Inc.

2908. Tanaka, Nobumasa; Kovats, Susan K.; Guggisberg, Jean A.; Meske, L.M.; Doyle, M.P. 1985. Evaluation of the bacteriological safety of low-salt miso: A research note. *J. of Food Protection* 48(5):435-37. May. [12 ref]

Address: The Food Research Inst., Univ. of Wisconsin-Madison, 1925 Willow Drive, Madison, WI, 53706.

2909. Torii, Yasuko. 1985. The Book of Tôfu to no deai: Amerika no tôfu buumu no haikai [My encounter with The Book of Tofu (by Shurtleff & Aoyagi): The background of the tofu boom in America]. *Daizu Geppo (Soybean Monthly News)*. May. p. 31-35. [Jap]

Address: Nihon Yuki Nogyo Kenkyukai Jonin Kanji.

2910. American Natural Foods. 1985. You're gonna' love that Smoky Mountain twang (Ad). *Vegetarian Times*. June. Inside rear cover.

• **Summary:** This is a full-page color ad (copyright 1984) for Smoky Mountain Sizzlin', an all-natural barbecue sauce. The left half shows the large glass bottle and label, with the Great Smoky Mountains in the background. The right half of the ad talks (in colorful Appalachian hillbilly style) about the origins of barbecue, and the product. “Probably the best barbecue in America comes from the Great Smoky Mountains. Ever since the Cherokee ladies were gracious enough to teach the new settlers their cookin' secrets, there's been some all-mighty sweet smoke mixin' down along the hollows with the mist and the mountain laurel. That's what new Smoky Mountain Sizzlin's all about. Mixin' sweet smells, good times and powerful fine eatin.'”

This sauce is “made from real special things Red ripe tomatoes, virgin peanut oil, molasses, and a secret bunch of natural herbs and spices. And apple cider vinegar and red miso, both made and wood aged right here in the Great Smokies. It's all natural and all mighty delicious.” Note: The fourth ingredient is red miso (made in North Carolina) and the sixth is tamari soy sauce. Address: Suite 21 The Courtyard, Chapel Hill, North Carolina 27514. Phone: (919) 929-0113.

2911. Kushi, Aveline; Jack, Alex. 1985. Aveline Kushi's complete guide to macrobiotic cooking: For health, harmony, and peace. New York, NY: Warner Books. xvii + 414 p. June. Illust. Index. 23 cm. [36 ref]

• **Summary:** Index entries include: Miso 61, Tofu 50, Tamari 19, Tempeh 17, Whole dry soybeans 6, Natto 3, Soymilk 3, Yuba 1. This book calls ganmodoki “Tofu Croquettes” and further states that “*Gan* means ‘crane’ and *modoki* means ‘looks like.’” Among the 31 chapters are ones titled Beans (incl. basic black soybeans, and brown rice with black soybeans); Tofu, Tempeh, and Natto (including yuba); Sea Vegetables; Condiments and Garnishes (incl. miso), and Fish and Seafood.

Under “Black Soybeans” (p. 257) were read: “These nice shiny beans are also called Japanese black beans. They have a strong, delicious taste. Their juice is said to make the voice clear and beautiful. Throughout Japan, mothers prepare their children for music tests and singing lessons with this dish. Black soybeans are also used medicinally to help discharge animal toxins from the body.” Note: This is the earliest macrobiotic cookbook seen that uses the term “Black soybeans” in a recipe title. All previous macrobiotic cookbooks called them “Black beans.”

Contains recipes for homemade tofu, tempeh, and natto. Address: Brookline, Massachusetts.

2912. Miller, Deborah. 1985. Taking the mystery out of miso. *Whole Foods (Berkeley, California)*. June. p. 43-44. [3 ref]

• **Summary:** An introduction to miso.

2913. **Product Name:** Westbrae Natural Tofu Ramen. Instant Asian-Style Whole-Wheat Noodles & Miso Flavor Broth.

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.

Date of Introduction: 1985. June.

Ingredients: Asian style noodles: whole wheat flour, sifted wheat flour, and sea salt. Vegetable broth: powdered shoyu (soybeans, wheat and sea salt), dried tofu (soybeans, nigari bittern), shiitake mushroom powder, kombu seaweed powder, sea salt, dried onion, garlic, white pepper, dried ginger, green onion.

Wt/Vol., Packaging, Price: 3.1 oz (90 gm).

How Stored: Shelf stable.

New Product–Documentation: Label. 1986, undated. 10 by 7 inches. Plastic. Red, green, white, brown on yellow. Color picture of bowl of Tofu Ramen.

2914. Belleme, John. 1985. Update on American Miso Co. (Interview). *SoyaScan Notes*. July 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** About 18 months ago [in Feb. 1984] John sold his interest in American Miso Co. to his partner, Barry Evans. Barry now owns all of the company; he is not interested in teaching interns. The company's core market is hard-core macros. They must sell 500,000 pounds/year just to break even. Address: P.O. Box 457, Saluda, North Carolina 28773.

2915. **Product Name:** Naturally Delicious Fried Rice Sandwich (With Tofu).

Manufacturer's Name: Naturally Delicious.

Manufacturer's Address: Asheville, North Carolina. Phone: 704-253-7656.

Date of Introduction: 1985. July.

Ingredients: Organic brown rice fried with scallions and soy sauce, wrapped in a whole wheat tortilla with steamed organic carrots, alfalfa sprouts, miso tahini sauce, tofu, green leaf lettuce.

Wt/Vol., Packaging, Price: 12 oz.

How Stored: Unrefrigerated and perishable.

New Product–Documentation: Label sent by Paul Duchesne. 1989. Aug. 11. Handwritten "Naturally delicious. Made fresh today. To eat; peel back wrapper from one end." Talk with Paul Duchesne. 1989. Aug. Barbara Svenning originally learned how to make this sandwich from Paul. She made it at the Natural Cafe in Santa Fe, New Mexico,

with her husband Marty Roth. When she separated from Marty, she moved to Asheville, North Carolina, where Jack Garvey (a former husband) and her children were living. She made a line of at least 28 Fried Rice Sandwiches (many of which contain tofu) and whole meals, which she sold at various places.

Talk with Dinner for the Earth. 1989. Aug. 15. This is a natural food store and deli that has been in business for 13 years and has sold Barbara's line of sandwiches for 3-4 years. In April 1989 Barbara Svenning became manager of the Deli at Dinner for the Earth (160 Broadway St. Phone: 704-253-7656). She lives in Black Mountain, North Carolina.

Talk with Barbara Svenning. 1989. Aug. 21 and 23. It was a coincidence that Great Eastern Sun was established in Asheville. Barry Evans was partners with Sandy Pukel and Michio Kushi. They had a miso factory [American Miso Co.] in North Carolina and they wanted to establish GES near it. Marty suggested Asheville, since it was a good location and he could live their near his wife's children (Jack Garvey lived in Asheville). Barbara did not make her brown rice and tofu sandwiches while Marty was working at Great Eastern Sun. After Marty Roth had set up Great Eastern Sun in Asheville, North Carolina, he continued to live in nearby Black Mountain but worked for Chico-San for a while and set up the Ohsawa America mail order program for Bob Kennedy. Then he began working for Westbrae in California, where he and Barbara and her son relocated. After 2 years, in July 1985, when her son was age 3, she left Marty Roth (they had never been married), and returned by herself to Asheville, North Carolina to be with her two other children. In Asheville, she established a new company named Naturally Delicious. She ran it out of some else's kitchen and sold 12-15 sandwiches a day at only one store, Nothing But Natural, which promised to tell any health inspectors that the sandwich was made in their kitchen. During that time another woman, Barbara Hoffman, who now lives in Israel, sort of took over the sandwich business. When Nothing But Natural went out of business, she moved to Black Mountain (where she still lives), got her own kitchen, and sold the sandwich exclusively to Dinner for the Earth, where she now runs the deli. Yet she still owns the brown rice sandwich business. She makes them at home and sells them to Dinner for the Earth. "Its still my little baby, still an underground business. I make about 15 fresh each day and they are different every day. Only the chapati, fried rice, and lettuce are the same. I make a Mexican, and Indonesian, a Chinese, etc. Not all contain tofu. Sometimes its a tofu sauce, or barbecued or baked tofu. I guarantee the sale and take back any not sold that day. There is a profit of about \$1 each. I also make another nice wheat-free tofu sandwich called Barbecued Tofu on Millet. It's on square slices of millet bread. It started it about 6 months ago."

2916. Westbrae Natural Foods. 1985. Distributor catalog, FOB pricing: Aug. 1, 1985. Emeryville, California: Westbrae. iv + 11 + [7] p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on a tan background. Pages i-iv are general information, 1-11 are a computer-printed price list, and the last 7 are a product glossary. Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (415) 658-7518 (orders).

2917. Westbrae Natural Foods. 1985. Product listing [glossary]: Aug., 1985. Emeryville, California: Westbrae. [7] p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on an orange background. Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (800) 621-0851.

2918. Barrett, Clare. 1985. A practical guide to soyfoods. *Vegetarian Times* No. 96. Aug. p. 33-40. [14 ref]

• **Summary:** An overview of fresh green soybeans, whole dry soybeans, soynuts, soy sprouts, soy flour & soy grits, soy oil, soy protein isolates, soymilk, okara, tofu, tempeh, soy sauces, miso, natto. Concludes with a list of 14 recommended books on soyfoods.

2919. Eckett, Alison. 1985. Beating the protein crunch. A growing number of people are discovering the range of soyfoods, both traditional and modern, that can be made from this bean. *Food Processing (UK)* 54(8):25-28. Aug.

2920. **Product Name:** Premier Japan Miso Marinade.
Manufacturer's Name: Edward & Sons Trading Co. (Importer). Made in Japan.
Manufacturer's Address: P.O. Box 3150, Union, NJ 07083.

Date of Introduction: 1985. August.

New Product–Documentation: Spot in *Natural Foods Merchandiser*. 1985. Aug. "All natural." In glass jar.

2921. Gipson, Beckilynn. 1985. Processed proteins: Markets, developments. Business Communications Co., Inc., 9 Viaduct Rd., P.O. Box 2070C, Stamford, CT 06906. 112 p. Aug. Report GA-043R. *

2922. *Hawaii Beverage Guide (Honolulu)*. 1985. New food & beverage director for Ala Moana Americana Hotel. Aug.

• **Summary:** Raymond Glory Jr. is the new director. This Hawaiian hotel has a restaurant named the Mango & Miso restaurant.

2923. Hesseltine, C.W. 1985. Fungi, people, and soybeans. *Mycologia* 77(4):505-25. July/Aug. [92 ref]

• **Summary:** In this Mycological Society of America Annual Lecture, presented on 7 Aug. 1984 at Colorado State University (Fort Collins, Colorado), Dr. Hesseltine gives a nice history of the research conducted by him and others at the Northern Regional Research Center (NRRC) on Asian soybean fermentations, including fermented tofu (Frank Meyer, early USDA plant explorer, in a letter dated 21 Nov. 1916, states: "Parcel No. 125c contains first quality Chinese soybean cheese: please taste a little on the point of a knife; it is extremely appetizing."), sufu, shoyu, miso, tempeh, Chinese black beans (soy nuggets), natto, and "the use of lactic acid bacteria to produce a yogurt product from soybeans." He also studied non-fermented tofu.

Dr. Hesseltine pays a nice tribute to the work of Dr. A.K. Smith of the NRRC (p. 506-07). After his trip to East Asia shortly after World War II, Dr. Smith (a protein chemist) made great efforts to promote cooperation between the USDA, particularly the NRRC, and Japan in conducting research to understand how our exported soybeans were used for food. He had the foresight to recognize the importance of studying soybeans used in such huge quantities for processing into human food. Dr. Smith was instrumental in arranging for two Japanese scientists (Dr. Tokuji Watanabe and Dr. Kazuo Shibasaki) to come to the NRRC to do research on tofu and miso. "This really began a new era of research on use of Oriental methods to produce foods from soybeans."

Also discusses how Ko Swan Djien came to the NRRC in 1960 for 6 months and ended up studying the tempeh fermentation process and microorganisms (leading to a focus on *Rhizopus oligosporus*).

Photos show four famous Japanese scientists who studied fermented foods: (1) Prof. Teizo Takahashi. (2) Ryoji Nakazawa. (3) Kin-ichiro Sakaguchi. (4) Kendo Saito. Address: NRRC, ARS/USDA, Peoria, Illinois.

2924. *Natural Foods Merchandiser*. 1985. New products, changing diets propel soyfood sales. Aug. p. 1, 39-40, 42-44.

• **Summary:** "The soyfoods revolution is being fueled by several powerful trends... Many consumers are attracted to soyfoods because they are an excellent no-cholesterol 'replacement' for meat and dairy products. Soyfoods are also growing with the rising tide of macrobiotics, which promotes the use of various soy products. And there are now enough soyfoods on the market to create synergy within the category: consumers buying soymilk try tofu, and go from tofu to tempeh.

"Tofu is by far the best-selling product in the soyfoods category, according to figures provided by the Soyfoods Association [and Soyfoods Center]. An estimated \$60 million worth of tofu is produced and sold in the U.S. annually, while frozen tofu desserts, entrees, and prepared products account for approximately \$25 million. Soymilk

sales have jumped from near zero a few years ago to \$10 million today, while tempeh is an emerging growth category at 5 million in yearly sales." All of the retailers interviewed by NFM indicated that the soymilk category is experiencing major growth. Most of the growth has been in six-ounce aseptic individual serving packages supplied by such companies as Westbrae, Ah Soy, Vitasoy and Eden. Health Valley's Soy Moo has recently been repackaged in a 8.45-ounce package.

"Tempehworks produces approximately 7,000 pounds of tempeh a week during peak months, including that used in its processed tempeh products, such as Fakin' Bacon, New York Style Strami and Kansas City Barbecue."

Includes "A directory [sic, glossary] of soyfoods terminology" that defines tofu, tempeh, soybean, miso, soymilk, shoyu/tamari, TVP or TSP, soy protein isolate, defatted soy flour, and "secondary" soyfoods products.

2925. Ofusa, Tsuyoshi. 1985. Shii bejitaburu: Kenko no tame no kaisô dokuhon [Sea vegetables: A book for health]. Tokyo: Kodansha. 194 p. Aug. 20. Illust. No index. 18 cm. [Jap]

Address: Yamamoto Nori Co., Tokyo, Japan.

2926. Ohsawa-America. 1985. Chico-San sells products line (Ad). *East West Journal* 15(9):33. Aug.

• **Summary:** "Ohsawa-America, a newly formed macrobiotic food company, has recently purchased the Ohsawa-Japan products line from Chico-San, a division of H.J. Heinz, Inc." The ad/letter is signed "... in the spirit of Ohsawa, Herman Aihara, Bob Kennedy, Marty Roth, Joel Wollner." The mail order catalog and price list includes 4 types of soy sauce, 5 types of miso, 3 miso condiments, 3 types of koji, and 6 seaweeds.

This ad also appeared in the Sept. 1985 issue (p. 4) of this magazine. Address: P.O. Box 12717, Northgate Station, San Rafael, California 94913-2717. Phone: 415-492-8110.

2927. *Prepared Foods*. 1985. Miso—all purpose seasoning. Aug.

• **Summary:** A brief introduction to miso. A table (courtesy of Miyako Oriental Foods) shows the composition of light yellow miso and red miso.

2928. *Cultivar*. 1985. Le soja en alimentation humaine [Soya in human nutrition]. No. 186. p. 77-78. Sept. [Fre]

• **Summary:** A brief introduction to tofu, soymilk, soy sauce, tempeh, miso, soy flour, soy protein isolates, and concentrates. Address: France.

2929. Kotsch, Ronald E. 1985. *Macrobiotics: Yesterday and today*. Tokyo and New York: Japan Publications Inc. 292 p. Sept. Illust. Index. 26 cm. [144* ref]

• **Summary:** Contents: 1. Ekken Kaibara: The grandfather of macrobiotics. 2. Sagen Ishizuka: The founder of modern macrobiotics. 3. George Ohsawa: The early years (1893-1929; Yukikazu Sakurazawa, later known as George Ohsawa was born on 18 Oct. 1893 in a western suburb of Kyoto, Japan, the family's eldest child). 4. George Ohsawa: The first sojourn in the west (1929-1936). 5. George Ohsawa: Return to Japan in crisis (1936-1939).

Photographic interlude for *Macrobiotics Yesterday*. Illustration (line drawing) of Ekken Kaibara. Photos of Ishizuka, Nishibata, Ohsawa's parents, George Ohsawa (many from 1901-1966). 6. George Ohsawa: The war years (1940-1945). 7. George Ohsawa: Hope for a new Japan and a new world (1945-1953). 8. George Ohsawa: The world journey of the penniless samurai (1953-1966; George and Lima visited India [Nov. 1953-July 1955]; Africa [Aug. 1955-Feb. 1956, incl. Kenya, and 3½ months with Albert Schweitzer at Lambarene, Gabon]; Paris, France and Brussels, Belgium; New York City, USA [late 1959-Oct. 1961]; France [around 1961 he met Louis Kervran]; Tokyo [most of 1963-64]; Vietnam 1965; Tokyo, where he died on 23 April 1966, probably of filarial parasites contracted in Lambarene, and smoking). 9. George Ohsawa: The man and the legacy. 10. After the master: Part one: America.

Photographic interlude for *Macrobiotics Today*. Photos are given of Toshi Kawaguchi, Michi Ogawa, Hiroshi Maruyama, Kaoru Yoshimi, Francoise Riviere, Cecile Levin, Dr. Kikuo Chishima, Dr. Moriyasu Ushio, Michio and Aveline Kushi, Herman and Cornelia Aihara, the Kushis, Aiharas, and Shizuko Yamamoto, William Dufty, Bill Tara, Aveline Kushi and Wendy Esko, Alex Jack, Dr. Marc van Cauwenberghe, Edward Esko, Murray Snyder, Noboru Muramoto, Jacques and Yvette de Langre, Jerome Carty, Duncan Sim, Lima Ohsawa, Shuzo Okada, Hideo Ohmori, First European Congress of Macrobiotics in London, Nov. 1978, Lenk summer camp, Switzerland, July 1984, Jan Lansloot, Peter Doggen, Rik Vermuyten, Georges Van Wesenbeeck, Roland Keijser, Mayli Lao Shun, Tomio Kikuchi (in Brazil).

11. After the master: Part two: Japan. 12. After the master: Part three: Europe and elsewhere. 13. The gospel according to Kushi. 14. Macrobiotics in western culture. 15. Prospects for the future. Bibliography.

This is the best and most objective available history of macrobiotics. The author, an excellent historian and writer, with a delightful sense of humor and light touch, began his study and practice of macrobiotics under Michio Kushi in Boston in Jan. 1967. This book is based on his doctoral dissertation titled "Georges Ohsawa and the Japanese Religious Tradition," submitted on 1 April 1981 for a PhD degree in History of Religions from Harvard University. Pages 185-86 discuss briefly the role of the macrobiotic movement in introducing soyfoods (especially miso, shoyu,

and tofu) and natural foods to America. Address: The New North Church, Hingham, Massachusetts (18 Mar 1985).

2930. Kotsch, Ronald E. 1985. The origins of the Lima Food Co. at St. Martin-Latem, Belgium (Document part). In: R.E. Kotsch. 1985. *Macrobiotics: Yesterday and Today*. Tokyo and New York: Japan Publications Inc. 292 p. See p. 131-32.

• **Summary:** During the late 1950s, George Ohsawa lectured in Paris and Brussels, before he made his first trip to the USA. His lectures in these two cities attracted several hundred listeners and made them his two main bases of support in Europe. Over the next few years, the macrobiotic community grew in Paris and Institut Tenryu became an active study center which also provided macrobiotic foods; In Brussels, there was a study center, restaurant, and food outlets. "In addition to Brussels, St. Martin-Latem became a focus of activity. In this small town near Ghent a noted Belgian painter named Edgar Gevaert lived with his large family. Gevaert had been a soldier in the First World War and afterwards bought a piece of sandy wasteland in the countryside. He made it into a near self-sufficient homestead, living there with his wife and eleven children and pursuing his art. He was active in the World Federalist Movement and it was through this connection that he met Ohsawa. Gevaert adopted Ohsawa's macrobiotic outlook and did a great deal to help activities. In 1959, with the cooperation of his eldest son [Pierre], he established the Lima Food Co. at St. Martin-Latem. This was the first explicitly macrobiotic food company outside Japan. Kaoru (Clim) Yoshimi and Fujiko (Ellie) Sugamoto came, at Ohsawa's request, from India to teach cooking, miso-making, and other macrobiotic food techniques. Lima Products flourished, soon distributing food all over Europe and to the United States. It has remained to this day a leader in the production and distribution of macrobiotic quality food in Europe." Address: The New North Church, Hingham, Massachusetts (18 Mar 1985).

2931. Kotsch, Ronald E. 1985. Noboru Muramoto (Document part). In: R.E. Kotsch. 1985. *Macrobiotics: Yesterday and Today*. Tokyo and New York: Japan Publications Inc. 292 p. See p. 180-1, 187. 26 cm. [1 ref]

• **Summary:** Noboru Muramoto, who has helped to promote macrobiotics on the West Coast of the USA, arrived in California in 1971. An associate of George Ohsawa from Japan and an expert on medicinal herbs, his popular book titled *Healing Ourselves* was published in 1973 by Michel Abehsera's Swan House Press; it introduced many therapeutic uses of food. A student of traditional Japanese food production, Muramoto now lives in southern California, where he produces high quality sea salt, miso, umeboshi, and plum vinegar. Address: The New North Church, Hingham, Massachusetts (18 Mar 1985).

2932. McSweeney, Daniel. 1985. Consumer survey 1985. *Whole Foods*. Sept. p. 23-27.

• **Summary:** The percentage of respondents who purchased a type of product at a natural foods during the past 12 months, in descending order of popularity: Tofu 64.5%. Miso 50%. Sea vegetables 37.9%. Non-dairy ice cream 37.9%. Frozen tofu entrees 21.7%. Note: The sample size is not given.

2933. **Product Name:** [Big Dream Time Powdered Tempeh].

Foreign Name: Taimu Taimu.

Manufacturer's Name: Nakasho Bussan.

Manufacturer's Address: Japan.

Date of Introduction: 1985. September.

Wt/Vol., Packaging, Price: Bottle.

New Product-Documentation: Toyo Shinpo (Soyfoods News). 1985. Sept. 21. p. 8. "New tempeh product announced. Nakasho Bussan to sell it [powdered tempeh]." This new product called Taimu Taimu (Time + Big Dream) was developed by the Japan Natto Assoc. It is their first commercial product. A 450 gm (1 lb) bottle sells for 6,000 yen (\$26.67). Use it in miso soup, milk, juices or just mix with hot or cold water.

2934. S&S Public Relations, Inc. 1985. Miso-Japan's 1,000 year old health and flavor secret now in America (News release). 40 Skokie Blvd., Suite 430, Northbrook, IL 60062. 3 p. + photo. Oct. 6.

• **Summary:** About miso, American Natural Foods, and their new line of four products. A black-and-white photo shows a bottle of The Works. An attachment, titled "Cooking with miso-General principles," was developed by Just In Foods [American Miso Co.] in 1984. Note: This news release generated widespread publicity for ANF. Address: Northbrook, Illinois. Phone: 312/291-1616.

2935. Belleme, John. 1985. Shedding light on the miso story. *MacroMuse*. Autumn. p. 29-31.

• **Summary:** A discussion of what factors influence the taste, medicinal qualities, and nutritional value of different types of miso. By far the most important influences on all three are the manufacturing methods and the quality of the ingredients. Basically there are three methods of making miso. In descending order of quality they are: traditionally made, naturally aged, and temperature controlled. The author estimates that less than 1% of Japanese miso is traditionally made—that is, using handmade koji in a unheated koji room. "In this uniquely constructed room, heat and humidity naturally generated by the fermenting grain are carefully monitored for 48 hours until the mature koji, covered with a fluffy, white, glistening mycelium, is sweet and loaded with powerful enzymes." Making koji in

this way is a labor-intensive process requiring much skill and stamina.

The second type of miso, “naturally aged,” is actually commercial miso that was especially developed for the American natural foods market. The process is usually automated and every effort is made to keep out wild microorganisms. The soybeans are rapidly cooked and cooled, while the koji is made automatically in large, stainless steel rooms. Hand labor is kept to a minimum to reduce costs and the need for experienced workers. The finished miso has a “uniform taste, color, and texture and is usually sold pasteurized in one-pound plastic bags which need no refrigeration.”

The lowest quality miso, temperature controlled commercial miso, accounts for 99% of the miso made in Japan.

With few exceptions, miso can be divided into two large groups based on color and taste. Sweet miso is usually light in color, while salty miso is usually dark in color. “When considering miso quality, some macrobiotic teachers insist on using miso aged at least two years. Miso aged less than this is considered ‘unnatural.’” But the author believes that people who say this are unknowingly comparing temperature controlled to naturally aged miso, for “there is no evidence, either traditional or scientific, that sweet, light miso is inferior to dark, salty miso. In fact, miso that is aged too long, regardless of the type, rapidly deteriorates in taste, color, aroma, enzymatic activity, and nutritional value.”

“My point is simple: what actually determines the color, taste, and overall quality of miso is not aging but proper aging. And what determines proper aging is recipe and climate.” Each type of miso has its own use. “While dark, long-aged miso is excellent for hearty winter cooking, sweet light miso is great in summer soups, dips, sauces, and salad dressings.” In short: “When choosing miso, look for organic, traditionally made, unpasteurized miso.”

Photos show: (1) Jan Belleme (with baby Justin on her back) and Bob Zullo inoculate steamed barley with *Aspergillus* mold to make barley koji at the American Miso Co. (2) Jan checks the finished barley koji in wooden trays. (3) Bob Zullo prepares to empty 8,000 lb of two-year barley miso from a large wooden vat.

“John Belleme lives with his wife Jan in Rutherfordton, North Carolina, where they have been involved with the American Miso Company.” He is president of Just In Foods, producer of miso products. Address: Rutherfordton, North Carolina.

2936. **Product Name:** Tofu Tortellini.

Manufacturer’s Name: Ithaca Soy.

Manufacturer’s Address: 403 N. Plain St., Ithaca, NY 14850.

Date of Introduction: 1985. October.

Ingredients: Dough mixture: Durum flour, semolina, water, tomatoes (red pasta), spinach (green pasta). Filling: Organically grown soybeans, water, rice miso, spices, tofu made with calcium sulfate.

Wt/Vol., Packaging, Price: 16 oz in clear plastic wrapper with a stick-on paper label.

How Stored: Refrigerated or frozen.

New Product–Documentation: Label. 1985. “Great hot with sauce and in soups! Delightful cold in marinated salads.” Product Alert. 1985. Oct. New Product News. 1988. Dec. 9. “A 4 oz. package is sold nationally in health food stores.” Soya Newsletter. 1988. Nov/Dec. Gives company name as Ithaca Soyfoods Co. Pasta is tri-colored: tomatoes color red and spinach colors green. Now sold frozen. Contact: David Scovronick.

2937. **Product Name:** Buckwheat Ramen with Miso Soup. **Manufacturer’s Name:** Soken Trading, Inc. (Importer). Made in Japan.

Manufacturer’s Address: 591 Redwood Highway, Suite 2125, Mill Valley, CA 94941.

Date of Introduction: 1985. October.

New Product–Documentation: Spot in NASFT Showcase. 1985. Oct. “Soken Trading, Inc.” Announces new packaging for its ever popular Buckwheat Ramen with Miso Soup. A photo shows the new package.

2938. Jenkins, Nancy Harmon. 1985. In pursuit of the perfect ingredient: Food shops. *New York Times*. Nov. 3. p. SMA8.

• **Summary:** When exploring New York’s ethnic food markets one is bound to find surprises and new, delicious foods and ingredients. The section titled “Chinese” notes that Kam Man Food (200 Canal St., in Chinatown—south central Manhattan) “offers a choice of Chinese teas, preserved vegetables and bottled condiments including red, black, and yellow bean pastes, fish and shrimp sauce and hoi sin [hoisin] sauce.

Note: Red bean paste is typically made from azuki beans. Black bean paste and yellow bean paste are typically made from soybeans,

2939. McMath, R.M. 1985. Interest in a 1,000 year old health and flavor secret [miso] growing in America. *Product Alert* (Naples, Wyoming). Nov. 11. (Editorial). Address: Chairman of Product Alert, Wyoming.

2940. King, Kathryn H. 1985. Company’s product works for flavor. *Triangle Business* (North Carolina). Nov. 11-17.

• **Summary:** About John Troy and American Natural Foods. When John and his wife was producing natural candy bars, he learned that a miso plant was being built in Rutherfordton, North Carolina. He went to visit, and based on that visit he gathered together a group of investors to

create American Natural Foods 18 months ago. The 30 shareholders collected \$500,000 to start the company. Some of them also take an active part in running the company.

2941. **Product Name:** Premier Japan All Natural Miso [Mugi, or Rice].

Manufacturer's Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer's Address: New Jersey.

Date of Introduction: 1985. November.

New Product–Documentation: Total Health. 1985. Nov. p. 40.

2942. **Product Name:** Grainwave Miso Mochi.

Manufacturer's Name: Grainwave.

Manufacturer's Address: 6726 West Coast Rd., Sooke, BC, V0S 1N0, Canada. Phone: 604-642-4424.

Date of Introduction: 1985. November.

Ingredients: Sweet brown rice, water, miso (soybeans, salt), sesame seeds.

Wt/Vol., Packaging, Price: 250 gm.

How Stored: Refrigerated.

New Product–Documentation: Label. 1985. 4 inches square. Self adhesive. Red and yellow on white. "Ready to eat in 5 minutes. Whole grain. Cut with sharp knife and broil, fry, or bake until golden."

2943. Jackson, Vicki. 1985. Squirrels vegetarian cook book no. 2. Oneness Life Press, Elizabeth St., Brisbane, Queensland, Australia. 156 p. Illust. by Vicki Jackson. Index. Nov. 29 cm.

• **Summary:** This hand-lettered cookbook was written for Squirrels Restaurant, 190 Melbourne St., West End (Brisbane) 4141, which has been open for more than 3 years. The first vegetarian cookbook from this restaurant was published in Nov. 1983.

Soy-related recipes include: Miso & green vegetable soup (p. 8). Tempeh & beanshoot (p. 42). Lemongrass and tofu curry (p. 87). Tempeh kebabs (p. 94). Tempeh burgundy (p. 95). Tempeh & coconut sauce (p. 96). About tofu (p. 97-98). Tofu & Spinach pie (p. 98). Tofu teriyaki & fried rice (p. 99). Tofu à la king (p. 100). Tofu stroganoff (p. 101). Tofu chow mein (p. 102). Tofu nuggets in chick pea batter (p. 103). Curried tofu loaf (p. 104). Pages 149-50 describe tamari, tempeh, tofu, and miso. Address: Brisbane, Queensland, Australia.

2944. **Product Name:** Soup 'n Savor, Miso-Brown Rice Soup Mix [Hearty Miso-Vegetable, Miso-Onion, or Pilaf Dinner (Quick Brown Rice with Miso and Vegetables)].

Manufacturer's Name: Lundberg Family Farms.

Manufacturer's Address: P.O. Box 369, Richvale, CA 95974.

Date of Introduction: 1985. November.

Ingredients: Miso-Onion: Steamed, flaked long grain brown rice, dehydrated onions, miso (soybeans, salt, water), soy sauce (soybeans, wheat, salt, water), garlic powder.

Wt/Vol., Packaging, Price: Two foil packets in paperboard box.

How Stored: Shelf stable.

New Product–Documentation: Labels. 1985, undated. 1 box each. 3.5 by 5 inches, color. "Quick! Twin pack! Cooks in 5 minutes. All natural ingredients." Spot in Food Distributors Magazine. 1985. Nov. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Ad in Natural Foods Merchandiser. 1987. Dec. p. 25. "Soup'n Savor (Miso-Onion, and Miso Vegetable)."

2945. **Product Name:** Nasoya Creamy Tofu Dressing [Sesame Garlic, Fine Herbs, or Italian].

Manufacturer's Name: Nasoya Foods, Inc.

Manufacturer's Address: 23 Jytek Park, (P.O. Box 841), Leominster, MA 01453.

Date of Introduction: 1985. November.

Ingredients: Sesame Garlic: well water, Nasoya tofu, coldpressed sunflower oil, wood-aged apple cider vinegar, tahini (sesame paste), rice syrup, organic miso, coldpressed sesame oil, dehydrated garlic, seasalt, natural vegetable gum, dehydrated parsley. Fine Herb: Prepared mustard (vinegar, water, mustard salt, turmeric, spices, natural flavor), herbs (basil, rosemary, marjoram).

Wt/Vol., Packaging, Price: 12 oz glass jar.

How Stored: Shelf stable.

Nutrition: Per 14 gm.: Calories 40, protein 1 gm, carbohydrate 1 gm, fat 3 gm.

New Product–Documentation: Labels. 1985. 2.75 by 3.25 inch oval. Green, brown, red or orange on white. Vegetables on table illustration. "Non dairy. Nothing artificial." Ad in Vegetarian Times, Aug. 1986, inside rear cover.

"Introducing Nasoya Creamy Tofu Dressings and Nasoyanise." Ad in East West. 1986. Nov. p. 83, and in Vegetarian Times. 1986. Nov. p. 33. "Introducing... 2 New Ways to Enjoy the Goodness of Tofu!" Contains 25% tofu. Letter from Sjon Welters. 1989. July 24. The product pull date is code dated, month of production plus 12 months. The original ingredients have changed. A dill flavor was introduced in about Oct. 1986.

Letter from John Paino of Nasoya. 1990. Sept. 25. The company offices were moved from Mechanic St. Ext. to 23 Jytek Park in Dec. 1984; the plant was moved in March 1985.

2946. Nihei, Takao. 1985. Zoku: Hawai ni okeru Nihon-shu no rekishi. Hawai kanyaku imin hyaku-nen ni yosete [A history of Japanese sake in Hawaii. On the hundredth anniversary of Japanese immigration to Hawaii]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 80(11):786-89. Nov.; 80(12):838-842. Dec. [33 ref. Jap]

• **Summary:** In 1868, the first year of the Meiji Period, the first 153 Japanese immigrants arrived in Hawaii on board the three-masted sailing ship Scioto (Saioto-go). They brought with them miso and shoyu. During the 1880s, because of the shortage of laborers to harvest sugar cane, the governments of Japan and Hawaii signed a contract allowing Japanese to immigrate to Hawaii. The first boatload of 944 Japanese arrived on 8 Feb. 1885. These two groups and their descendants introduced sake and soyfoods to Hawaiian culture. A photo shows the “Honolulu Japanese Sake Brewing Co.” in 1908.

Note: This document contains the earliest date seen for soybean products (miso and shoyu) in Hawaii (1868); soybeans as such had not yet been reported by that date. Address: Honolulu Shuzo Seihsu Gaisha.

2947. Ozora, Colleen. 1985. Of Granum and macrobiotics: A visit with Blake Rankin. *Macrobiotics Today (Oroville, California)*. Nov. p. 3-7.

• **Summary:** In 1969, while a student at UCLA, Blake Rankin came in contact with Erewhon—Los Angeles. After graduation from UCLA he and several friends set up a small health food store in Victoria, BC, Canada. Then he spent 3 months in Boston living in a Kushi study house and working in an Erewhon warehouse. Back in Seattle, he worked at Spiral Foods, an offshoot of Chico-San. Shortly after that he and George Gearhart, the proprietor, closed the store and in 1972 opened a wholesale company, Janus Foods. It was successful. [Note: Miso and shoyu, imported from Japan, were among the company’s best-selling products.] After 2 years Rankin left and went to Japan for 6 months, where he traveled with Mitoku and Muso. Mr. Kazama, a friend of Aveline Kushi’s brother, had not been in the food business before starting Mitoku. Then he went to Nepal and India on a spiritual search. In late 1973 he returned to Seattle and worked for Janus. Then he returned to Japan where he worked for Mitoku and studied calligraphy. In Japan he met his future wife, Yoko. Returning to Seattle, Rankin started Granum in 1981 as a distributor and importer for Mitoku products from Japan. Now the import company has a small retail store and a 10,000 square foot warehouse. Expected 1985 gross is more than \$500,000.

This article contains numerous photos of Blake and Yoko Rankin, and their two children. Address: GOMF, Box 426, Oroville, California 95965.

2948. Saio, Kyoko; Suzuki, H.; Kobayashi, T.; Namikawa, M. 1985. Microstructural changes in winged bean and soybean during fermentation of miso. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 47. p. 272-79. Nov. [11 ref. Eng; jap]

• **Summary:** Winged-bean miso was prepared by substituting winged beans for soybeans. Microstructural changes in both misos at various stages in the manufacturing process were studied using both a light microscope and a transmission electron microscope. Transmission electron microscope (TEM) micrographs soy winged bean miso and soybean miso at high magnification.

Reprinted from *Food Microstructure* (3):65-71 (1984). Address: 1-2. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3-4. Nagano Miso Co., Ltd., 29-9-3 Tenjin, Ueda, Nagano.

2949. Taira, Harue; Tanaka, Hiromi; Horie, Masaki; Mikoshiba, Kimito. 1985. [Quality of soybean seeds grown in Japan. IX. Varietal differences in seed weight, protein, oil, carbohydrate, ash, potassium, phosphorus, magnesium, and calcium contents of seeds grown in Nagano Chushin Agricultural Experiment Station]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 47. p. 57-91. March. [30 ref. Jap; eng] Address: 1-2. National Food Research Inst. (Shokuhin Sogo Kenkyujo), Ministry of Agriculture, Forestry and Fisheries, Kannon-dai 2-1-2, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan; 3. National Inst. of Agro-Environmental Science, Yatabe, Ibaraki; 4. Nagano Agricultural Research Center, Suzaka, Nagano.

2950. Geslewitz, Gina; Wittenberg, Margaret. 1985. Soyfoods: The age of soy literacy. *Health Foods Business* 31(12):33-34, 36, 38-44, 46-47. Dec. [15 ref]

• **Summary:** Contains a market study largely pirated from Shurtleff & Aoyagi’s *Soyfoods Industry and Market*. Address: New York.

2951. *Shelby Report of the Southeast (Gainesville, Georgia)*. 1985. What’s new. 19(12): Dec.

• **Summary:** In Jan. 1984 John Troy teamed up with a group of investors to start American Natural Foods, based in Chapel Hill, North Carolina. Their products contain miso, a flavor enhancer made from soybeans and grains. For more information call (919) 929-1240.

2952. Edward & Sons Trading Co. 1985. What is miso? (Brochure). Saluda, North Carolina. 4 p. 28 cm.

• **Summary:** The inside two pages of this brochure each bear a full-page color ad. Three sections on the cover are titled: The history of miso. The benefits of miso. Miso today. On the back are four recipes using Edward & Sons miso products and other natural food products sold by the company. Address: Route 1, Box 153, Saluda, North Carolina 28773.

2953. **Product Name:** Miso [Chick Peaso (Chick Pea Miso), Yellow (Shinshu) Miso, Mellow Ebony Miso (with Black Soybeans), or Koji Miso].

Manufacturer's Name: Institute of Fermented Foods.

Manufacturer's Address: Rutherfordton, NC 28139.

Date of Introduction: 1985.

Ingredients: Yellow and Koji: Rice koji, soybeans, sea salt. Chick Pea: Rice koji, chick peas (garbanzo beans—no soybeans), barley, sea salt. Ebony: Rice koji, black soybeans, sea salt.

New Product–Documentation: Labels from Institute of Fermented Foods. 1985. 3.25 by 4 inches. Self adhesive. Two color labels for each miso type: Yellow and black, gold and black, red and black, orange and black, grey and black on white. “Non-pasteurized. No preservatives.” Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center.

Talk with John Belleme. 1985. April 2. John introduced Chick Peaso in May 1984. It is a mellow miso made with chick-peas instead of soybeans; it contains no soy.

Talk with John Belleme of North Carolina. 1996. Aug. 27. John made Chick Peaso, but he got the idea from Muramoto Sensei (probably via Lino Stanchich in about 1982-83), who made and sold small batches of chick pea miso at his Asunaro Eastern Studies Institute, high on Mt. Veeder, in Glen Ellen, California. Muramoto's product, though sold mostly to his students and friends, was probably America's first (perhaps the world's first) commercial chick pea miso. However John thinks that the miso may have also contained some soybeans—although he has no idea what proportion.

Talk with John Belleme. 1999. Nov. 6. The Institute of Fermented Foods was an entity that John created out of the blue (it was never registered or official) as part of his ongoing struggle with Barry Evans.

Note: This is the earliest known commercial miso product made without soybeans; chick peas were used instead.

2954. **Product Name:** Miso Master Miso-Tofu Dips.

Manufacturer's Name: Just In Foods, Inc.

Manufacturer's Address: Box 541, Route 3, Rutherfordton, NC 28139.

Date of Introduction: 1985.

New Product–Documentation: Leaflet. Back to back, 8½ by 11 inch, 3 color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Miso Master. You've got to try these two extraordinary new Miso-Tofu Dips from Miso Master.

2955. **Product Name:** Miso Master Gold Label Spaghetti Sauce.

Manufacturer's Name: Just In Foods, Inc.

Manufacturer's Address: Box 541, Route 3, Rutherfordton, NC 28139.

Date of Introduction: 1985.

New Product–Documentation: Leaflet. Back to back, 8½ by 11 inch, 3 color. Reprinted in Soyfoods Marketing. Lafayette, CA: Soyfoods Center. Introducing Miso Master. Gold Label Spaghetti Sauce. Its the perfect marriage of tomatoes and miso.

2956. **Product Name:** Onozaki Miso [Red Miso].

Manufacturer's Name: Just In Foods, Inc.

Manufacturer's Address: 92 MacIntosh Rd., Asheville, North Carolina 28806.

Date of Introduction: 1985.

Ingredients: Rice koji, soybeans, sea salt, well water.

Wt/Vol., Packaging, Price: 1 lb plastic bag with pressure-release valve.

How Stored: Refrigerated.

New Product–Documentation: This miso is imported in bulk from Onozaki Kojiten in Yaita, Japan. It is packaged by American Miso Co., Rutherfordton, North Carolina. Label sent by John Belleme. 1985. 3 by 3.5 inches. Gold and red on black—very stylish. Pressure sensitive on plastic bag with pressure release valve at top. Front panel text: “Handmade miso. Do not block valve. Non-pasteurized. No preservatives.” Back panel text (black letters on white): “Onozaki miso is much more than just a great tasting miso. Its deep, rich flavor and subtle character is a vivid reminder of a vanishing Japanese tradition. And with good reason.

“For like Japan's ancient feudal miso masters, Takamichi Onozaki begins by personally growing, and carefully processing his own organic rice.

“Then, the Onozakis perform each time-proven step of old world miso-making in accordance with their own long family traditions. Finally, long aging in huge seasoned wood vats guarantees the superlative quality of their natural miso.

“Use Mr. Onozaki's wonderfully delicious miso to enhance the flavor and nutrition of soups, spreads, dressings and sauces.

“For more about the unique family and their work, see East West Journal, ‘The Miso-Master's Apprentice,’ April, 1981.”

2957. Kim, S.H.; Lee, H.J. 1985. [Characteristics of bitter peptides from a cheese and a soybean paste]. *Hanguk Sikp'um Kwahakhoe Chi (Korean J. of Food Science and Technology)* 17(4):276-82. [27 ref. Kor; eng]*

• **Summary:** Bitter peptides were isolated from Mozzarella cheese and a soybean paste. Key amino acids were leucine, phenylalanine, proline, and valine. Address: Dep. of Food Science & Technology, Seoul National Univ., Suwon, South Korea.

2958. **Product Name:** Sweet & Sour Tempeh Lumpia (Vegetarian Spring Roll).

Manufacturer's Name: Light Wave Wholefood.

Manufacturer's Address: 21 Gilbert St., Newton, Adeliade, South Australia.

Date of Introduction: 1985.

Ingredients: Pan-steamed tempeh, onions, lotus root, cabbage, soya and/or mung sprouts, carrot, tamari, miso, tamarind, maple syrup.

New Product–Documentation: Label. 1985, undated. 2 by 5.5 inches. Dark blue on light blue. “No eggs, synthetic additives or any animals and not deep fried.”

2959. Michioka, Osamu. 1985. [Experimental and epidemiologic studies on the mutagen-depressive substances in vegetables]. *Akita Boygaku? ZZZ (Akita Medical Journal)* 11:237-66. [Jap]

• **Summary:** A mutagen-depressing substance was found in 12 kinds of vegetables. The activity of the substance was somewhat reduced by heat. In order to elucidate the mechanism, the substance was added at every stage of mutagenicity in the Ames test using Salmonella TA 100 as the organism, benzo(a)pyrene (B(a)P) as the promutagen, and 4-nitro-quinoline-oxide (4NQO), as the ultimate mutagen. Mutagenic inhibition was found to occur at the stage of mutagenic activation of the promutagen. Additional experiments showed that the active substance accelerated the formation of phenolic compounds and inhibited the formation of diols, thus decreasing the non-metabolites of B(a)P.

Note: This early study, although it does not mention miso, started the search for mutagens in miso and other Japanese foods. Address: Dep. of Hygiene, Akita University School of Medicine [Japan] (Director: Prof. S. Kamiyama).

2960. Noji, R.; Shindo, Y. 1985. Study on antioxidative activity of miso. I. Application of miso for sardine processing. *Report of Fukuoka Women's Junior College (Fukuoka, Japan)* 21:295-301. *

• **Summary:** Miso is shown to have antioxidative activity. When sardines are soaked in brine, the levels of peroxide and carbonyl compounds are much higher than when they are soaked in miso.

2961. **Product Name:** Golden Millet Miso.

Manufacturer's Name: South River Miso Co. Inc.

Manufacturer's Address: South River Farm, Conway, MA 01341. Phone: (413) 369-4057.

Date of Introduction: 1985.

Ingredients: Deep well water, organically grown millet and soybeans, Muramoto's sea salt, koji culture.

How Stored: Refrigerated.

New Product–Documentation: South River Miso Co. catalog. 1991. Letter and Label sent by Christian Elwell. 1992. May 28. This miso was introduced in 1985. Label. Black on white. 3.5 by 2.5 inches. “Unpasteurized.”

2962. Tajima, K.; Tominaga, S. 1985. Dietary habits and gastro-intestinal cancers: A comparative case-control study of stomach and large intestinal cancers in Nagoya, Japan. *Japanese J. of Cancer Research (Gann)* 76:705-16. *

• **Summary:** In this case-control study, the authors noted an increased in rectal cancer risk, but not in colon cancer risk in people consuming miso soup (Relative Risk = 2.05, $p < 0.05$). No association was found between tofu consumption and either colon or rectal cancer.

Concerning stomach cancer: Consumption of miso soup or miso was not significantly associated with increased risk of stomach cancer.

2963. **Product Name:** Westbrae Natural Teriyaki Sauce.

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.

Date of Introduction: 1985.

Ingredients: Johsen Shoyu and double-brewed shoyu (water, soybeans, wheat, salt), Sendai red miso (soybeans, rice, water, salt), rice vinegar, apple juice, tomato puree, Mirin (water, rice), rice malt (rice, malted barley), onions, black pepper, garlic, ginger, allspice, red pepper, natural gum stabilizers (tragacanth, xanthan).

Wt/Vol., Packaging, Price: 12.7 fluid oz (375 ml).

How Stored: Shelf stable; refrigerate after opening.

New Product–Documentation: Label. 1986, undated. 5 by 3.5 inches. Paper. Orange, white, blue, green, black. Mt. Fuji logo. “Westbrae's Teriyaki Sauce is thick, so it can be used American-style like barbecue sauce or catsup.”

2964. Andoh, Elizabeth. 1985. An American taste of Japan. New York, NY: William Morrow and Co. 334 p. + [8] pages of color plates. Illust. by Susan Blubaugh. Color photos by Aaron Rezny. Index. 25 cm.

• **Summary:** This is a beautiful, remarkable book by a perfectionist with an intensely curious mind, a woman who really understands (is indeed an authority on) Japanese foods, cookery, language and culture. The illustration and photos are likewise exquisite.

Contents: A note on the romanization and pronunciation of Japanese. Acknowledgments. An introduction to cross-cultural cooking (including a brief autobiography). At the market, in the kitchen (“A guide to buying and storing Japanese foodstuffs and equipment, plus an explanation of certain Japanese cooking terms and techniques”). The recipes: Soups, appetizers, sushi (in the lingo of the sushi bar, rice is known as *shari* and soy sauce as *murasaki*—literally “purple”), main dishes, side dishes, desserts. Setting the cross-cultural table. Photography credits. Mail-order and shopping guide.

Soyfoods [and sea vegetables] are so abundantly represented that we will only refer the reader to the glossary

plus (“At the market, in the kitchen,” p. 19-44) and index. In the glossary: Abura agé (fried bean curd). Ao nori (sea herb flakes). Kanten (agar). Kombu (kelp). Miso (fermented bean paste). Miso shiru (also called *omi-otsuke* [a woman’s word]). Neri miso (glossy bean-paste sauce). Nori (laver). Soy sauce (The subtle, full-bodied aroma of soy sauce “does fade after several months. Keep opened bottles tightly capped on a dark shelf in your kitchen”). Tofu (bean curd; kinugoshi, momen, yaki-dofu). Usukuchi shoyu. Yaki-zushi nori.

An American who traveled to Japan in 1966 to study Japanese, Andoh married (in 1969) into the Japanese family she visited there. She enrolled in a class at the Yanagihara School of Classical Japanese Cooking, where she studied for six years.

Each recipe has two titles: (1) A long, descriptive title in English with large, bold typeface and title-style capitalization. (2) Under a hairline, the actual Japanese title, in regular capital letters. The modern Hepburn system of romanization is used throughout the book, so that diacritical marks are used consistently with the appropriate words. Page 52: “Light Bean Soup with Slender White Mushrooms and Bean Curd: Enokidaké no Miso Shiru.” Page 183: “Bean Curd Tempura with Spicy Scallion Sauce: Agé Dashi-Dôfu.”

Note: Use of the terms “bean curd” and “bean sauce” (instead of the now more widely used “tofu” and “miso”) in recipe titles, text, and index makes these parts of the book seem slightly imperfect. Address: Japan.

2965. Aubert, Claude. 1985. Les aliments fermentés traditionnels: Une richesse méconnue [Traditional fermented foods: An unrecognized richness]. Paris: Terre Vivante. 261 p. Index. 21 cm. Series: Collection les Vrais Aliments d’Aujourd’hui et de Demain. [173* ref. Fre]

• **Summary:** The author gives good, brief introductions to the fermented soyfoods tempeh, miso, miso pickles, shoyu, tamari, sufu, natto, soy idli, and hamanatto. Related foods that are also discussed include koji, amazake (amasaké), and ontjom. See especially chapter VII: The fermentation of legumes (p. 73-78). Part IV (p. 153-216) is a dictionary of fermented foods and beverages, in which they are listed alphabetically; basic information and references for each are given. Instructions are given for preparing many of these foods on a home scale, and for some foods (such as tempeh) even recipes are given (fried tempeh, tempeh goreng). The book contains many beautiful illustrations and an excellent bibliography. The author acknowledges his extensive use of the material in *Handbook of Indigenous Fermented Foods* (1983) edited by K.H. Steinkraus. Address: Ingénieur agronome de formation, France.

2966. Bennett, Joan W. 1985. Taxonomy of fungi and biology of the aspergilli. In: Arnold D. Demain and Nadine

A. Solomon, eds. 1985. *Biology of Industrial Microorganisms*. Menlo Park, California: Benjamin/Cummings Publishing Co. xviii + 573 p. See p. 359-406. Chap. 12. 25 cm. [232* ref]

• **Summary:** This article is so clearly written that even a beginner can understand it. Contents: Introduction. Some systematics for the nonmycologist: What is systematics? (classification, nomenclature, identification), what is a fungus? (general overview). The genus *Aspergillus*: Morphology, sexual stages (teleomorphs). Genetics: Introduction to *A. nidulans*, the parasexual cycle. Economic aspects: Secondary metabolites, *Aspergillus* metabolites used in food processing, Oriental food fermentations (soy sauce, sake, miso, koji). Conclusion.

Table 12.1 (p. 360) lists “Historical landmarks in mycology and biotechnology involving the genus *Aspergillus*.” 1729–P.A. Micheli: Publication of *Nova plantarum genera*, name *Aspergillus* given to group of molds with characteristic spore head. 1827–J. Schilling: First continuous observation of the growth of a fungus from spore to spore, *A. glaucus*. 1854–A. deBary: First association of a perfect state (*Eurotium herbariorum*) and an imperfect state (*A. glaucus*). 1867–P. Van Tiegham: First to establish importance of Aspergilli in biochemical field with identification of *A. niger* in gallic acid fermentation. 1869–J. Raulin: First defined medium for a microorganism *A. niger*. 1894–J. Takamine: First patent for a commercial enzyme form fungus, “Takadiastase” from *A. flavus-oryzae*. 1917–J.N. Currie: Commercial citric acid production from *A. niger* demonstrated as feasible. 1952–J.A. Roper: Parasexual cycle discovered in *A. nidulans*. 1961–Sergeant et al.: Identification of *A. flavus* as mold association with Turkey-X disease; “mycotoxin revolution” begins. The name “aflatoxin” was given in 1962. 1983–Ballance et al.: Transformation system described in *A. nidulans*, the second transformation system elucidated for a mold. Table 12.3 (p. 378-79) is a “Glossary of morphological terms encountered in descriptions of the Aspergilli.”

Table 12.6 (p. 392) lists “*Aspergillus*-derived metabolites used in food processing” (after Beuchat 1978, *Food & Beverage Mycology*, see p. 368-96). These fall into three broad categories: Acids, enzymes, and miscellaneous. Acids: Citric acid, from *A. niger*, is used in soft drinks, dairy products, jams, jellies, candies, frozen foods, fats and canned goods. Gluconic acid, from *A. niger*, is used in baking powder, bread mixes, desserts, bottle-washing formulations. Itaconic acid, from *A. itaconicus* or *A. terreus* is used in shortenings, or resin coatings in contact with food. Malic acid, from various *Aspergillus* species is used in beverages, jam, jellies, syrups, candy, and sour dough. Oxalic, from *A. niger*, is used in hydrolysis of starch to glucose. Tartaric acid, from *A. niger* or *A. griseus* is used in carbonated beverages, desserts, jellies.

Enzymes: α -amylase, from *A. oryzae* or *A. niger* is used in corn syrup, dextrose, baking, food dextrins, chocolate syrups. Glucoamylase, from *A. awamori* or *A. niger* is used in dextrose, dextrose syrup, baking. Glucose oxidase or catalase, from *A. niger* is used in powdered egg products, brewing, wines, mayonnaise. Lactase, from *A. niger* is used in dairy products. Naringinase, from *A. niger* is used in debittering grapefruit juice. Pectinase, from *A. niger* is used in clarifying fruit juice and wine. Protease, from *A. oryzae* is used in tenderizing meat, soy sauce, brewing, baking.

Miscellaneous: Mannitol, from *A. candidus* is used as a bulking agent, or humectant.

Illustrations show: (1) "Schematic representation of an *Aspergillus* conidial apparatus" showing metula (primary sterigmata), conidia, vesicule, phialide (secondary sterigmata), conidiophore, and foot cell (p. 377). Address: Prof., Dep. of Biology, Biology, Tulane Univ., New Orleans, Louisiana 70118.

2967. Botton, B.; Breton, A.; Fevre, M.; Guy, P.; Larpent, J.P.; Veau, P. 1985. *Moisissures utiles et nuisibles: Importance industrielle* [Industrial importance of useful and harmful molds]. Paris: Coll. Collection Biotechnologies. 364 p. [150 ref. Fre]*

• **Summary:** Contains a discussion of popular fermented soyfoods, including soy sauce, tempeh, and miso.

2968. Bradford, Peter; Bradford, Montse. 1985. *Cooking with sea vegetables: A collection of naturally delicious dishes using to the full the bountiful harvest of the oceans*. Wellingborough & New York: Thorsons Publishing Group. 144 p. Illust. by Sue Reid. Index. 22 cm. [8 ref]

• **Summary:** The Bradfords have spent considerable time studying food in Japan and are especially well qualified to present this vegan, macrobiotic cookbook. It contains recipes using tofu, tempeh, miso, shoyu (soy sauce), and seitan. Address: UK.

2969. Brown, Edward Espe. 1985. *The Tassajara recipe book: Favorites of the guest season*. Boston & London: Shambhala. xviii + 225 p. Foreword by Alice Waters of Chez Panice restaurant in Berkeley. Index. 23 cm.

• **Summary:** In the tradition of the bestselling *Tassajara Bread Book* and *Tassajara Cooking*, Ed Brown has compiled a new collection of gourmet vegetarian recipes from the kitchens of the well-known Tassajara Zen Mountain Center near Carmel, California. This cookbook contains 12 tofu recipes (mostly entrees; all use firm rather than soft tofu, which has been drained and pressed), 2 soybean recipes, and 1 one miso recipe: Eggs, scrambled tofu, and our latest granola (p. 23). Scrambled tofu (p. 30). Soups & stocks (p. 49). Soy vegetable soup (p. 65). Oriental stock (p. 67; includes tamari. May include soybean sprouts). Tartar sauce with fresh basil (p. 96; for Tofu cutlets).

Sesame soybeans (p. 111). Tofu cabbage grill (p. 112). Tofu entrees (p. 139; introduction to tofu and its preparation). Tofu marinade (p. 141). Grilled marinated tofu (p. 142-43). Tofu cutlets (p. 144-45). Tofu teriyaki (p. 146-47). Eleanor's tofu gumbo (p. 148-49). Tofu miso stew (p. 150-52). Alaskan tofu (p. 153-54). Mushroom tofu stroganoff (p. 155-56).

2970. Diamond, Harvey; Diamond, Marilyn. 1985. *Fit for life*. New York, NY: Warner Books. xxvii + 316 p. Index. 17 cm. Paperback edition published Feb. 1987. 316 p. [204* ref]

• **Summary:** Contents: Part I—The principles. Introduction. 1. Diets don't work. 2. Natural hygiene. 3. The natural body cycles. 4. The theory of metabolic imbalance. 5. The principle of high-water-content food. 6. The principle of proper food combining. 7. The principle of correct fruit consumption. 8. The theory of detoxification. 9. Protein. 10. Dairy products. 11. Exercise. 12. You are what you think you are. 13. The most frequently asked questions. Part II—The program. Introduction. 1. Breakfast. 2. Fresh juices. 3. The energy ladder. 4. The *Fit for Life* shopping list. 5. The main-course salad. 6. Life-style guidelines. A four-week example of the fitness life-style. In conclusion. Bibliography.

The only references to soy or soyfoods in the index are: Miso (p. 175; Cold Mountain, Eden, Westbrae), Soy sauce and Tamari sauce (p. 176; low-sodium—Eden, Soken, Westbrae). The text mentions Tofu Sauce (Westbrae). The authors (who live in semi-tropical Los Angeles) advocate high consumption of fruit, and are apparently unaware of tofu and tempeh. The book is near vegetarian but includes the use of fish, seafood, chicken, and turkey (p. 173-74, 237). The paperback edition announces: "America's all-time #1 health and diet book! Over 3 million copies in print!" Address: Pasadena, California.

2971. Duke, James A.; Ayensu, Edward E. 1985. *Medicinal plants of China*. 2 vols. Algonac, Michigan: Reference Publications, Inc. 705 p. Introduction by Edward S. Ayensu. 24 cm. Medicinal index (by disease). Common names index. Index to species. No. 4 in the series "Medicinal Plants of the World." [234* ref]

• **Summary:** The plants are grouped by family. Two families are tied for containing the largest number of medicinal species: Leguminosae (Fabaceae) and Compositae (Asteraceae) each have 354 species. The soybean (*Glycine max*) is discussed on p. 326-27. "Uses: Leaf: Bruised leaves applied to snakebite. Flower: Used in blindness and opacity of the cornea. Stem: Ashes of stalks applied to granular hemorrhoids or fungus growths on the anus. Fruit: Green hulls chewed to a pulp and applied to corneal and smallpox ulcers. Seed: Chinese herbals suggest that soybean is specific for proper functioning of bowels, heart, kidney,

liver and stomach; antidote to *Aconitum* and *Croton*. Root: Decoction astringent. Plant: Bean sprouts ('Ta tou huang chuen') are considered constructive, laxative, resolvent, to help in alopecia, ascites, and rheumatism.

"A salty relish 'Hsien-shih' [salted soy nuggets] is made by soaking the beans in water for three days, spreading them to ferment, with salt, ginger, peppers, orange peel, thyme, fennel, and apricot kernels, sealed in an earthen jar, and placed in the sun for one month. This relish is said to be used for ague, bone diseases, chills, colds, cold feet, colic, dogbite, difficulty in breathing, dysentery, fever, headache, marasmus, melancholy, nausea, poisons, and ulcer. Bean ferment (tou huang) is used for rheumatism, especially of the knees. It is chewed to a paste and applied to eczema. Bean curd (tou fu) is prescribed in drunkenness, dysentery, ophthalmia, or swellings. Soy sauce ('Chiang,' 'Chiang yu,' 'Shih yu') is applied to burns, eczema, leprosy, scalds, and sores, and is considered useful in preventing abortion and the hematuria of pregnancy.

"Chemistry: Sitosterol, an anticancer active, replaces diosgenin in some hypotensive drugs. Stigmasterol used to be employed for stiffness. Lecithin derived from soybean may function as a vasodepressor and a lipotropic agent. Soybean oil, with unsaturated fatty acid, is recommended for hypercholesteremia."

The adzuki bean (*Phaseolus vulgaris*) is discussed on p. 336-37, and kudzu (*Pueraria lobata*) on p. 339-40. Address: 1. USDA Germplasm Services Lab., ARS B-001 R-133, Beltsville, Maryland 20705.

2972. Hirano, Masaaki. 1985. *Shôyu miso no bunkashi* [A cultural history of shoyu and miso]. Tokyo: Tokyo Shobosha. 346 p. Illust. 22 cm. Series: *Shoku no fuzoku minzoku meicho shusei*, No. 7. [20+ ref. Jap]*

• **Summary:** A history of miso, miso cookery, shoyu, and shoyu cookery. "Tsuketari shoyu miso bunken shiryô shusei" (p. 297-346). Masaaki Hirano was born in 1931. Address: Japan.

2973. Holt, Helen. 1985. *Eten zonder vlees: dat kan!* [Eat without meat: It's possible!]. Den Haag, Netherlands: De Nederlandse Vegetariërsbond. 38 p. Illust. Index. 15 x 21 cm. [9 ref. Dut]

• **Summary:** A vegetarian cookbooklet. Soy-related foods are mentioned on the following pages: Miso (sojapasta, p. 6-7). Soy bits / morsels (probably chunks of textured soy flour; Sojabrokjes, p. 12, 32). Soybeans (sojabonen, p. 12, 15). Tempeh (tempé, p. 2, 3-4, 12, 22). Tofu (tahoe, table of contents, p. 3-4, 7, 12, 18, 20, 28).

Also discusses: Azuki beans (adzukibonen, p. 11, 15). Quark (kwark, p. 7). Sesame salt (sesamzout, gomasio, p. 6) Sesame tahini (sesampasta, tahin, p. 6-7)

Note: This is the earliest Dutch-language document seen (Jan. 2005) that mentions azuki beans, which it calls

adzukibonen. Address: Larensweg 26, 1221 CM Hilversum, Netherlands.

2974. Just In Foods, Inc. 1985. *Miso Master*. Introducing Chick Peaso [chickpea miso]. We've used an ancient Japanese tradition to make a brand new food (Poster). Box 541, Route 3, Rutherfordton, NC 28139. 2 p. Back to back. 28 x 22 cm. 3 color. Reprinted in *Soyfoods Marketing*. Lafayette, CA: Soyfoods Center.

Address: Rutherfordton, North Carolina.

2975. Klein, Hermine. 1985. *Die neuen Sojagerichte: Schnell und delikat–Natuerliche Rezept–sammlung No. 3* [The new soy recipes: Quick and delicate–Natural recipe collection No. 3]. Vienna, Austria: Fachverlag Gesundheit GmbH. 50 p. Illust. 24 x 15 cm. [Ger]

• **Summary:** An attractive cookbooklet. Contents: Introduction. Green seeded soybean recipes. Yellow soybean recipes. Making tofu at home. Tofu sweets. Soymilk recipes. Miso soups. Soy granule recipes. Soy granule sweets. TVP recipes. Soy burgers (*Sojastangerln*). Address: Vienna, Austria.

2976. Kushi, Aveline; Esko, Wendy. 1985. *The changing seasons macrobiotic cookbook*. Wayne, New Jersey: Avery Publishing Group, Inc. 265 p. [43 ref]*

• **Summary:** 35 miso recipes, 35 tofu, 34 "tamari," 15 tempeh, 3 natto. Address: Brookline, Massachusetts.

2977. Lo, Kenneth H.C. 1985. *New Chinese cooking school*. Tucson, Arizona: HP Books. 288 p. Illust. Index. 28 cm.

• **Summary:** On the cover, below the title we read: "An illustrated course in contemporary Chinese cuisine." A gorgeous book, packed with superb color photos on glossy paper. One chapter (p. 98-115), titled "Bean curd and eggs," contains many tofu recipes. Other tofu recipes are scattered throughout the book.

The section titled "Soy beans and bean-based products" (p. 26) gives brief definitions of: Bean curd [tofu], bean curd cheese [fermented tofu], bean curd skin [yuba], salted black beans [soy nuggets] ("Cooked, salted and fermented whole soy beans. Mash them with other ingredients or mix into dishes for color" and rich, earthy, piquant flavor), Sichuan chili paste (yellow soy bean paste mixed with dried chilies and their seeds, sugar, and garlic), soy bean paste (crushed soy beans mixed with sugar, salt, and chili), sweet bean paste (made from cooked, puréed, sweetened red beans [azuki]), and yellow bean paste (made of fermented, salted puréed yellow [soy] beans with salt, flour and water). Also contains recipes for: Bean-curd cheese [fermented tofu], p. 88, 89. Bean curd skin [yuba] (p. 200, with color photo of "dried bean curd skin" on p. 18).

Recipes and photos for “salted black beans” [soy nuggets] or black bean sauce are: Steamed scallops with black bean sauce (p. 132, 138). Quick-fried crab in black bean sauce (p. 144). Cantonese steamed spareribs with black beans (p. 186, 188). Sliced beef in black bean and chili sauce (p. 201). Ho-fen noodles with beef in black bean sauce (p. 270, 273). Soy sauce is used in recipes throughout the book.

A color photo on the rear dust jacket cover shows Kenneth Lo. His biography, on the inside rear dust jacket, states that he is acknowledged the world over as an authority on Chinese food, and is a graduate of both Peking and Cambridge universities. He is also the founder of one of London’s best-known Chinese restaurants.

2978. Lotong, Napha. 1985. Koji. In: B.J.B. Wood, ed. 1985. *Microbiology of Fermented Foods*. Vol. 1. Essex, England: Elsevier Science Publishing Co. xx + 371 + 14 p. See p. 237-70. [180 ref]

• **Summary:** Definition and scope. Soybean koji: Raw materials, koji preparation, koji enzymes, application of soybean koji. Rice and similar products: Mould enzymes used in the fermentation of alcohol containing foods and beverages, miso rice koji. Seed inocula: Tane koji, production of seed inocula for soybean koji in South-east Asia, dry starter cakes, spore mass produced on rice adhering to inside surfaces of flasks. Conclusion. Address: Dep. of Microbiology, Kasetsart Univ., Bangkok, Thailand.

2979. Lukes, Timothy J.; Okihiro, Gary Y. 1985. *Japanese legacy: Farming and community life in California’s Santa Clara Valley*. Cupertino, California: De Anza College, California History Center Foundation. 156 p. Foreword by Norman Y. Mineta. 22 x 26 cm. 60 photos. Series: Local History Studies Vol. 31. California History Center, Cupertino, California. [175* ref]

• **Summary:** A comprehensive work about a Japanese farming community in California from 1895 to 1945. This book was the winner of the Association for Asian American Studies 1987 Book Award “for having made a most significant contribution to the study of the Asian American experience.” Pages 23-24 contain a map and legend of San Jose Nihonmachi (Japantown) from 1910 to 1920. Nomitsu Tofu was located on Sixth Street, four doors from Taylor Street.

Japanese farmers first arrived in California’s Santa Clara Valley in about 1895. The major theme of this book is their constant struggle. The ideas of inclusion and exclusion, oppression and resistance (the search for self-determination) of this minority group are carefully examined. The inside front cover notes: “Around the turn of the century, clusters of Japanese farms sprang up throughout the Santa Clara Valley, at Alviso, Agnew, Trimble Road, Berryessa, and the West Side (Santa Clara, Saratoga, Los Gatos). Each cluster

built a Japanese language school, held picnics and observed Japanese festivals such as New Year’s Day, and shared wells, tools, horses, and laborers. Peddlers from Nihonmachi visited those outlying clusters selling Japanese foodstuffs like tofu, miso, and seaweed, and in turn, the farmers took occasional trips to Nihonmachi for entertainment, funerals, and other social gatherings.”

Note: A good source of information on farming by Asian-Americans on the Pacific Coast is the periodical *Pacific Rural Press*. Address: 1. Asst. Prof. of Political Science; 2. Director of the Ethnic Studies Program and Assoc. Prof. of History. Both: Univ. of Santa Clara.

2980. McConnaughey, Evelyn. 1985. *Sea vegetables: Harvesting guide & cookbook*. Naturegraph Publishers, Inc., P.O. Box 1075, Happy Camp, California 96039. xi + 240 p. Illust. Index. 22 cm. [53* ref] Address: Oregon.

2981. Nabben, Alexander. 1985. *Soja-Kueche: Vielseitig und gesund [Soya cookery: Versatile and healthful]*. Schaaflheim, West Germany: Pala Verlag. 144 p. Illust. Index. 21 cm. [Ger]

• **Summary:** Contents: Soya, the wonderbean (*die Wunderbohne*). A cultural history of the soybean. A little soybean botany. Soya is versatile. The world market and world hunger. Health through proper nutrition and diet. Product types and buying tips. Recipes. About the author (autobiographical, with photo; he was born in 1953 in Viersen. Since 1978 he has worked in a whole-grain bakery, a soya kitchen, and in a vegetarian restaurant in Munich).

This vegan cookbook contains a large number of tofu and tempeh recipes, as well as recipes for most of the other types of soyfoods. Note the following German terms: *Ganze Sojabohnen (getrocknete gelbe Sojabohnen)* = whole dry soybeans. *Vollsojamehl* = Whole soy flour. *Sojasauce* = soy sauce. *Miso (Sojapaste)* = miso. *Okara (Sojakleie)* = okara. *Tofu (Sojaquark oder -käese)* = tofu. *Tempeh (Soja-”Brie”)* = Tempeh.

On the last page of the book (p. 144) is an advertisement for Morgenland Naturkost, located at: Au dem Anger 3410 Northeim 19, West Germany. Phone: 05551-64592. They offer tofu and tofu dishes, seitan and seitan products, and utensils for the production of tofu and tempeh.

Apparently a second edition or printing appeared in 1988 (ISBN 3-923176-35-x). Address: Morgenland Naturkost, Auf dem Anger 2, 3440 Northeim 19, West Germany.

2982. Noh, Chin-hwa. 1985. *Traditional Korean cooking: Snacks & basic side dishes*. Elizabeth, New Jersey; Seoul Korea: Hollym Corporation. 78 p. Illust. (color). Index (general). Index of Korean recipe titles. 27 cm. [Eng; kor]

• **Summary:** This is an excellent cookbook of authentic Korean recipes, each with its Korean name (romanized and in Korean characters). Each recipe is accompanied by numerous useful color photos. The front matter contains an Introduction, Preparation tips, and 2 pages about the healthy Korean diet. Soy related recipes include: Soft bean curd soup (*Sundubutchigae*, p. 10). Seasoned fermented soybean soup (*Ch'onggukchangchigae*, with 1 cake bean curd and 6-8 tablespoons seasoned fermented soybeans, p. 11). Royal soybean paste soup (*Kungjungdoenjangchigae*, with 2 tablespoons soybean paste [Korean miso], p. 12). Bean curd casserole (*Tubu Chon-gol*, p. 13). Wrapped bean curd (*Tubussamtchim*, p. 15). Stuffed bean curd (*Tubusobagi*, p. 16). Steamed bean curd (*Tubuson*, p. 16-17). Bean curd in soy sauce (*Tubut'wigimjorim*, p. 18). Salted bean curd and beef (*Tubu Soemgogijorim*, p. 18). Salted beans (*K'ongjorim*, with 1 cup black beans plus soy sauce, sugar, sesame seeds, and sesame oil, p. 19). Cold cooked bean curd (*Tubu Naengch'ae*, p. 22). Bean sprout rice (*K'ongnamulpap*, with 2/3 lb. [soy] bean sprouts, p. 24). Dried radish strips in soy sauce (*Muumallaengijangatchi*, p. 54). Cucumbers in soy sauce (*Oijangatchi*, p. 55). Sesame leaves in soy sauce (*Kkaennipchangatchi*, p. 56). Todok in red sauce (*Todokchangatchi*, with 1 cup soy sauce, p. 56). Fermented soybean lumps (*Meju*, with 18 lb. dried yellow soybeans, p. 62-63). Soy sauce (*Kanjang*, homemade, p. 62-63). Soybean paste (*Toenjang*, homemade, p. 63). Red pepper paste (*Koch'ujang*, homemade, with 2 lb. fermented soybean powder, 6 lb glutinous rice powder, p. 64). Note: This is the earliest English-language document seen (March 2009) that uses the word "Toenjang" to refer to Korean-style soybean paste (miso), or the word "Koch'ujang" to refer to Korean-style fermented red pepper and soybean paste (miso).

The useful Glossary (p. 73-75) contains definitions of: Bean curd (*tubu*). Beans, incl. yellow soybeans (*huink'ong*) which are used to make [soybean] sprouts (*k'ongnamul*), bean curd (*tubu*), soft bean curd (*sundubu*), bean paste (*toenjang*), fermented soybeans for making soy sauce (*meju*), seasoned fermented soybeans (*ch'onggukchang*), soybean flour (*k'ongkaru*), soy sauce (*kanjang*).

Brown soybeans (*pamk'ong*—literally "chestnut beans") are a chestnut brown color and have a smooth chestnut-like texture when cooked.

Black soybeans (*komunk'ong*) are served as a side dish.

Mung beans (*noktu*), used to make mung bean sprouts (*sukchu namul*), etc. Red kidney beans [azuki] (*kangnamk'ong*).

Bean sprouts (*k'ongnamul*) may be grown at home or purchased in the vegetable section of most grocery stores. The large sprouts are from the yellow soybean; the smaller, more delicate sprouts are from the green mung bean.

"Soybean paste (*toenjang*) is a thick brown paste made from a mixture of mashed fermented soybean lumps

[soybean koji] (left from making the soy sauce), powdered red pepper seeds and salt. It is used as a thickener for soups and stews and will keep well in the refrigerator.

"Soy sauce (*kanjang*) is a brownish-black salty liquid made by cooking fermented soybean cakes with water and salt. Each household in Korea used to make their own soy sauce in the spring; some still do. These are mild and add good flavor to most any food." Soy sauce is used in cooking and at the table. Japanese "soy sauce is less salty but sweeter than Korean soy sauce.

"Sweet red beans (*p'at*) are small and round and used widely in Korean confections. When cooked and mashed they are sweet and soft textured. This sweet bean puree [Japanese *an*] is used as filling in rice cakes [mochi] and also now in donuts and rolls."

The Glossary also mentions laver (*kim*), a sea vegetable called "nori" in Japan, that is widely used in recipes in this book. No other sea vegetables are mentioned. Address: Munhwa Cooking School.

2983. Noh, Chin-hwa. 1985. Practical Korean cooking. Elizabeth, New Jersey; Seoul Korea: Hollym International Corporation. 214 p. Illust. (color). Index. 27 cm.

• **Summary:** Although this cookbook of authentic Korean recipes contains more than twice as many pages as the author's *Traditional Korean Cooking* (214 vs. 78), many of the recipes and photos are identical, as is the front matter: Introduction, Preparation tips, and The Korean Diet. This book contains many more meat dishes.

Most of the soy-related recipes are the same, except there are many new recipes in which "soy sauce" is included in the title; many also contain meat. A complete list of these is given in the Index under "soy sauce." For example: Beef and bamboo shoot in soy sauce (p. 42). Chicken in soy sauce (p. 45). Deep-fried chicken in soy sauce (p. 46). Abalones in soy sauce (p. 104). Page 197 mentions "Soybean Paste Toenjang" Address: Munhwa Cooking School.

2984. Salunkhe, D.K.; Kadam, S.S.; Chavan, J.K. 1985. Postharvest biotechnology of food legumes. Boca Raton, Florida: CRC Press. 160 p. Illust. Index. 26 cm. [25 soy ref]

• **Summary:** Contents. 1. Introduction. 2. Seed structure, production, and distribution (Soybean, p. 8-10, 17-18). 3. Chemical composition. 4. Nature and causes of losses. 5. Harvesting, threshing, and drying (Soybean, p. 69-70). 6. Storage. 7. Processing and utilization (Soyfoods, p. 121-36). 8. Food legumes in protein crisis.

Chapter 7, "Processing and utilization," discusses tofu, tempeh, soy flour, soymilk, miso, shoyu, natto, hamanatto, and cereal-soy blends. Address: 1. Vice-Chancellor; 2. Prof. of Food Science & Technology; 3. Asst. Food Science & Technol. All: Mahatma Phule Agricultural Univ., Rahuri, Maharashtra State, India.

2985. Scott, David; Golding, Claire. 1985. *The vegan diet: True vegetarian cookery*. London, Sydney, Auckland, Johannesburg: Rider (Random Century). 141 p. Illust. by Steve Hardstaff. Index. 20 cm. [10 ref]

• **Summary:** This gourmet vegan cookbook, containing over 250 recipes, uses many soyfoods in its recipes: Tofu, soy sprouts, soymilk (Plamil), miso, soy flour (Soyolk), vegan cheese (nonfermented, made with Soyolk soy flour, margarine, and yeast extract), tofu ice cream, and whole dry soybeans. Address: England.

2986. Scott, David. 1985. *Protein-balanced vegetarian cookery*. England: Rider Books, Century Hutchinson Ltd. 182 p. Illust. Index. 23 cm. [31* ref]

• **Summary:** This book was originally published in 1980, and the latest reference in the bibliography is 1978. A second edition was published in 1985, then a 1987 edition was published in the USA by CRCS Publications, P.O. Box 20850, Reno, Nevada 89515. The author has a poor knowledge of soyfoods, and makes little mention or use of them in this book. He refers to tofu as "beancurd," has a recipe for "Beancurd Burgers," mentions miso and a Miso-Tahini Spread, soy sauce, plus an Sunflower Seed, Soya Bean and Almond Casserole. Pages 160-61, information about soya beans, contains many errors.

2987. *The first macrobiotic cookbook: Formerly Zen Cookery*. Revised edition. 1985. George Ohsawa Macrobiotic Foundation, 1511 Robinson St., Oroville, CA 95965. 134 p. Topical index. General index. 22 cm. First published under this title in 1984. [11 ref]

• **Summary:** Edited by Cornellia and Herman Aihara, this is a revised and expanded edition of *Zen Cookery*, which was first published in 1964 by the Ohsawa Foundation of Chico, California. "Includes 296 recipes updated for the 1980's." Each recipe is numbered and the numbers are almost the same as in the original edition though some of the names have been changed slightly, and ingredients have been adjusted. Much less salt has been used.

There is an interesting preface followed by 4 pages of photo recollections of the early 1960s related to Chico-San, Inc. and followers of macrobiotics.

Contents: Preface. Photo recollections. 1. Grains. 2. Noodles. 3. Vegetables. 4. Beans and sea vegetables. 5. Soups. 6. Sauces. 7. Salads and pickles. 8. Special dishes. 9. Miso and soy sauce dishes. 10. Breads and snacks. 11. Desserts. 12. Beverages. Seasonings. Cutting styles. Glossary.

"Soon after George Ohsawa came to the United States as a missionary of macrobiotics in 1959, he published *Zen Macrobiotics* in 1960. This book in its original form included recipes for macrobiotic cooking. Although the number of macrobiotic students increased rapidly because

of his interesting lectures and charisma, the much needed editing of the recipes for clearer instructions and measurements was not realized until later.

"In 1961, on Ohsawa's advice, thirteen macrobiotic families, numbering thirty-six people, left New York City and moved to a small town in Northern California named Chico. The following year, all the adult members of the group started the first macrobiotic food distributing company, Chico-San, Inc.

"Since nobody on the West Coast had heard of macrobiotic foods, one of the first jobs for the Chico-San founders was educating people in the macrobiotic philosophy, diet and cooking. A committee for the teaching of macrobiotic cooking was formed by the women of the group who began by separating the cooking section from *Zen Macrobiotics* and gathering recipes among themselves. Thus, Chico-San, under the name of the Ohsawa Foundation of Chico, published the first macrobiotic cookbook, *Zen Cookery*, in 1964.

"The book sold very well for eleven years. It was out of print from 1975 until 1984, when the George Ohsawa Macrobiotic Foundation published the book under its new title, *The First Macrobiotic Cookbook*. The 1985 edition has been completely revised and corrected; however, the original outline and numbering system have been retained." Address: Oroville, California.

2988. Troy, John. 1985. *American Natural Foods 1985 business plan*. Chapel Hill, North Carolina: American Natural Foods. 52 p. 28 cm. [4 ref]

• **Summary:** Contents: Introduction: The president's letter, purpose, corporate vision. Background: The natural foods industry, American Natural Foods, Inc. Marketing: The markets, the consumers, marketing strategy, distribution and sales strategy. The products. Manufacturing plans, organizational plans, board of directors, management, current reality. Financial plans. Appendix.

John Troy was the creator of Elf Works, Ltd., whose first popular product was Wizard Baldour's Hot Stuff, introduced in April 1981. He later introduced a number of other popular products containing miso. This is the business plan for a new publicly owned corporation whose articles of incorporation were filed on 23 Jan. 1984 and which will make products containing miso such as Miso Mustard and Smoky Mountain Sizzlin'.

Note: The company went bankrupt from overextension several years after it began operation. Address: Suite 21 The Courtyard, Chapel Hill, North Carolina 27514. Phone: 919-929-0113.

2989. Wood, Brian J.B. 1985. *Miscellaneous food-related fermentations*. In: B.J.B. Wood, ed. 1985. *Microbiology of Fermented Foods*. Vol. 1. Essex, England: Elsevier Science Publishing Co. xx + 371 + 14 p. See p. 213-35. [27 ref]

• **Summary:** Contains a good overview of tempeh, ontjom, and “New substrates for old technologies,” as chickpeas for miso and tempeh, or soybeans for idli. Address: Dep. of Bioscience & Biotechnology, Univ. of Strathclyde, Glasgow, Scotland, UK.

2990. Yang, P.; Chen, Steve. 1985. Huang dou zhi pin pin guan shou ce [Quality control manual for soybean and products]. Taipei, Taiwan: American Soybean Assoc. 110 + 125 p. Illust. 26 cm. [40+ ref. Chi]
Address: American Soybean Assoc., Taiwan.

2991. Yokotsuka, T. 1985. Fermented protein foods in the Orient, with emphasis on shoyu and miso in Japan. In: B.J.B. Wood, ed. 1985. Microbiology of Fermented Foods. Vol. 1. Essex, England: Elsevier Science Publishing Co. xx + 371 + 14 p. See p. 197-247. [146 ref]

• **Summary:** This book chapter is very similar to Yokotsuka (1982), “Industrial application of proteinous fermented foods.” However it contains some new, additional, and very interesting information, especially concerning history, on pages 198-209 as follows: Introductory definitions of enzymatic hydrolysis, *Aspergillus* molds, miso (whose per capita consumption in Japan is about half that of shoyu by weight), saké, mirin, amasaké. Table 1 shows “Per capita annual consumption of fermented foods prepared from *Aspergillus* moulds in Japan (1981).” Shoyu 10.1 litres. Miso 4.9 kg, sake 12.3 litres, mirin 0.6 litres, shochu 2.2 litres, rice vinegar 0.25 litres, (vinegar) 2.5 litres. Note: Beer 39.5 litres. Whiskey and other foreign alcoholic beverages 3.7 litres. Japanese population 117.85 million on 1 Oct. 1981.

History: History of fermented proteinous foods in China: Chu (koji), chiang, shi or tou-shi [soy nuggets], chiang-yu (soysauce), shi-tche (the extracted juice of soy nuggets). History of shoyu and miso in Japan: Hishio, sho, soya or soy, miso or misho, tamari, miso-damari, tare-miso and usudare, shoyu, miso of today.

Shu [Qu; koji] was first mentioned in the *Shu-Ching* [pinyin: *Shujing*] written 3,000 years ago during the Chou [Zhou] dynasty (1121-256 BC), which stated that chu is essential for making alcoholic beverages. Two different colors of chu were described: yellow and white. “The most popular one, which had a yellow colour indicating perhaps *Aspergillus oryzae*, was called yellow robe. The white one is presumed to be *Rhizopus* or *Mucor* and was called white robe.” Originally, chu was made in granular form and called *san-chu*. But by about AD 947-79 chu was developed in cake form called *ping-chu*. Address: Kikkoman Inc., Noda, Japan.

2992. Simas, Luiz; Joels, Bobbi. 1986. Re: Miso, tempeh, shoyu, and macrobiotics in Brazil. Letter to William

Shurtleff at Soyfoods Center, Jan. 7. 3 p. Typed, with signature on letterhead. [Eng]

• **Summary:** “When we returned to Brazil from the USA in Nov. 1981, we decided to hold a series of classes on natural foods processing, including a class on making tempeh at home. (Tempeh was completely unknown around here at that time.) We also began to make tempeh for our own consumption, but ended up setting up a small shop in our apartment. Because of the limited space, our tempeh production never went beyond 50 pounds per month, in spite of the large demand. So after a year or so, as we had originally planned, we handed the business over to a couple of friends who, unfortunately, for many reasons, were not able to continue tempeh production.

“However there is now another group of people making and selling tempeh here in Rio: Jurema and Mariá Paulinho, Rua Raimundo Correia, 27, apt. 504, 22.040 Rio de Janeiro (RJ), Brazil. Phone: (021) 237-7897. We will always be available for providing any kind of information about or classes on tempeh. One of our dreams is to see tempeh introduced in Brazil’s tropical northeast, where an incubator would not be necessary.

“At present we are involved in setting up miso and koji production in our house in the mountains of Minas Gerais for the coming year (1986). It’s an old dream, but it looks like it will finally come true. At first it will be a small-scale farm-house style production.

“Miso and shoyu, as well as tofu, are soy products with a long history in Brazil, mainly due to the large number of Japanese immigrants in Sao Paulo. There are many shops there and some here in Rio which sell Oriental products, including miso, shoyu, tofu and natto. Nevertheless, they are usually semi-industrialized and include sugar, preservatives, etc. among the ingredients.

“Production and consumption of quality miso, shoyu, tofu and natto only began with the arrival of Tomio Kikuchi, a student of George Ohsawa’s and one of the first people to introduce macrobiotics to Brazil. Until today the best known good quality miso and shoyu are the miso and shoyu distributed by Kikuchi’s Instituto Princípio Unico. There are, however, other good misos as well.

“Instituto Princípio Unico, Sao Paulo (SP); Arma-Zen Produtos Naturais Ltda., Rio de Janeiro (RJ); Terrazul, Nova Friburgo (RJ).

“We’re sure there are many, many small producers of quality miso and shoyu all over Brazil, but we don’t know their addresses. There is also a large company which claims to devote part of its production to naturally-fermented miso and shoyu, with no sugar. The company’s name is Tozan. Their factory address is: Bairro Carlos Gomes s/nº, Campinas (SP); phones: (011) 278-2495 or (011) 278-5826.

“There are also two individuals who have a lot of experience in making miso and koji at home. They are available to provide information as well. They are: Dr.

Sakae Maki, Praia de Botafogo, 428, s/304, Rio de Janeiro (RJ), phone: (021) 266-0503; Edson Hiroshi Seó, Fazenda Escola, 45.260 Poços (BA), phone: (073) 431-1108.

“We will continue to give classes on making homemade miso here in Rio, and we plan on eventually turning our small miso shop in the mountains into a school. We will always be available for any type of assistance or information concerning soy products.

“Several years ago the Brazilian Government tried to introduce soybeans in the public’s diet. It was a complete fiasco, mainly because of the lack of information on the part of the authorities. They simply tried to introduce soybeans as a substitute for the traditional black (turtle) beans, and soy milk as a substitute for cow’s milk. It didn’t work.”
Address: Rio de Janeiro, Brazil.

2993. Sarda, Patricia T. 1986. Ancient Japanese foodstuff is key to company’s new line of products. *Leader Newsmagazine (Raleigh, North Carolina)*. Jan. 16-23. p. 14-15.

• **Summary:** Miso, a product that has little or no recognition in the Triangle area, is the key to the success of American Natural Foods in Chapel Hill. John Troy is president of the fledgling company, Carol Rego is a major shareholder, and Larry Sarling is operations manager. The company’s miso based line of natural condiments are now available in over 3,000 specialty food stores and supermarkets across America.

Troy started his company (named Linden’s Elfworks) 8 years ago out of his home in the Triangle. He began by marketing a nutritious candy bar. A few years later the company moved to its present quarters at Suite 21, The Courtyard, in Chapel Hill and began developing Wizard Baldour’s Hot Stuff. The company now has four products: Miso Mustard, Wizard Baldour’s Hot Stuff, The Works, and Smoky Mountain Miso Sauce. Two more are under development: Sea Sauce (a condiment for seafood) and Spark! (a spicy powder condiment). The Miso Mustard is produced in Emeryville, California; the other three are made in Winston-Salem at Mrs. Campbell’s Canning company. A photo shows John Troy at his desk talking on the telephone. On the wall behind him is a framed painting of a wizard; on his desk is a bottle of The Works.

2994. Crump, Emily. 1986. Miso: A new soybean food product is joining the natural foods arena. *Durham Morning Herald (North Carolina)*. Jan. 30. p. 1C.

• **Summary:** A full-page article about American Natural Foods in Chapel Hill and American Miso Co. in Rutherfordton. The miso company produces about 200,000 lb/year of miso. Contains recipes for: Cheese and onion quiche (with red miso). Miso pate. Lentil or split pea soup with miso. Photos show: (1) Jan Belleme, with a baby on her back, hand-mixing cooked soybeans and koji. (2) Jan

transferring the mixture into a giant wooden vat at the American Miso Co. in Rutherfordton, North Carolina. (3) Jars of Miso Mustard, Smoky Mountain Sizzlin’, and BeeNut Butter [made with peanut butter, honey, and miso]—all made by American Natural Foods in Chapel Hill, North Carolina. Address: Staff writer.

2995. *Food Technology*. 1986. Miso. Jan.

• **Summary:** This spot gives basic information about three types of Cold Mountain miso and one type of koji made and sold by Miyako Oriental Foods, 4827 Puente Ave., Baldwin Park, California 91706. Phone: 818-962-9633. A small color photo shows the four products.

2996. Kotsch, Ronald E. 1986. Japan’s natural foods pioneer: Mitoku’s success is due to its network of quality suppliers. *East West Journal*. Jan. p. 18, 20-25.

• **Summary:** Mitoku “has been and (at present) remains the larger of the two main exporters of natural foods from Japan. With its chief competitor, Muso Shokuhin (see Sept. 1984 EWJ), it shares the bulk of a \$14-million-a-year market for superior Japanese food products.

“The central office of Mitoku is located in the prestigious Marunouchi building, in front of Tokyo Central Station... There is a staff of six Japanese and two foreigners (Christopher Dawson, a new Zealander, and Robbie Swinnerton, an Englishman)...

“The founder, sole owner, and guiding spirit of Mitoku is Akiyoshi Kazama, now fifty-five years old... A graduate of Waseda University in Tokyo, Kazama was selected in 1956 to study business in the United States... He became the first Japanese national to serve in the American Army following World War II. After two years as an American G.I. in Korea and Japan, Kazama returned to Japan and settled in Tokyo. He became an import-export agent for a German company dealing in opticals and electronics. Then in 1967 he got involved in the emerging natural foods business...

“At the time the newly formed Erewhon Trading Company of Boston was trying to import foods directly from Japan. Its owner, macrobiotic teacher Michio Kushi, was introduced to Kazama by letter through a mutual friend. Kazama agreed to use his trade expertise to ship \$3,000 worth of high-quality Japanese foods, selected by Kushi, to Boston...

“In 1969 Kazama formed a separate company to handle steadily increasing shipments, and called it Mitoku. Through the 1970s Mitoku continued to grow. It remained the principal supplier of Erewhon, which had become a leader of America’s natural foods industry. Also, it played an important role in the development of other companies such as Janus, Laurelbrook, and Oak Feed... The company moved into the European market as well, becoming a major supplier of Lima of Belgium, Sunwheel of England, and other major distributors...

“When in the fall of 1981 Erewhon finally collapsed, Mitoku was its largest creditor and took a \$300,000 loss. Erewhon’s demise nearly destroyed Mitoku... Mitoku has become a major supplier to Westbrae, Great Eastern Sun, Tree of Life, and the reborn Erewhon, all vigorous American firms...”

“Over the last five years, Mitoku’s annual sales have grown at about 20 percent a year. During the 1984-85 fiscal year gross sales were about \$7.5 million. During that period Mitoku bought some 300 food products from eighty-three producers... It sold to fifty-six customers around the world, including ten in North America and about thirty in Europe...”

“Just this past month, Mitoku has introduced a line of especially high quality products under its own label.”

The author and Mr. Kazama visited a number of Mitoku’s suppliers. Descriptions are given of Mansan Company Ltd. (making tamari and soybean miso since 1895), Sendai Miso Shoyu Co. Ltd. (the Sasaki family which runs the company started making miso in 1853), Fukaya Honten Shoyu (a small maker of organic shoyu).

2997. Sig, Marie. 1986. Soja: la protéine du futur [Soya: The protein of the future]. *Physic*. Jan. p. 32, 34-35, 110. [Fre]

• **Summary:** A brief introduction to tempeh, miso, tamari, tofu, soymilk, and soy flour from a macrobiotic viewpoint. One recipe is given, from the forthcoming French-language book, *Mysteries and Secrets of Soya*, by C. and L. Clergeaud. Address: France.

2998. *SoyaScan Notes*. 1986. Tally and analysis of clips from Soyfoods Clipping Service (Overview). Feb. 6. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The Soyfoods Center received from Luce Press Clippings a total of 311 clips on the subject of soyfoods during the ten weeks from 17 Oct. 1985 to 6 Feb. 1986. These clips were on the following subjects: Tofu 130 clips (41.8% of total), soy ice creams 83 (26.7%; including 49 clips on Tofutti), tofu second generation products 17 (5.5%), whole dry soybeans 17 (5.5%), modern soy protein products 10 (3.2%, incl. isolates and concentrates), soy oil 10 (3.2%), soymilk 9 (2.9%), miso 8 clips (2.8% of total).

2999. Burnett, Richard. 1986. Miso: MEE So–Japanese soybean foodstuff. Buddhist invention, secret behind John Troy’s success [American Natural Foods]. *Chapel Hill Newspaper (North Carolina)*. Feb. 23. p. 1D, 16D.

• **Summary:** A biography of John Troy, whose company buys some 50,000 lb of miso a year from the American Miso Co. in North Carolina. Miso is the oldest condiment known to civilization. About 15 years ago John Troy (a native of Durham, North Carolina) “dropped out” and spent almost 5 years with little or no money. He had previously founded a lucrative chain of stereo stores throughout the

South and had all the money he needed. But he wasn’t happy. He left it all to search for a deeper meaning in life. During his “dropout” years he got interested in what different religions and philosophies taught about higher states of awareness, and the role that food could play. Troy got interested in the nutritional and spiritual benefits of alternative foods, especially soybean products.

Troy said that American Natural Foods, based in Hillsborough, North Carolina, will gross more than \$500,000 in 1985-86, more than double the sales volume of the previous year, which was the company’s first year in business.

Troy first learned about miso about five years ago while he was managing a health food store in Chapel Hill. He and his wife Carol, at the time, had been making and marketing a health food candy bar through their business called Elf Works Inc. They had been buying miso for themselves while trying to find a way to market it to the public. Troy describes miso as “the highest state of what you can do with a bean and a grain; it is the oldest known condiment in civilization.” A photo shows John Troy with four of his products: Hot Stuff, Smoky Mountain Sizzlin’, Miso Mustard, and BeeNut Butter. Each contains miso as a key ingredient. Photos show: (1) John Troy holding one of his miso products, and standing by many cases of these products. (2) A hand pouring a bottle of Hot Stuff. (3) Jars of Miso Mustard, Smoky Mountain Sizzlin’, and BeeNut Butter. Address: Staff writer.

3000. Bassett, Barbara. 1986. Miso. *Bestways*. Feb. p. 32-33, 61. Cover story.

3001. Great Eastern Sun. 1986. Information packet on Miso Master miso (Leaflets). Enka, North Carolina. 5 p. 28 cm.

• **Summary:** Contains the following leaflets: (1) Miso Master miso main selling points. (2) Miso Master misos: Traditional red miso, Mellow white miso, Country barley miso, Mellow barley miso, Sweet white miso, Chick pea miso. (3) Miso Master nutritional information. Address: P.O. Box 327, Enka, North Carolina. Phone: (704) 252-3090 or (800) 334-5809.

3002. Rocheman, Marc. 1986. Les aliments fermentés dérivés du soja [Fermented foods derived from soya]. *Biofutur* No. 43. p. 34-42. Feb. [8 ref. Fre]

• **Summary:** Gives the composition and nutritive value of various soy products: tofu, fermented tofu (sufu), miso, natto, shoyu, and tempeh. Describes the possibilities for use of koji, as a source of proteases and peptidases, in the production of these fermented foods.

3003. **Product Name:** Westbrae Natural Instant Miso Soup & Recipe Mix [Onion, Vegetable, Tomato, Mushroom, or Chili].

Manufacturer's Name: Westbrae Natural Foods (Importer). Made in Japan.
Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: (415) 658-7521.
Date of Introduction: 1986. February.
Ingredients: Incl. dehydrated miso, vegetables.
Wt/Vol., Packaging, Price: 1 oz packets. Retails for \$0.70-\$1.00 each.
How Stored: Shelf stable.
New Product–Documentation: Ad (full page) in *East West Journal*. 1986. Feb. Black, green, brown, and white on yellow background. “Years of culture–yours in an instant. What is Miso? Macrobiotics? What did the Ancient Samurais Drink in the Morning? Why Westbrae’s Miso Soups? Who Are We? Since 1970, Westbrae continues to bring to the marketplace ‘foods that sell out from the company that didn’t.’”

3004. Hill, Laura. 1986. Making miso: For this Conway family it is a living and a way of life [Christian and Gaella Elwell of South River Miso Co. in Massachusetts]. *Daily Hampshire Gazette (Northampton, Massachusetts)*. March 14.

• **Summary:** The Elwells are one of the few miso producers in the United States. Their shop is located on Shelburne Falls Road in Conway. They make miso in the traditional way, mixing and cooking by hand, using no automation. To mash the soybeans they tread them underfoot, stomping them like grapes with plastic coverings on their feet.

Christian Elwell’s interest in miso developed from his interest in diet and its relationship to health. When his father died of cancer when Elwell was in his 20’s, it raised a lot of questions for him about food and its impact on wellness. Later, when he was traveling in Iran and India in the Peace Corps and became sick with jaundice, it was another catalyst for his interest in “how to create health and how sickness is developed.” This realization led him to an interest in macrobiotics. He met Gaella in the mid-1970s while they were both studying macrobiotics in Boston.

A photo by Laura Hill shows the company’s owners Christian and Gaella Elwell of Conway, with their children Anni, 6, and Isaiah, 2. They are standing by a sign that says “South River Miso Co.”

3005. American Miso Co. 1986. Hand-crafted organic miso: Made in the USA (Ad). *East West*. March. p. 10.

• **Summary:** This one-third page vertical black-and-white ad begins: “Near the Smoky Mountains in the green, rolling country of western North Carolina, the Miso Master continues a centuries-old tradition of hand-crafted miso.”

“Containing living cultures, they are truly a living food. Look for Miso Master in the refrigerated section of finer natural foods stores everywhere.

“With its velvety, creamy texture and its superb flavor, Miso Master miso is perfect for soups, dressings, dips, spreads and sauces. For free recipes using Miso Master miso, send a self-addressed, stamped envelope to: Great Eastern Sun, P.O. Box 327, Dept. H, Enka, NC 28728. From our kitchen to yours—traditional Japanese miso, made for you, in the USA.”

At the top of the ad is an illustration (line drawing) of a traditional Japanese miso shop, with thatched straw roof and several wooden kegs and barrels outside. Near the bottom of the ad is the Miso Master logo, an illustration showing the head and shoulders of a Japanese miso master, with a knotted headband, in front of a large wooden vat of miso. Below it: “Distributed by Great Eastern Sun, 92 McIntosh Rd., Asheville, North Carolina 28806.”

3006. Belleme, Jan; Belleme, John, Jr. 1986. Miso, the culinary giant. *MacroMuse*. Winter/Spring. March. p. 30-32, 35-37.

• **Summary:** An introduction to miso, with recipes. A photo shows John Belleme, Jr., executive chef at a South Carolina country club; he uses miso extensively in his gourmet cooking. Address: Rutherfordton, North Carolina.

3007. *East West*. 1986. The best & worst natural foods. *East West’s* first annual awards. March. p. 83-86.

• **Summary:** “Frozen non-dairy desserts. Best hard-serve product: Rice Dream by Imagine Foods of Palo Alto, California. Leaves all the soy products with their squabbles about tofu content and soy isolate use in the dust.” Address: Massachusetts.

3008. **Product Name:** Miso Master Miso [Country Barley, Traditional Red, Mellow White, Mellow Barley, Sweet White, or Chickpea with Barley].

Manufacturer's Name: Great Eastern Sun (Marketer). Made in North Carolina by American Miso Co.

Manufacturer's Address: 92 McIntosh Rd., Asheville, NC 28806. Phone: 1-800-334-5809.

Date of Introduction: 1986. March.

Ingredients: 1996: Organic soybeans, organic partially polished brown rice, sun dried sea salt, well water. Organically grown/processed in accordance with the California Organic Foods Act of 1990.

Wt/Vol., Packaging, Price: 1996: 1 lb plastic tub. Retails for \$6.59 (Lafayette, California).

How Stored: Refrigerated.

New Product–Documentation: Ad in *East West*. 1986. March. p. 10. Nov. p. 81; *Soy Power*. 1987. Catalog. All 16 oz. Product with Label purchased at Open Sesame in Lafayette, California. 1996. Dec. Price: \$6.59. 4.25 inch diameter lid. Black, brown, and light green printed on clear plastic. An illustration shows the Miso Master logo. Text on the side of the tub reads: “The American Miso Company is

proud to present domestic organic miso.” Soyfoods Center taste test. 1996. Dec. Excellent flavor, color, and aroma.

3009. Mori, Yutaka; Kiuchi, Kan. 1986. [A method for determination of the basic flavor components of miso]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 48. p. 209-12. March. [12 ref. Jap; eng]

• **Summary:** A method for quantitative analysis of the basic flavor compounds contained in miso is proposed. The compounds tested were: pyrazine, 2-methylpyrazine, 2,5-dimethylpyrazine, 2, 6-dimethylpyrazine, trimethylpyrazine, tetramethylpyrazine, N-methylpyrrolidone, benzothiazole, and 2-acetylpyrrole.

Reprinted from *Nippon Jozo Kyokai Zasshi (J. of the Society of Brewing, Japan)* 80(4):274-77 (1985). Address: National Food Research Inst., 2-1-2 Kannondai, Yatabe-machi, Tsukuba-gun, Ibaraki-ken 305, Japan.

3010. Sacolick, Diane. 1986. Where life and livelihood meet: A family macrobiotic food business produces amasake, natto, and mochi amidst the rural Berkshires [Kendall Food Co.]. *MacroMuse*. Winter/Spring. March. p. 24-28.

• **Summary:** “When the Kendalls started making amasake, they began with one five-gallon pot. Today they have the capacity to make 100 gallons of amazake a day with their four 30-gallon pots... Charlie thinks he invented the “milk shake” form of amasake.

On a typical day, wake up time is 5:00 or 6:00 a.m. Charlie only need take a few steps from his home kitchen to the shop. The first job is to pressure cook the rice for the amasake... in a 10-gallon pot. The rice is then allowed to cool overnight slowly without opening the pressure cooker. The next morning the rice is put in earthenware crocks and the koji is mixed in. The earthen crocks give the amasake more of a chocolate like taste. Here it is kept at a temperature of 135-140°F and occasionally stirred for 24 to 30 hours. Then the amasake is ground with blenders and put into a bottling vessel. It is topped with boiling water so the thick amasake will have more the consistency of a drink. Here it sits overnight before it is bottled, put into as walk-in refrigerator for a few days and shipped out.

“Only organic ingredients are used. Koji is prepared especially for the Kendalls the traditional way from milled brown rice using red cedar trays. High quality Lima [from Belgium] or Muramoto sea salt is used in cooking the rice, even though they are at least three times the cost of regular sea salt... Charlie’s Amazuki is made with American organic adzuki beans. The beans are fermented with the rice; this can be tricky since beans sour more easily than grains. I found the Amazuki slightly reminiscent of chocolate milk and enjoyed its unusual flavor.

“Charlie says natto, a soy food, is the best product he makes, ranking high in the world of medicinal foods, along with umeboshi and miso.” A description of the process follows. Photos show: (1) The Kendall’s home and food company. (2) Charlie and Yoko Kendall, and their young son, standing by the Kendall Food Co. sign. (3) Charlie Kendall—up close.

3011. Winter, Dorothy. 1986. The substitute foods industry—New directions. Business Communications Co., Inc., 9 Viaduct Rd., P.O. Box 2070C, Stamford, CT 06906. 186 p. March. Report No. GA-052. *

• **Summary:** Table of Contents lists the following: The Tofu Market Scene. Description, Manufacturer’s and their products. Markets, sales, and outlook. Tables: Percentage of Tempeh Sales by Type. Largest Tofu-Tempeh-Miso Manufacturers in the U.S., 1984. Tofu/Tempeh/Miso Industry in the United States, 1984 and 1990. Much of this material seems to be taken without permission from *Soyfoods Industry & Market* by Shurtleff & Aoyagi.

Other chapters: The role of protein in substitute foods, Meat (extenders and analogs). Dairy substitutes. Regulation in the substitute foods industry. Address: Stamford, Connecticut.

3012. Belleme, John; Belleme, Jan. 1986. Japanese foods. *Vegetarian Times*. April. p. 40-42, 49, 59.

• **Summary:** Adapted with permission from the book *Cooking with Japanese foods: A guide to the traditional natural foods of Japan*. Contains long sections on miso, shoyu, tamari, umeboshi, shiitake, and sea vegetables. Address: Rutherfordton, North Carolina.

3013. **Product Name:** [Shoyu, Tamari, and Miso (Barley, or Rice)].

Manufacturer’s Name: Celnat (Importer). Made in Japan. **Manufacturer’s Address:** Z.I. de Blavozy-Saint-Germain, 43700 Blavozy, France. Phone: 71.03.04.14.

Date of Introduction: 1986. April.

New Product–Documentation: Ad in *Le Compas*. 1986. March-April. p. 36.

3014. Celnat. 1986. Une large gamme d’aliments de base [A large line of basic foods]. *Compas (Le) (France)* No. 26. p. 36. March/April. [Fre]

• **Summary:** A choice of proteins: A line of legumes. Shoyu, tamari, and miso made from soya. Soyo brand soymilk, 100% non dairy (végétal) without added sugar. Wheat gluten flour for making seitan. Whole grains. A large line of macrobiotic specialties. Futons.

Most of Celnat’s cereal and legume products bear the CINAB logo meaning organically grown as certified by the Comité Interprofessionnel National de l’Agriculture

Biologique. Address: Z.I. Blavozy–St. Germain, 43700 Brives-Charensac, France. Phone: 71.03.04.14.

3015. Goldstein, Nora. 1986. Small company with a big vision [John Troy and American Natural Foods in North Carolina]. *In Business*. April. p. 30-31.

• **Summary:** John Troy “is a partner in American Natural Foods, based in Hillsborough, North Carolina. The company was started two years ago to develop and market condiments made with miso, a soybean-derived flavor enhancer. According to Troy, miso is the oldest known condiment to man, and current research shows it may have properties that help to prevent cancer. It can also be used as a salt substitute.

“The first product in American Natural Food’s line was developed by ‘accident.’ Troy, who gained valuable business experience by launching a major stereo chain in the South in the 1960s, became very involved with healthy eating and in the early 1970’s, he founded a business with his wife making ginseng candy bars. One day, while taking a lunch break, a string of hot red peppers fell into a built-in food blender.” From that emerged the company’s first miso product named Hot Stuff.

“A source of miso was located in North Carolina, and Troy and his wife began producing and marketing Hot Stuff along with the ginseng candy bars. In 1984, they decided to sell the candy company and form another business—American Natural Foods (ANF)—to develop and market miso-based condiments. The company is uniquely managed, with the principals spread out around the country.

“‘We have five people, all on the front line, who manage themselves,’ says Troy. ‘I do R & D and new product development, raise money, and keep the vision. Our director of marketing and advertising is in Boston [Massachusetts] and our manufacturing plant, owned and operated by another stock-holder, is located in Winston-Salem, North Carolina.’

“The partners sold 15 percent of the company’s stock to raise \$150,000 in initial capital. Since then, an additional \$350,000 was raised by selling stock to outside investors. There are now eight products sold by ANF, including a barbecue sauce, peanut butter, relish, a ginger sea sauce and a dried spice. Sales for the first year were \$250,000; for fiscal year 1985, which end in June, sales are expected to reach \$500,000, with \$1 million projected for fiscal year 1986.” So far, ANF’s products are sold mostly in natural- and health food stores—3,000 outlets nationwide. In the future, they plan to enter grocery stores, delivering their products direct to the store door, starting in North Carolina. “Troy describes the method as [bottom-up] guerilla marketing warfare. ‘That’s how the little guys get started in the grocery business,’ he says. ‘We are employing that strategy in North Carolina and after six months, our sales in the concentrated area between Raleigh and Charlotte are

exceeding our sales nationwide.’” A photo shows Troy holding a bottle of Miso Mustard.

3016. Maeda, Toshiie. 1986. *Miso no furusato* [The homeland of miso]. Tokyo: Kokon Shoin. 258 p. April. Illust. 20 cm. [124 ref. Jap]

• **Summary:** Contents. 1. The homeland of miso: The birthplace of miso. Cultural factors that gave birth to miso. 2. The paths of dissemination of miso: Southern and northern paths in China. The arrival of miso in Japan and its spread there. History of miso in Japan. 3. The taste and nutritional value of miso: Theories of change in miso. Miso in our lifestyle. 4. Miso as a commercial product: The movement of miso from producer to consumer. The price of miso. Future prospects for miso culture. Present status of changes in miso culture. Explore these new miso products from the principles of changes in miso culture. Proposal for the future of miso culture.

This creative book discusses miso’s history, the present status of the Japanese miso industry, the future of miso in the westernized Japanese diet, and the fact that the use of miso mainly in miso soup presents a big problem. The first solution to the problem is to use miso in thick ketchup-like sauces. The second is to return to the non-salted fermented foods such as Japanese natto, Nepalese kinema, Indonesian tempeh, and Chinese soy nuggets (shi), which are the ancestors of miso. He emphasizes tempeh, which he feels is a wonderful food that can be used in various ways, and is nutritious and healthy. He explains that tempeh is becoming popular in the USA and Europe, and concludes that tempeh alone can be used to start a food industry. Address: Sozosei Kaihatsu Kenkyusho Shusai.

3017. Soppe, Fennie. 1986. Jonathan, Histoire d’un boucher reconverti. Interview de Jos Van De Ponselee [Jonathan. History of a reconverted butcher. Interview with Jos Van De Ponselee]. *Compas (Le) (France)* No. 26. p. 14-16. March/April. [Fre]

• **Summary:** It all began in 1974, when Jos’s wife had serious health problems. There were suspicions of lung cancer. She went to Switzerland for care, and had a fever of 38-40°C for 6 months without improvement. One day someone gave them a small book about natural foods. She then began to eat macrobiotically and her fever disappeared after 3 months.

At the beginning, this diet was not at all attractive. The food was very poor, and Jos began to ask himself questions and to read books on the subject. He learned that it wasn’t a bad diet at all. Not wanting to have to prepare two types of food, he started to eat the same diet as his wife. His health did not improve much, but he found he had the capacity to work much more, and a need for less sleep. His days started at 6:00 A.M. and ended between 11:00 P.M. and midnight.

Upon seeing the results, he began to think and live differently. In the long run, the work at the butcher shop worried him. He no longer ate meat, but he was still selling it. That wasn't logical. He then decided to sell organic meat products at the butcher shop, and they sold very well. However that was a form of hypocrisy.

You must understand that at that time, macrobiotic people in the area were very fanatical. Meat was considered bad, in fact a poison. A more moderate viewpoint was needed; a bit of meat in itself is not bad, but its consumption in large quantities can present problems.

Jos opened two natural food shops in succession, and they were a success in part because he had experience in running a business. He tried to sell his butcher shop, which was very large. Through his new shops he met people who wanted to stop eating animal proteins, but they knew of no replacement. Neither tofu nor seitan nor hardly any other beans were available at that time. This made it hard for a person to change his or her diet.

Jos attended a seminar conducted by Michio Kushi at Drogen. They talked about these problems. Michio spoke to Jos about miso and tamari, and advised him to come to Boston, Massachusetts, where he could learn and see everything. He did. Indeed miso and tamari were available, but they were made overseas. He was somewhat deceived in the early days. Most of the products came from Japan. During the same period he worked at the famous restaurant The Seventh Inn. He became friends with Japanese and they worked together making seitan. Finally, he started commercial production with two Americans.

Tofu was very well known, but it was made in [Boston's] Chinatown. The Chinese did not want to show others how to make it, but they were allowed to look. This interested him very much.

Upon returning to Belgium, after his studies in Boston, Jos began commercial production of seitan. At the beginning people were very closed. They thought that one should consume only beans. Their fanaticism seemed very natural to them, but that made it very difficult for Jos to survive economically by making only seitan. He started by producing 500 gm a week of seitan for Souen, a macrobiotic restaurant in Gent [Gand]. He urged the restaurant to serve seitan to each customer in a familiar form. That was successful. After several months, the natural food stores began to order seitan from him; that was his goal. Finally he began the production of fresh organic tofu. He encountered new opposition when he suggesting sterilizing the tofu, which would cause loss of vitamin C, etc.

People got to know seitan but grew tired of it, so now he has the seitan burger between two buns, with onion and lettuce. They are also thinking about introducing seitan brochettes and seitan in sauces. The starch left over from making large quantities is used in making soups, spreads for bread, goulash, etc.

How did his customers react initially to all this? They thought he was crazy—in 3 ways. (1) They thought macrobiotics was folly; (2) Who but a fool would sell a butcher shop that was doing so well, employed 16 persons, and was the first to sell organic meat with great success. They thought that America had made him lose his head; (3) They thought artificial meat was absurd and would not sell. But these people have changed their opinions as things have developed.

His best invention is seitan sold sterilized in jars; it is now a very successful product. He is also very proud of his tofu burgers (*les beignets*, *les ganmos*; made from tofu, sesame seeds, onions, mushrooms, and arrowroot), his sauces, and his mushroom tarts. Neither his soy croquettes nor his carob products sell well. His basic products are seitan, tofu, and mochi (made according to a traditional Japanese recipe). The company will soon focus more on exporting its products, especially to Germany, followed by France (starting in 1987) and Austria. He has created a company in France named Jonathan France (La Comba 24620, Les Eyzies. Phone 53.06.94.68), directed by Frenchmen, because it is very difficult to export to France; he has been trying for 2 years.

Black-and-white photos show: (1) A portrait shows Jonathan, with a large beard, rimless glasses, and thinning hair. (2) Twenty-three of his sterilized products in jars, which have a shelf-life of 2 years. Among these are Sojapastei, Sojaboont Jes, Azukiboont [Azuki bean] Jes, Brown Rice Casserole with Seitan, and Tofu Salade. The company is studying a tempeh spread for bread. The company now has 16 employees, including 3 in stores as a representative. Most of the employees like this food. Not all are macrobiotic but most have changed their diet, usually without fanaticism.

The company's name Jonathan comes from the name of the book *Jonathan Livingston Seagull* (Jonathan Le Goëland), about a seagull who wants to live differently. Jos believes that vegetable proteins can play an important role in world hunger. His dream, which he hopes to realize, is to establish small food companies in Zaire, Rwanda, and all of southern Africa. "For example, a small tofu machine can produce 800 to 1,000 cakes of tofu/day. I would like these people in poor countries to be able to make tofu themselves."

Jos is not a vegetarian. He still likes meat and eats it in small quantities, often fish or organic meat. He has 3 children. Address: Pays-Bas (Netherlands).

3018. Business Trend Analysts, Inc. 1986. The health and natural food market. 2171 Jericho Turnpike, Commack, NY 11725.

• **Summary:** Section VII is titled "The Market for Soyfoods." It is a combination of material taken without permission from Shurtleff & Aoyagi's *Soymilk Industry and*

Market (especially the overview on page 96) and little bits and pieces for various sources that fail to give an accurate picture of this market. The report repeatedly speaks of the “soyfoods market” without defining which product types it is including. Part of the information is said to be based on “A special survey of 5,000 households, providing up-to-date information on changing consumer attitudes and buying patterns with respect to soyfood products.” The results of this survey include consumption levels by household income, type of retail outlet, geographic region, race, age and presence of children. They project manufacturers’ sales of soyfoods to be \$499.5 million in 1995, assuming a compound annual growth rate of 15.3% from 1985 to 1995. Generally a disappointing study, especially for the price. Address: Commack, New York.

3019. Katagiri, M.; Shimizu, S.; Kaihara, H. 1986. Miso no esuteru kei shibô-san, yuri shibô-san oyobi yuki-san no chûshutsu to gasukuromatogurafimiso seibun no kenkyû. I. [Separation and gas chromatography of esterified and free organic acids in miso]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 60(5):385-87. May. [12 ref. Jap; eng]

• **Summary:** A method for extraction of lipids from miso and successive detection of ethyl esters, total glycerides and free organic acids was developed. The yield of the first diethyl ether extract obtained by this method was about twice that of the conventional celite filtration method. This procedure is rapid and reliable. Address: Dep. of Home Making, Iida Women’s Junior College, Matsuo 610, Iida-shi, Nagano 395, Japan.

3020. Perez, Oswaldo. 1986. La soya en la alimentacion humana [Soya in human nutrition]. *La Era Agricola (Merida, Venezuela)* No. 0. May. p. 14-15. [1 ref. Spa]

• **Summary:** Shows how soya makes most efficient use of the earth’s ability to produce protein. Address: Granja Tierra Nueva, Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

3021. Rosoff, Peggy. 1986. Is dried miso good for you? *MacroMuse*. Spring. p. 11.

• **Summary:** Freeze-dried miso, as sold by Edward and Sons, contains 8,000 units of live lactobacillus per gram. Address: Rockville, Maryland.

3022. *Toyo Shinpo (Soyfoods News)*. 1986. 7 mm kaku no Tsubu Dôfu. Nihon Biinzu kongetsu kara shinhatsubai [Firm tofu in 1/4 inch cubes. Nihon Beans starts to sell it this month]. June 16. p. 1. [Jap; eng+]

• **Summary:** This diced, firm lactone silken tofu is packed in a polypropylene container. A convenience food, it can be used in Mabo Tofu, miso soup, etc.

3023. Belleme, Jan; Belleme, John. 1986. *Cooking with Japanese foods: A guide to the traditional natural foods of Japan*. East West Health Books, 17 Station St., Brookline, MA 02146. xi + 220 p. Illust. Index. 25 cm. [45 ref]

• **Summary:** A good study from a macrobiotic viewpoint, with more than 200 macrobiotic recipes. The authors studied in Japan and speak Japanese. Contents: Foreword. Acknowledgements. Introduction. Fermented Foods: miso, shoyu, tamari, brown rice vinegar, sake, mirin, koji, amazake, pickles, umeboshi, ume su, medicinal teas, ume extract, bonito flakes, natto. Noodles: cooking noodles, udon, soba, soba, somen, clear noodles. Grains, incl. rice, mochi, seitan, fu gluten cakes, hato mugi [*hatomugi*] (Job’s tears), rice syrup, rice bran. Vegetables: shiitake, daikon, Hokkaido pumpkin, Chinese cabbage, burdock, jinenjo, lotus root. Sea vegetables: kombu, nori, wakame, hijiki and arame, kanten (agar). Beans: azuki beans, black soybeans, tofu. Condiments: kuzu, dark (toasted) sesame oil, goma (sesame seeds), tekka, shiso momiji (shiso leaf condiment), wasabi. Teas. Cooking utensils. Appendix: Composing meals, pronunciation guide, suppliers. Bibliography.

Amazake (p. 39-45). Contains a ½ page description plus good instructions for making basic amazake (thick “pudding” and thinner beverage), both from glutinous (“sweet”) rice. Also recipes for Vanilla Amazake Pudding, Amazake Cream Puffs, Neapolitan Parfait, Carob Amazake Brownies, Bob’s Coconut Amazake Macaroons, Amazake Bread (yeasted), and Unyeasted Amazake Bread. Perhaps the most lengthy information on amazake available in English up to this time.

Hato mugi (“Job’s tears,” p. 93) “resembles barley, but it is actually a member of the rice family. An easily digestible whole grain with only the tough outer husk removed, hato mugi contains less vitamin B-1 than brown rice but approximately twice as much protein, iron, vitamin B-2, fat, and slightly more calcium.” It has long been used in China and Japan as a medicinal food, “for strengthening the stomach, purifying the blood, and restoring health. Since it is so effective in helping the body to discharge toxins, people who are sick and weak, and women who are pregnant, nursing a baby, or menstruating should eat it sparingly.” Address: Rutherfordton, North Carolina.

3024. Chin, K.-D.H.; Koehler, P.E. 1986. Effect of salt concentration and incubation temperature on formation of histamine, phenethylamine, tryptamine and tyramine during miso fermentation. *J. of Food Protection* 49(6):423-27. June. [29 ref]

• **Summary:** Histamine, tryptamine, tyramine, and phenethylamine are biologically active (biogenic) amines which can have important psychoactive and vasoactive effects in humans. Tyramine, histamine and phenethylamine are pressor amines that cause changes in blood pressure. Tyramine and phenethylamine have also been implicated as

causal agents in migraine headache. Biologically active amines have been found in many foods, especially fermented foods such as cheese, sauerkraut, wine and fermented meat. These biogenic amines are produced when specific amino acids undergo decarboxylation catalyzed by specific decarboxylase enzymes produced by microorganisms active during fermentation.

Misos containing 5% and 10% salt (NaCl) were prepared and incubated at 25 and 35°C. Higher amine levels were found in the low salt than in the higher salt miso. Incubation temperature within the range examined had little effect on amine formation in miso. Address: Dep. of Food Science, Univ. of Georgia, Athens, GA 30602.

3025. Matsuura, Noboru. 1986. Josha, seikiku, shikomi ikkan sôchi no kaihatu to mugi miso seizô [Development of industrial miso fermentation equipment for continuous steaming, moulding, and mashing of barley miso]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 81(6):374-77. June. [Jap]
Address: Toyo Kakoki Co., Kumamoto 862, Japan.

3026. Owen, Sri. 1986. Indonesian food and cookery. 2nd edition, revised and enlarged. Prospect Books, 45 Lamont Rd., London SW10 0HU. 268 p. First edition was 1976. Illust. by Thao Soun. Index. 23 cm. [20 ref]
• **Summary:** In the chapter titled "Essential ingredients" are sections on "Kecap or soya sauce" (p. 42-43) and taucu (p. 44). Also contains a chapter titled "Tahu and tempeh" (p. 216-28) with good information and recipes on tofu and tempeh. Address: Mustika Rasa, 96 High St., Wimbledon Village, London SW19 5EG. Phone: 01-946-7649.

3027. Troy, John. 1986. Update on work with American Natural Foods and miso (Interview). *SoyaScan Notes*. July 28. Conducted by William Shurtleff of Soyfoods Center.
• **Summary:** John is now \$150,000 in debt. The natural foods market was much smaller than he had thought and than market studies indicated. There are only 200 good and fairly big natural foods stores in the USA. The biggest ones are: Bread and Circus, Alfalfa's, Mrs. Gooch's, Whole Foods in Texas, and Blue Bonnets in Texas.

John's products are now in 1,700 Kroger's stores. His three best-sellers are: (1) Miso Mustard, (2) Hot Stuff, and (3) Miso Sauce (a new product for chicken, with tahini and tamari). Address: North Carolina.

3028. Belleme, Jan. 1986. Twenty-five warm weather ways to use miso. *Vegetarian Times*. July. p. 32-37.
Address: Rutherfordton, North Carolina.

3029. **Product Name:** Rice Koji for Amazake and Light Misos, Unpasteurized Seed Miso.
Manufacturer's Name: GEM Cultures.

Manufacturer's Address: 30301 Sherwood Rd., Fort Bragg, CA 95437. Phone: 707-964-2922.

Date of Introduction: 1986. July.

New Product-Documentation: Letter from Betty Stechmeyer of GEM Cultures. 1991. Oct. 18. These two basic products were introduced in July 1986.

3030. *Natural Foods Merchandiser*. 1986. 7th Annual Natural Foods Merchandiser merchandising awards. July. p. 42-43, 45.

• **Summary:** Soyfoods won the following awards: Gold: San-J Tamari (wheat-free soy sauce) and Shoyu; Silver: Fantastic Foods' Tofu Scrambler & Tofu Burger, Westbrae Natural miso soups; Honorable mention: Walker & Wilks Tofoods frozen entrees, White Wave boxed tofu. Color photos show each.

3031. *Sunset (Menlo Park, California)*. 1986. What's the marinade's mystery ingredient? *Miso*. 177:157-58. July.

• **Summary:** Seventh-day Adventists make Marmite, but Vegemite has most of the market. Includes recipes.

3032. *Sunset (Menlo Park, California)*. 1986. What's the marinade's mystery ingredient? 177:157. July. *

3033. **Product Name:** Smoky Mountain Miso Sauce.
Manufacturer's Name: American Natural Foods, Inc.
Manufacturer's Address: Box 2321, Chapel Hill, NC 27514.

Date of Introduction: 1986. August.

Ingredients: Incl. miso, tomatoes, tomato paste, apple cider vinegar, herbs and spices (cumin, oregano, cayenne peppers).

Wt/Vol., Packaging, Price: 12 oz glass bottle with red plastic twist-off cap. Retail for \$2.39 (1986/08).

How Stored: Shelf stable.

New Product-Documentation: Label. 1986, undated. This is a miso-based barbecue sauce. "You'll love it on chicken!"

3034. Boon-Long, Narudom. 1986. Traditional technologies of Thailand: Traditional fermented food products. In: V.H. Potty, et al. eds. 1986. *Traditional Foods: Some Products and Technologies*. 292 p. See p. 114-33. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [23 ref]

• **Summary:** "Products such as soy sauce, soy paste (*Tao-Jeow*), fermented soybean curd [*Sufu*] and *Thua-nao* constitute the major traditional fermented foods [of Thailand]. The first three are common throughout the country. *Thua-nao* is popular in northern Thailand." Flowcharts and details are given concerning the production

of each of these products. Address: Dep. of Food Science & Technology, Kasetsart Univ., Bangkok, Thailand.

3035. Lee, Cherl-Ho. 1986. Traditional food technologies and their recent developments in Korea. In: V.H. Potty, et al. eds. 1986. Traditional Foods: Some Products and Technologies. 292 p. See p. 178-90. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [14 ref]

• **Summary:** The traditional Korean soybean fermentation technique is unique. Soybean is the only ingredient used, and sauce and paste are made simultaneously. In the first step of the fermentation, meju is made from cooked and mashed soybean balls, which contain no salt. Molds, mainly *Aspergillus oryzae*, grow on the surface of a meju ball, and bacteria, mainly *E. [sic, Bacillus] subtilis*, inhabit the inside of the ball. One part of meju, one part of salt, and 4 parts of water are mixed in earthen jars, and ripened for several months. The supernatant dark brown liquid of meju-brine mixture is soybean sauce and the brownish solid residue is soybean paste.

Kochujang, a mixture of fermented soybean paste and ground red pepper, is a unique food product available only in Korea; it reflects the hot spice preference of its people. It is prepared by mixing ground meju powder with steamed cereal flour, red pepper, salt and water and allowing further fermentation and ripening of the mixture in earthen jars for several months. Flowcharts are given for soy sauce, soy paste, and kochujang.

Under "Recent developments" (p. 187), the development of improved meju and meju-brine are discussed. Address: Dep. of Food Technology, Korea Univ., Seoul, Korea.

3036. Potty, V.H.; Shankar, J.V.; Ranganath, K.A.; et al. eds. 1986. Traditional foods: Some products and technologies. Mysore, India: Central Food Technological Research Inst. (CFTRI). 292 p. Aug. Papers presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies" held June 1983 at CFTRI, Mysore. 25 cm.

• **Summary:** This publication contains 27 papers presented by scientists from countries of Asia, Africa, Europe, and the Americas. Chapters related to soy are cited separately. The traditional foods of the following countries are discussed specifically: Ethiopia, Nigeria*, Sudan, Senegal, Pakistan*, India, Nepal*, Burma*, Thailand*, Malaysia*, Indonesia*, Philippines, Korea*, China*, Japan*, and Mexico*. Countries with foods related to soy are followed by an asterisk (*). Address: Central Food Technological Research Inst. (CFTRI), Mysore-570 013, India.

3037. Steinkraus, Keith H. 1986. Industrialization of indigenous fermented food fermentations. In: V.H. Potty, et al. eds. 1986. Traditional Foods: Some Products and Technologies. 292 p. See p. 232-45. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [52* ref]

• **Summary:** Includes discussions of shoyu, miso, tempeh, koji, and meat analogs. Address: Inst. of Food Science, Cornell Univ., Geneva/Ithaca, New York.

3038. Watanabe, Tokuji. 1986. Traditional foods: Their values, problems and research and development. In: V.H. Potty, et al. eds. 1986. Traditional Foods: Some Products and Technologies. 292 p. See p. 201-08. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [7 ref]

• **Summary:** Contents: Introduction (ways of classifying traditional foods). Structural characteristics of traditional food industries in Japan. Traditional food processing technologies. Problems and reevaluation of traditional foods. New food processing technologies applied to traditional foods. Technologies applicable to traditional foods. Assessment in modernization of traditional food production. Some activities related to traditional foods. Conclusion.

Traditional foods can be classified as staple or non-staple, fresh or processed (processing technologies include fermentation [e.g. miso, soy sauce, natto], salting, acidifying, drying after freezing [kori-tofu], sun-drying, fractionation [tofu], fabrication [ganmodoki], simulation of animal foods [soy milk, ganmodoki, su-ho-tai made from yuba in China]), animal or vegetable origin, and region or national production.

In Japan, rice consumption is decreasing year after year. It is thus not surprising that consumption of traditional foods closely associated with rice production are also decreasing. The reevaluation of traditional foods and their advantages and disadvantages are discussed. New food processing and packaging technologies are being applied to traditional foods, including tofu, miso, natto, and koji. Recently a method has been found to extend the shelf life of natto beyond the traditional 1-2 day period. Miso has been freeze-dried.

"Another application of a new process for the traditional foods is the emulsion curd which is a semi-solid mixture with definite proportion of soybean protein, oil and water. It keeps its form without flow. Even the dried or frozen product recovers its original texture by hydration or thawing. Therefore, it is used as a substitute in dried or

frozen *Tofu*. Regular *Tofu* cannot recover its texture once it is frozen or dried...

Miso can be enriched with vitamin B-2 and calcium, and its salt content lowered. Since 1980 the Laboratory of Food Science at Kyoritsu Women's University has been conducting a research survey on traditional foods and dishes in Japan in cooperation with the Cooking Research Laboratory. "This project consists of three components: (a) survey of the present status of traditional foods on local basis at respective regions by visiting prefectural research organisations—universities and colleges; (b) sending questionnaires to students for seeking information on the position of the traditional foods in the dietary patterns of individual homes and also to obtain their comments on the future prospects of the local traditional foods; (c) and documentation regarding local traditional foods, followed by classification according to preparation or cooking method for analysis. On the basis of the collected data, the relationship between each local traditional food and its natural, cultural and historical background has been studied and published in the university's journals. More efforts are being made to identify the reasons as to why and how some traditional foods have survived in certain regions, while the others have disappeared or reached the verge of extinction.

"Another related activity is the one carried out by Ajinomoto Company, a major food manufacturer in Japan, which has got the modern audio-visual media, video-tapes and 36 mm-films. Their team has been documenting the processing of some selected traditional foods like *Tofu*, *Yuba*, *Fu* and such other foods as demonstrated by professionals by using the old traditional methods and facilities. This would help in the documentation of traditional technologies before they disappear in the event of modernisation of such foods. Such tapes and films have been made available by the company...

"Traditional foods, especially those of plant origin, are prepared by such complex multi-step processes as to be called 'products of human wisdom.' Therefore there is so much to learn from such products if serious attention be paid. Indeed they have great potential for developing new food industries." Address: Kyoritsu Women's Univ., Tokyo, Japan.

3039. Winarno, F.G. 1986. Traditional technologies of Indonesia with special attention to fermented foods. In: V.H. Potty, et al. eds. 1986. *Traditional Foods: Some Products and Technologies*. 292 p. See p. 136-47. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [24 ref]

• **Summary:** Contents: Introduction. Tempe. Oncom. Taucu and soy sauce. Tape (tapeh) and its products. Brem wine. Brem cake. Terasi. Salted eggs and pindan. Pindang (made

from salted fish). Address: Food Technology Development Centre, Bogor Agricultural Univ., Indonesia.

3040. Yin, Zong Lun. 1986. Development and industrialization of traditional food production in China. In: V.H. Potty, et al. eds. 1986. *Traditional Foods: Some Products and Technologies*. 292 p. See p. 191-200. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India.

• **Summary:** Under "Oilseeds, Soy products," the author discusses soymilk, soybean curds (*tofu*; soft *tofu* is popular in south China and hard *tofu* in North China), fried bean curd, smoked bean curd, "stink" flavoured bean curd, soymilk skin sheet [*yuba*], dried soymilk skin sticks [*bamboo yuba*], fermented bean curd or soy cheese, and soybean powder.

Under "Condiments," soy sauce is discussed. Note: This is the earliest English-language document seen (Oct. 2008) that uses the term "soymilk skin" or "soymilk skin sheet" to refer to *yuba*, or that uses the term "dried soymilk skin sticks" to refer to *bamboo yuba*. "These products form an important part in a vegetarian's diet and are used in conjunction with other ingredients to prepare imitation meat and fish like products for vegetarian dishes" (p. 194).

"Soymilk is a very popular breakfast beverage. In order to supplement milk supplies and also meet the special needs of those who, for some reason cannot drink milk, processing factories have been set up with relatively large-scale production capacities for soymilk. With the same distribution pattern as milk, soymilk is supplied to various catering departments, schools, kindergartens, nurseries and families. The process employed for soymilk ensures destruction of trypsin inhibitor and effective deodorization to reduce the unpleasant bean-taste...

"Fermented bean curd or soy cheese can be produced by the fermentation of bean curd. The fermented bean curd may differ in shape (square bits, cubes), colour (white, red), flavor and smell; the products can also be steeped in seasoned rice wine or preserved with drags of rice wine. Sometimes they contain added pepper, rose leaves or shrimp spawn. The traditional production procedure is very subtle. The aging process requires high levels of skill and experience. The product is liable to break down and careful handling is needed. Presently, a new type of fermented bean curd in the form of paste which is more amenable to handling and packaging, and consuming has appeared on the market. However, this product does not conform to Chinese traditional eating habit and is, therefore, now [not?] widely accepted, either for nutritional value or flavour. Soy cheese has a great potential for development...

"In several baby food recipes, soybean constitutes an important source of protein. The well known milk substitute

5410 formulated during the 1950s contained soybean powder as the main ingredient. Formula 5410 has proved to be a success in terms of its nutritional value. It has become the basic recipe for many milk substitutes. Some factories use spray drying process to produce instant blended milk powder consisting of soymilk, milk and other ingredients; they have gained some technological and financial benefits. In recent years, there has been a continuous flow of such products into the market.

“Based on previous research efforts, and in conformity with China’s present situation, work is being done to develop an oil-containing concentrated soy protein. The techniques involved have certain positive characteristics. The end product can be a liquid for direct use as a food ingredient or a spray-dried powder for the formulation of dry-mixes.” Address: Research Inst. of Light Industry, Beijing, People’s Republic of China.

3041. Westbrae Natural Foods. 1986. Distributor catalog, Northeast delivered pricing: Sept. 1, 1986. Emeryville, California: Westbrae. iv + 17 + [13] p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on a light blue background. Pages i-iv are general information, 1-9 are a computer-printed price list, and 11-17 are a product glossary. There are also 1-page, single-sided inserts (sell sheets, many in full color) including the following Westbrae products: (1) Malted’s (2 new flavors—Java and Almond. No caffeine (c) 1984). (2) Malted’s: “The Cadillac of soydrinks” (Q&A). June 1986. (3) The uncommon ramen—whole wheat, 12 flavors in all. (4) Instant vegetable miso soup. Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (415) 658-7518 (orders).

3042. Arocena, Javier. 1986. Re: Brief history of the soyfoods company Zwaitzo in Spain. Letter to William Shurtleff at Soyfoods Center, Sept. 10. 2 p. Typed, without signature on letterhead. [Eng]

• **Summary:** “I’ve been working for the last 4 years making tofu, seitan, and tempeh, in a craftsman way, in the North of Spain, in the Basque country. Unfortunately in all of Spain we are only two people making those kind of products, even if slowly, slowly, people are asking us more and more for them every day. I have graduated in biology, and so have a background in what I am doing. I’ve really found myself useful for the rest of the world, and enjoy my life and work... I’d like to ask if there is any possibility of working for a short time (a summer or a month) in a place where I could learn how to make miso, tamari, natto, sufu, and soynuts.” Address: Zwaitzo, Correria, 39-01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.

3043. Abdul Rahman, Hussein. 1986. An update in the manufacturing of traditional fermented and non fermented

soyfoods in Malaysia. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 59-73. Held 16-18 Sept. 1986 in Jogjakarta, Indonesia. [38 ref]

• **Summary:** Contents: Abstracts. Introduction. Present status of soybean utilization in Malaysia. Manufacture of traditional fermented soyfood in Malaysia. Manufacture of traditional non-fermented soyfood in Malaysia. Research and development of soyfood in Malaysia. Conclusion. Address: Extension Services, Food Technology Div., Malaysian Agricultural R&D Inst., P.O. Box 202, Serdang, Selangor, Malaysia.

3044. Fukushima, Danji. 1986. New development in the process of traditional soyfoods in Japan. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 21-57. Held 16-18 Sept. 1986 in Jogjakarta, Indonesia. [22 ref]

• **Summary:** Contents: Abstract. Soy milk. Tofu. Soy sauce. Miso. Natto.

Table 1 (p. 28) shows changes in the size of the soymilk market in Japan from 1979 to 1985. For each year there are statistics for the amount of soymilk sold (in kiloliters), the ratio of that amount to the amount sold during the previous year, the total retail value in yen, the ratio of the retail value that year to the value the previous year, and the ratio of the retail value that year to the value in 1979. The amount of soymilk sold in million liters is as follows: 1979—6.5 million liters. 1980—12.0. 1981—25.2. 1982—54.3. 1983—111.5. 1984—84.013. 1986—55.354.

Also contains a detailed analyses of the off-flavors in soymilk. These off flavors are brought about through the hydrolysis of the glycosides by the β -glycosidase contained in soybeans. Contains 46 figures, including many photos, flowcharts, and equipment designs. Address: Food Research Inst., Kikkoman Co. Ltd., 339 Noda, Noda City, Chiba prefecture, Japan.

3045. Fukushima, Danji. 1986. Preservation of traditional soy products. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 267-93. Held 16-18 Sept. 1986 in Jogjakarta, Indonesia. [25 ref]

• **Summary:** Contents: Abstracts. Soy sauce and miso. Soy milk, tofu, and their related products. References. Address: Food Research Inst., Kikkoman Co. Ltd., 339 Noda, Noda City, Chiba prefecture, Japan.

3046. **Product Name:** Sweet Cloud Sesame-Miso Munchies.

Manufacturer’s Name: Great Eastern Sun (Marketer-Distributor). Made in North Miami, Florida, by Sprout Delights Bakery.

Manufacturer’s Address: 92 McIntosh Rd., Asheville, NC 28806. Phone: 704-252-3090.

Date of Introduction: 1986. September.

Ingredients: Sweet Cloud Rice Syrup, crisp brown rice [like brown Rice Krispies], tahini, mellow white miso, pure vanilla, natural flavor.

Wt/Vol., Packaging, Price: 1.33 oz (38 gm) plastic bag. Retail for \$0.69 (11/91).

How Stored: Shelf stable.

New Product–Documentation: Soya Newsletter. 1987. Nov/Dec. p. 7. Talk with Bruce Sturgeon of GES. 1988. Jan. 27. Gave manufacturer and introduction date.

Product with Label purchased from Smoky Mountain Natural Foods, Asheville, North Carolina. 1991. Nov. 15. 2.75 by 4.5 inches. Plastic bag. Tan, black, dark red, and white on pink. Illustration of white clouds against a pink sky. “All natural.” Soyfoods Center product evaluation. 1991. Nov. 28. Chewy and delicious.

Talk with Steve Bern of Sprout Delights. 1992. July 11. He introduced other flavors of these Munchies in about 1985 or 1986, then later Great Eastern Sun got interested in them shortly after GES introduced Sweet Cloud Rice Syrup in a jar. Only the sesame-miso flavor contains miso.

3047. INTSOY. 1986. International Soybean Program (Leaflet). Urbana, Illinois. 3 panels each side. Front and back. Each panel: 23 x 10 cm. Undated.

• **Summary:** Printed golden yellow, green, and brown on white. On the front panel is an illustration of a man pouring soybeans into a mill, whence they flow into a bucket on the floor. The five illustrations in this leaflet are taken (without permission) from *The Book of Miso*, by Shurtleff & Aoyagi. Contents: Improving human nutrition with soybeans. A worldwide network. Whole soybean utilization—A major focus. A record of achievement. New products and processes. A program of mutual benefits. Contact us for further information. Address: International Soybean Program, Univ. of Illinois at Urbana, 113 Mumford Hall, 1301 W. Gregory Dr., Urbana, Illinois 61801.

3048. Katagiri, Mitsuaki; Shimizu, Sumio. 1986. Kaku-shu miso-chû no gasu kuromatogurafii ni yoru esuteru gata shibô-san, yuri shibô-san oyobi yûki-san no teiryô [Gas chromatographic determination of esterified and free organic acids in various kinds of miso]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 33(9):667-73. [16 ref. Jap; eng]

• **Summary:** Twenty misos were analyzed by gas chromatography. Contents of ethyl esters of fatty acids were about double the values previously reported by the celite method. Approx. 50% of the total fatty acids in the original glycerides were present as their ethyl esters in miso. Address: Dep. of Domestic Science, Iida Women’s Junior College, Matsuo 610, Iida-shi, Nagano 395, Japan.

3049. *MacroMuse*. 1986. Forum: Miso for infants and *MacroMuse* integrity—under fire. Sept. p. 29.

• **Summary:** Discussion of the “standard” macrobiotic recommendation to avoid giving salted foods to babies who are not yet walking. Jan Belleme believes that giving salt in miso is okay since it is different from straight salt.

3050. McSweeney, Daniel. 1986. Consumer survey 1986. *Whole Foods*. Sept. p. 39-40, 43.

• **Summary:** This survey appeared as a readership survey in the July 1986 consumer-directed *EastWest* magazine. The sample size is not given. The percentage of respondents who purchased a type of product at a natural foods during the past 12 months, in descending order of popularity and by sex: Grains: women 91.1%, men 84.4%. Tofu: women 85.8%, men 82.2%. Miso: women 72.3%, men 66.6%. Sea vegetables: women 68.2%, men 60.0%. Yogurt (dairy): women 48.8%, men 44.4%. Nondairy frozen desserts: women 45.8%, men 40.0%. Soy milk: women 41.1%, men 37.7%. Natural meat: women 10.0%, men 11.1%.

The top 5 reasons for shopping at natural foods stores are: Food quality (32.6%), better selection (21.8%), brands preferred (15.5%), helpful clerks (9.1%), individual food dept. (6.9%).

3051. Robertson, Laurel; Flinders, Carol; Ruppenthal, Brian. 1986. *The new Laurel’s kitchen: A handbook for vegetarian nutrition and cookery*. Berkeley, California: Ten Speed Press. 512 p. Foreword by Sheldon Margen, M.D. Professor of Public Health Nutrition. University of California, Berkeley. Illust. Index. 23 cm. Original ed. published Sept. 1976. [234* ref]

• **Summary:** Contents: Preface (by Laurel). Introduction: The work at hand (Carol Flinders). Recipes and menus (includes 500 recipes): Bread, breakfast, lunch, dinner, salads, soups, vegetables, sauces & such, heartier dishes, grains & beans, desserts, menus. A handbook of nutrition: Introduction: The search for an optimal diet (Brian Ruppenthal), *The New Laurel’s Kitchen* food guide. Special concerns: Pregnancy, infancy & early childhood, controlling your weight, nutrition in later years, sports (athletic activities), the vegan diet, diet against disease. The nutrients: The energy-yielding nutrients, vitamins & minerals, food processing, conserving nutrients in the kitchen, suggestions for further reading, recommended dietary allowances, nutrient composition of foods. Address: Blue Mountain Center of Meditation, Petaluma, California.

3052. **Product Name:** Vegemite. Concentrated Yeast Extract.

Manufacturer’s Name: Vegemite (Importer). Made in Australia.

Manufacturer’s Address: 16247 Illinois St., Paramount, CA 90723. Phone: (213) 633-2222.

Date of Introduction: 1986. September.

New Product–Documentation: Ad in Natural Foods Merchandiser. 1986. Sept. p. 81. “Vegemite gives food a mighty healthy flavor.” It has existed in Australia for over 65 years. Replaces high sodium bouillon cubes. “It adds zip to tofu.” An illustration of the jar and label is shown.

Ad (quarter page, black and white) in Whole Foods. 1987. May. p. 133. Company is now Australasia Ventures, 2882 Gundry Ave., Long Beach, CA 90806. Same ad as 1986.

3053. Winarno, F.G. 1986. Traditional fermented soyfoods. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 3-19. Held 16-18 Sept. 1986 in Jogjakarta, Indonesia. [36 ref]

• **Summary:** Contents: Introduction. Tempe. Some tempe products. Flavor and color of tempe. Tempe and wholesomeness. Tauco. Kecap (soy sauce).

“Tempe was formerly considered an inferior food in part because of its costs, compared to other protein foods such as meats, fish and eggs. Over the last 15 years the attitude towards tempe has changed. Today, more attention has been given to tempe because it is an inexpensive source of proteins, vitamins and calories. The total annual production of Indonesian tempe is about 500,000 tons. However, tempe production is still a household art. Most of the 41,000 small cottage industries that make fresh tempe daily are family run and employ about 128,000 workers. Each small cottage industry employs about 3 workers, and uses approximately 11 pounds (5 kg) of dry soybeans per day to produce 21 pounds (10 kg) of fresh tempe. The larger cottage industries employ 10 to 20 workers and use 600 to 1,000 pounds (500 kg) of dry soybeans per day to produce tempe. The average retail price of tempe is about US \$0.25 per kg in 1985.”

Figures: 1. Usar made using traditional Hibiscus leaves. 2. Flow sheet: Indonesian tempe process. 3. Material balances in pilot plant process for production of tempe. 4. Flow sheet of tauco processing. 5. Flow sheet of kecap processing. Address: Food Technology Development Center, Bogor Agricultural Univ., P.O. Box 61, Bogor, Indonesia.

3054. Barrett, Mariclare; Hayhow, Sally. 1986. The new rice foods. *Vegetarian Times*. Oct. p. 18-20, 22, 24-25.

• **Summary:** Contains a general description of the following: rice cream cereal, brown rice crackers, flour, miso, and ramen, mochi, rice vinegar, rice syrup, amazake, ‘ice cream’ (Rice Dream non-dairy frozen dessert), rice cakes, rice bran, miniature rice cakes, rice crisps, and quick cooking brown rice.

Concerning non-dairy ice creams: “One of the most unusual foods to emerge from the rice grain is rice ‘ice cream.’ Only one company is producing it now, but this low-fat, no-cholesterol ice cream look-alike may start a

revolution similar to the one launched by Tofutti for tofu-added frozen desserts.

“Rice Dream, as the product is called, is made from rice, water, rice culture, unrefined safflower oil, and vegetable-based stabilizers—plus various flavors. Notice that the list does not include sweeteners. The culturing of the rice releases so much natural sugar from the rice itself that no additional refined sweetener is needed.

“‘It took us a while to get the process down,’ admits Robert Nissenbaum, president of Imagine Foods, the company producing Rice Dream. ‘At first we used maple syrup to make the product sweet enough. In fact, some of our cartons still list maple syrup as an ingredient, but none of the flavors contain it any more. We finally perfected the process so the culturing broke down more of the complex rice carbohydrates to sugar.’

“The process used to make the base for Rice Dream is similar to the traditional Japanese amazake-making technique. The addition of modern technology has resulted in a sweet enough taste for the American palate and a more stable end product.

“The texture of Rice Dream is remarkably creamy—very similar to a high-quality ice milk. It holds up comparably in the freezer also. Not surprisingly, Rice Dream has a good nutritional profile for a snack food. A four-ounce serving has [130+ calories], 21 grams of carbohydrate, 5 grams of fat, 1 gram of protein, and no cholesterol. Haagen-Dazs, in comparison, has 268 calories, 17.2 grams of fat, and 24 grams of carbohydrate.”

3055. **Product Name:** Sweet Red Miso.

Manufacturer’s Name: Dragon Miso / Oasis Wholefoods. **Manufacturer’s Address:** Riverside Building, Staverton Bridge Mill, Staverton, S. Devon, England. Phone: 0803-865076.

Date of Introduction: 1986. October.

New Product–Documentation: Letters from I.J.

Mohammed. 1991. Sept. 30 and Oct. 13. I.J. Mohammed, owner of Dragon Miso, started to make this miso (i.e. to let it begin to ferment) in June 1986 at Staverton, South Devon. He first started to sell this miso in Sept/Oct. 1986 at Totnes, South Devon. It was at exactly that time (Sept/Oct. 1986) that Oasis Wholefoods was founded and started trading. At the outset, Oasis was jointly owned by I.J. Mohammed and Mr. Francis Checkley. When Oasis was founded, Dragon Miso and Lifestream Wholefoods (the latter owned by Mr. Checkley) gradually faded away, since Oasis required the full energy and resources of both men. “It is important to realize that in the U.K. there was a government allowance to start a new business. Therefore me and my ex-partner started two separate businesses (Dragon Miso and Lifestream Wholefoods) which never got off the ground. At about this time a company named Dragonfly, where I was working as a partner, was for sale and F. Checkley was

going to buy it. I was going to make the food as a 50% partner. That didn't happen due to idealistic differences, and so Oasis was born out of my head and F. Checkley's money. Since 1986 Dragonfly has been sold four times. I have tried to make Oasis into the main supplier of wholesome food to the community where I live. I will be moving into new premises shortly. The new name and address: Oasis Organic Wholefoods, Unit 1, South Gate Works, South Street, Totnes TQ9 5DZ, South Devon, England." The original address of Oasis Wholefoods was Unit 3C, Dart Complex, Steamer Quay Rd., Totnes, South Devon, England. "In Dec. 1987 Francis Checkley sold his share of the ownership of Oasis Wholefoods to me, so that I owned 100% of Oasis, as I still do. I felt like the father of the new project and Mr. Checkley was basically my financier. As far as I know Lifestream Wholefoods are no longer trading."

Label sent by I.J. Mohammed. 1991. Sept. 30. 3 by 2 inches. Pea green on yellow. Illustration of palm trees. The product name and ingredients have been stamped on in red with a rubber stamp to save money: "Dragon miso, sweet. Organic soya beans, rice koji, sea salt." By 1989 Oasis was making 20 kg a year (i.e., very little).

3056. Fangauf, K.W. 1986. Bedeutung der Sojabohne und Sojaprodukte fuer die Welternaehrung [Significance of the soybean and soya products for world nutrition]. *Schriftenreihe aus de Fachgebiet Getreidetechnologie* No. 8. p. 9-23. Sojaprodukte: Herstellung und Verwendung. [15 ref. Ger]

• **Summary:** Discusses history of the soybean, cultivation and composition, the world industry for soybean production, consumption, and products, world production of soy oil and competing oils, trends in the use of soy products (incl. soymilk and soymilk products, soy sauce, tofu, miso, and tempeh; table based on Shurtleff & Aoyagi 1983), results of Hamburg poll (American Soybean Assoc. 1982) on attitudes of German consumers toward qualities and use soya (e.g., price, nutritional value, good protein source, versatile, healthful, recommended by a doctor, good for young people), conclusion. Address: American Soybean Assoc., Hamburg, West Germany.

3057. Fujinami, H. 1986. Miso no hinshitsu hyōka to sono yōgo ni tsuite [Quality evaluation of miso and the terminology used therein]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 81(10):711-14. [Jap] Address: Chuo Miso Kenkyujo.

3058. Hosokawa, N.; Kato, H.; Nanba, T.; Kito, Y. 1986. Teishoku-en miso no tayō-ka [Diversification of salt-reduced soybean miso]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 81(10):688-92. [6 ref. Jap]

• **Summary:** Several trials were carried out to improve and make new types of salt-reduced miso employing

carbohydrate-rich ingredients such as pre-cooked rice, fermented broken rice mash, fruits (including orange, apple paste, strawberry, banana), tomato paste, grape juice, spices (such as ginger and caraway), and yeast. Address: Food Research Inst., Aichi prefecture, Japan.

3059. Kotsch, R.E. 1986. The pioneering spirit of Ohsawa-Japan: Japan's first macrobiotic company puts principles before profits. *East West*. Oct. p. 72, 74-75.

• **Summary:** In 1953 George Ohsawa "left Japan to teach the principles of macrobiotics in other lands. Several years later, after sojourns in India, Africa, Europe, and America, he returned to his homeland for a visit. When he saw that it had become almost impossible to procure traditional-quality foods in his own country, he urged some of his followers to become involved in farming and in food processing. He encouraged others to set up a company that would seek out existing producers of high-quality items and market their products in Japan and abroad. Thus was born Ohsawa-Japan, staffed by loyal disciples of Ohsawa and headed by his sister-in-law Flora Tanaka.

"From its inception Ohsawa-Japan was a company rich in ideals and slim in capital. As Yoshi Nanabayashi, its export manager, told me, 'We have always been, above all, a macrobiotic company. So our first concern has been to distribute only the highest-quality food, made according to strict standards. Considerations of cost and profit have always been secondary. Mr. Ohsawa taught that proper food is the key to the health and happiness of humanity. Our main aim has been to promote the health of individuals and of society, not to make a lot of money. And,' he added with a laugh, 'we have been fairly successful.'"

What the Tokyo-based company lacks in professionalism it makes up for in dedication to its ideals. From several score of traditional Japanese food producers (mostly small and family-run) around Japan, it gathers more than 100 products (including miso from Yamaki Miso Co., shoyu, and tamari), packages them, and distributes them to the small but strong network of macrobiotic stores and centers throughout Japan.

For years Ohsawa-Japan's "exclusive North American distributor was Chico-San, the natural foods company located in Chico, California. In 1984 Chico-San, which had thrived on its rice cake business, was sold to the H.J. Heinz Corporation. Six months later the import rights to the Ohsawa-Japan products were sold back to Chico-San's original owners, Herman Aihara and Bob Kennedy. At that point a new company, Ohsawa America, was set up to import and distribute the products of Ohsawa-Japan. Today that company, based in Chico, handles about seventy basic Japanese macrobiotic items...

"The main difficulty facing Ohsawa America is the high prices it must ask for its products. The cost of living in Japan is one of the steepest in the world... In addition, the

value of the yen has increased dramatically.” Lane Seiger is operations manager of Ohsawa America. As Joel Wollner notes, “Like Ohsawa-Japan, Ohsawa America is a philosophy-driven company.” Address: Staff.

3060. Lampert, Junko. 1986. The tofu cookbook: Recipes for traditional and modern cooking. Chronicle Books, 1 Hallidie Plaza, Suite 806, San Francisco, CA 94102. 97 p. Illust. Index of recipes. 26 cm. [Eng]

• **Summary:** Includes 55 recipes and many color photos. Address: Japan.

3061. Moll, Lucy; Barrett, Mariclare. 1986. Then and now: Authors of the best [vegetarian] cookbooks. *Vegetarian Times*. Oct. p. 26-31, 46, 54. [10 ref]

• **Summary:** Includes: The Hurd’s and Ten Talents, Ed Brown and The Tassajara Recipe Book, Francis Moore Lappé and Diet for a Small Planet, Louise Hagler and The Farm Vegetarian Cookbook plus Tofu Cookery, Annemarie Colbin and The Book of Whole Meals, Mollie Katzen and The Moosewood Cookbook, William Shurtleff & Akiko Aoyagi and The Book of Tofu, Laurel Robertson and Laurel’s Kitchen, Kathy Hoshijo and Kathy Cooks Naturally, Anna Thomas and Vegetarian Epicure. Address: Chicago, Illinois.

3062. *Toyo Shinpo (Soyfoods News)*. 1986. Yooroppa de miso buumu. Hatsu gan bôshi ni kôka. Gen hatsu jiko irai kyuzo [Miso boom in Europe after Soviet nuclear accident. Effective in preventing cancer]. Nov. 1. p. 1. [Jap; eng+]

• **Summary:** Orders from Sendai Miso Shoyu jumped sevenfold after the Chernobyl nuclear accident on 26 April 1986 in the Ukrainian SSR.

3063. Burum, Linda. 1986. Breakfast in Chinatown and other Asian spots. *Los Angeles Times*. Nov. 16. p. S106.

• **Summary:** The section titled “Japanese” begins: “Amid the jangle of downtown traffic, A Thousand Cranes is an oasis of flagging civility.” This lovely, calm restaurant, with its own stylized Japanese garden, is in the New Otani Hotel, at 120 S. Los Angeles St., Los Angeles. Dressed in a classical kimono, the waitress brings breakfast on a lacquered tray. On it is a covered bowl of miso soup, plus rice and other delicacies. “One may select from several other *okazu* (the things to eat with rice) such as squares of delectably garnished and very fresh *tofu* or *natto*, a little mound of flavorful fermented bean” [sic, beans].

“A jar of *umeboshi*, the mouth puckering tiny sour plums known as nature’s own mouthwash, is placed on each table; one of these cleanses the palate.”

The section titled “Chinese” begins with a visit to Yi Mei, a very good traditional Chinese bakery in Monterey Park (near downtown Los Angeles), known for its “Northern-style breakfasts centering on large bowls of soy

milk that may be ordered slightly sweetened or seasoned with a dash of sesame oil and salt. Look around and watch everyone dipping *yu t’iao*, long, airy fried buns that resemble unsweetened crullers, into their soy milk.” The crullers soak up the soy milk, then everyone noisily (its impossible to do this quietly) eats the crullers.

3064. Barrett, Mariclare. 1986. The cook’s glossary of soyfoods. *Vegetarian Times*. Nov. p. 28-35. [10 ref]

• **Summary:** Gives good definitions, with a full-page color illustration by Emily Soltanoff, of: Soybeans, soynuts, soy flour and grits, soy oil, textured vegetable protein, soymilk, okara (“the pulp that remains after the soymilk has been strained”), soy yogurt and soy cheese, tofu, fermented soyfoods, tempeh, miso, natto, soy sauce.

The article begins: “For 60 seconds on a national television commercial, a small, round soybean rolls past a lineup of infant formula, bread, pizza, chili, salad dressing, ice cream [Tofutti], soymilk and cubes of tofu; meanwhile the narrator intones, ‘The newest development in nutrition is actually one of the oldest foods known to man.’ Through advertising, the concept of soyfoods is brought home to millions of Americans by the soy giant, Archer-Daniels-Midland Company.” Address: Staff.

3065. Great Eastern Sun; American Miso Co. 1986. Miso Master (Ad). *East West*. Nov. p. 81.

• **Summary:** A full-page black, white and blue glossy ad for Miso Master products. “The miso master is truly one of Japan’s national treasures.” Address: Asheville, North Carolina 28806. Phone: (704) 252-3090.

3066. Hayashi, Ken-ichi; Sakaguchi, S.; Sakaguchi, G. 1986. Primary multiplication of *Clostridium botulinum* type A in mustard-miso stuffing of ‘karashi-renkon’ (deep-fried mustard-stuffed lotus root). *International J. of Food Microbiology* 3(6):311-20. Nov. [11 ref. Eng]

• **Summary:** In June 1984 a large scale outbreak of type A botulism occurred in 14 prefectures in Japan, involving 36 cases and 11 deaths due to consumption of vacuum packed karashi-renkon. The causative organism may well have been *Clostridium botulinum*. Address: 1. Shiga Prefectural Inst. of Public Health, 13-45 Gotenhama, Ohtsu-shi, Shiga 520; 2-3. College of Agriculture, College of Agriculture, Univ. of Osaka Prefecture, Sakai-shi, Osaka 591, Japan.

3067. **Product Name:** [Kikkoman Instant Wakame Soup (Seaweed Soup with Miso)].

Manufacturer’s Name: Kikkoman Corporation.

Manufacturer’s Address: Noda 278, Chiba-ken, Japan.

Date of Introduction: 1986. November.

New Product–Documentation: Spot in Food & Beverage Marketing. 1986. Nov. p. 12, 60.

3068. McMath, Bob. 1986. Hot products: Japanese foods 'stir' up interest. *Food & Beverage Marketing*. Nov. p. 12, 60.

• **Summary:** Soyfoods included in the Kikkoman instant soup mix line are Osuimono (Japanese Clear Broth), Aka Miso Soup (Soybean Paste Soup—red), Shiro Miso Soup (Soybean Paste Soup—white), Tofu Miso Soup, and Wakame Soup (Seaweed Soup, a color photo of which is shown). Each packet contains 3-4 individual servings and retails for \$1.19 to \$1.39.

3069. *Vegetarian Times*. 1986. Top entries in the Vegetarian Times soyfoods recipe contest: The winners! Nov. p. 36-39.

• **Summary:** Some 125 recipes were submitted to the contest. The full recipe for each of the winners is given. For main dishes, the first prize went to Messilla Valley Tempitas (with tempeh), the second prize to Tofu Slices with Mushrooms, and the third prize was a tie between Kid's Favorite Tofu Loaf, and Tofu Manicotti with Sesame-Miso Sauce.

For desserts, the first prize went to Tofu Cheesecake, the second prize to Cranberry-Walnut Baked Apples with Maple-Custard Sauce (with soymilk), and the third prize to Creamy Peach Rice Pudding (with tofu).

In the "Other" category, first place winner was Smoked Tofu with Dipping, 2nd place was Bombay Chowder, and 3rd place was Tofu-Shallot Dip.

A color photo by Katherine Phelps shows the dish that won first place in each category.

3070. Fujii, Hisao. 1986. Nattô no nenshitsu-butsumu, nioi, fureebaa to bisei-butsumu [Microbial formation of mucilaginous compounds, odor, flavor, and microorganisms in natto]. In: Kô Aida, et al. eds. 1986. Proceedings of the Asian Symposium on Non-Salted Soybean Fermentation. Japan: Takeshima Shigeru. 319 p. See p. 219-33. Held July 1985 at Tsukuba, Japan. English-language summary in Symposium Abstracts, p. 70. [35 ref. Jap]

• **Summary:** Tables and figures in English include: Properties of *Bacillus natto* Sawamura. Mucilage produced from various beans. Mucilage produced from parts of soybean. Separation of natto mucilage. Analysis of natto mucilage. Effect of nitrogen on the growth and mucilage formation by *B. natto*. Effect of amino acid on growth and stringy slimy production. Effect of nitrogen source on slime composition. Amino acid composition per 100 gm edible portion of pulses. Hydrolytic products of polyamine derivatives of gamma and alpha linked peptides. Possible scheme for origin of PGA by enzymes found in *B. subtilis*. Effect of optical isomers of glutamine and glutamic acid on transamidase obtained from *B. natto*. Phage host range against the parental and cured strains, and representative transformants. Levan synthesis by levansucrase of *Aerobacter levanicum*.

Effect of medium composition of viscosity of mucilage. Viscosity of polyglutamate and levan. Soybean carbohydrates. Effect of sucrose on mucilage stability. Detection of phage from natto products. Inhibition of natto mucilage formation by added phage. PGA-digesting activity of phage lysate. Change of nitrogen compounds during fermentation. Liberation percentage of amino acids in raw and steamed soybeans, and products fermented 8 or 16 hours. Distribution of Tetramethylpyrazine (TMP) in Japanese fermented foodstuffs (miso is highest). Address: Fukuoka Joshi Daigaku.

3071. Haytowitz, David B.; Matthews, Ruth H. 1986. Composition of foods: Legumes and legume products. Raw, processed, prepared. *USDA Human Nutrition Information Service, Agriculture Handbook No. 8-16*. 156 p. Dec. See p. 126-152. By Nutrition Monitoring Division. [29 ref]

• **Summary:** Data are presented for 133 legumes and legume products. Of these, only 53 were included in *USDA Agriculture Handbook No. 8*, published in 1963. The following soy-based foods are included: Simulated meat products (bacon, meat extender, and sausage), raw soybeans, cooked boiled soybeans, roasted soybeans, dry-roasted soybeans, soybean products: miso, natto, tempeh, full-fat soy flour (raw, and roasted), defatted soy flour, low-fat soy flour, defatted raw soy meal, fluid soy milk, soy protein concentrate, soy protein isolate, soy sauce (shoyu, tamari, and HVP), raw tofu (firm {p. 147}, regular, dried-frozen/koyadofu, and fried) [Note 1. Tofu is called "tofu" and at "Soybean curd" it says, see "tofu." Note 2. Footnote 2 states that the calcium content of tofu curded with calcium sulfate is 683 mg/100 gm, compared with 205 mg/100 gm for tofu curded with nigari. As of May 1997 Soyfoods Center believes that both these values are far too high; the two figures should be about 159 mg/100 gm (range 128-168) and 45 mg/100 gm respectively], okara, salted and fermented tofu (fuyu).

For each food the following information and number of values are given: Vertically: Proximate (7 values), Minerals (9), Vitamins (9), Lipids (Fatty Acids [Saturated (9), Monounsaturated (5), Polyunsaturated (7)], Cholesterol, Phytosterols), Amino acids (18). Horizontally: Amount in 100 gm edible portion (mean, standard error, number of samples), amount in edible portion of common measures of food (e.g. ½ cup or 1 cup), amount in edible portion of 1 lb of food as purchased.

Minerals include calcium, iron, magnesium, phosphorous, potassium, sodium, zinc, copper, and manganese (not aluminum).

Vitamins include ascorbic acid, thiamin, riboflavin, niacin, pantothenic acid, vitamin B-6, folacin, vitamin B-12, vitamin A.

Amino acids include tryptophan, threonine, isoleucine, leucine, lysine, methionine, cystine, phenylalanine, tyrosine,

valine, arginine, histidine, alanine, aspartic acid, glutamic acid, glycine, proline, and serine.

For Adzuki beans (raw, cooked boiled, canned sweetened, and Yokan {yōkan-sugar-sweetened confection}) see p. 24-27.

For peanuts (all types raw, cooked boiled, oil-roasted, dry-roasted, Spanish raw, Spanish oil-roasted, Valencia raw, Valencia oil-roasted, Virginia raw, Valencia oil-roasted) see p. 109-18. For peanut butter (chunk style, smooth style), defatted peanut, and low-fat peanut flour, see p. 119-22. Address: USDA Human Nutrition Information Service.

3072. Kitada, Yoshimi; Mizobuchi, M.; Ueda, Y.; Yamamoto, M.; Ishikawa, M.; Kawanishi, S. 1986. Miso seizō ni okeru daizu jōsha-eki kara no isofurabon yūdō-tai no kaishū [Recovery of isoflavones from soybean cooking liquid of a miso factory]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 33(12):821-25. Dec. [10 ref. Jap; eng]

• **Summary:** Isoflavones such as daidzin, daidzein, genistin, and genistein were recovered using 5 types of adsorbents, of which Diaion HP-20 was the most effective. Address: Nara Prefectural Inst. of Public Health, 58-6 Ohmori-cho, Nara 630, Japan.

3073. Kozaki, Michio. 1986. Monsuun Ajia no hakkō shokuhin [The fermented foods of monsoon Asia]. In: Kō Aida, et al. eds. 1986. Proceedings of the Asian Symposium on Non-Salted Soybean Fermentation. Japan: Takeshima Shigeru. 319 p. See p. 5-8. Held July 1985 at Tsukuba, Japan. [Jap]

• **Summary:** A general review, including many fermented foods not containing soy. Address: Dep. of Agriculture, Tokyo Univ. of Agriculture.

3074. **Product Name:** Creamy Miso Dressing [Sesame, Mustard, or Vinaigrette].

Manufacturer's Name: Simply Natural, Inc.

Manufacturer's Address: P.O. Box 295 (Evelyn and Gershel Avenues), Norma, NJ 08347.

Date of Introduction: 1986. December.

Ingredients: Sesame: Organic light miso, unrefined sunflower oil, filtered water, apple cider vinegar, barley malt, toasted sesame oil.

Wt/Vol., Packaging, Price: 12 oz jar.

How Stored: Shelf stable; refrigerate after opening.

Nutrition: Sesame, Per ounce: Calories 86, fat 1.5 gm, sodium 136 mg.

New Product-Documentation: Spot in Vegetarian Times. 1987. March. p. 67. These feature mellow miso. Leaflet. 1987. Shows Label. These dressings are made from the mellow white miso in which their Soft Tofu Cheese is fermented. Brochure. 1987. Oct. "Discover the New Simply Natural and Rediscover Natural Cuisine." Introduces

Soyalite (formerly Soft Tofu Cheese), Pasta Lite (formerly Tofu Pasta), and Miso Dressing. Explains why the names were changed and shows labels. Red on white. 4 pages. Ad in Vegetarian Times. 1988. May. p. 58. "Everything Your Heart Desires."

3075. **Product Name:** Wasabi Chips (Seasoned with Wasabi Miso).

Manufacturer's Name: Soken Trading, Inc. (Importer). Made in Japan.

Manufacturer's Address: P.O. Box 760, Mill Valley, CA 94942.

Date of Introduction: 1986. December.

Ingredients: Incl. vegetables, four kinds of seaweed, wasabi miso, sea salt.

Wt/Vol., Packaging, Price: Cellophane bags.

How Stored: Shelf stable.

New Product-Documentation: Spot in Food Distributors Magazine (Clearwater, Rhode Island). 1986. Dec.

3076. Yoshida, Shuji. 1986. Minzokugaku kara mita muen hakkō daizu to sono shūhen [The origin of non-salted fermented soybeans from the viewpoint of ethnology]. In: Kō Aida, et al. eds. 1986. Proceedings of the Asian Symposium on Non-Salted Soybean Fermentation. Japan: Takeshima Shigeru. 319 p. See p. 166-78. Held July 1985 at Tsukuba, Japan. English-language summary in Symposium Abstracts, p. 62-62. [20 ref. Jap]

• **Summary:** "Two of the earliest kinds of fermented soybeans were *shì* and *dòu-jiàng*. The former antedates the latter, because *shì* can be traced to the Han Dynasty (206 BC-A.D. 200), whereas *dòu-jiàng* does not emerge until the description in *Qimin Yaoshu* (A.D. 536-550). Good descriptions of *shì* and *dòu-jiàng* are given in *Qimin Yaoshu*. *Shì* is made as follows: A yellow mold is permitted to grow on boiled beans, which are then washed and wetted, after which they are fermented in a cellar for 10-12 days. *Shì* was eaten as a condiment.

"However, *shì* as a food would have appeared prior to *shì* as a condiment. *Sake* which was made from grain through mold fermentation, was originally not for drinking, but rather for eating. Such a primitive *Sake* is still used in Yúnnán. I suppose that a primitive *shì* also was eaten, and that the place of origin of *shì* was South China, according to the description in *Bencao Gangmu* (*shì* was commonly made in South China), and *Bówùzhì* (*shì* was exotic).

"*Dòu-jiàng*, which may have been first mentioned in *Bencao Gangmu* (1596), was a simple mold bean and was technologically more primitive than *shì*, although the existence of *dòu-jiàng* or a similar substance cannot be traced in the literature before *Qimin Yaoshu*. It seems that the first product of fermented beans would be *dòu-jiàng*, or a similar substance, and that its making would have been influenced by *sake* production. Later, *shì* as a food would

have appeared and then *shì* as a condiment was produced, as we see from the *Qimin Yaoshu*.

“On the other hand, *dòu-jiàng* was developed from *ròu-jiàng*, preserved meat... *Natto*, *kinema* and *tempeh* would be identified as a substance similar to *dòu-jiàng*, which was a primitive fermented soybean product. Boiled beans became *dòu-jiàng* if they were covered by *Imperata cylindrica* grass, *kinema* if covered by certain leaves, *tempeh* if covered by leaves of *Hibiscus tiliaceus* or banana leaves, and *natto* if covered by ricestraw.

“We know that various kinds of plants are used for making *sake* or mold bran. The species used varies by place. Fermented soybeans occur within the *sake*-making area and only at the margin of the distribution. That means several new fermented soybean products like *shì* and *dòu-jiàng* were made in the center of the fermented soybean distribution, and the area gradually expanded toward the margins. They were accepted in areas close to the center, but the most primitive forms would have remained only in the marginal places, where new ones were not accepted.”

A large chart (p. 169) shows the relatives and development of soy nuggets (*shi*); it includes the names of various unsalted fermented soyfoods and soy condiments (with their geographical area in parentheses). Relatives (fermented soyfoods made from yellow soybeans): Akuni (Sema Naga, in the Himalayas in northeast India), kinema (Limbu, in eastern Nepal), pe-bout (Shan, in eastern Burma), itohiki natto (Japan), and tempeh (Indonesia). Stage 1. Itohiki natto became Chon Kujjiang [perhaps *chungkuk jang*, Korean-style natto] of the Zhanguo Warring States period (475-221 BC) in China. Stage 2A: Unsalted soy nuggets were originally used as a food, rather than as a seasoning. To these unsalted soy nuggets, koji was added to create homemade unsalted soy nuggets (*doushi*, of China). Stage 2B: Salt was added to the unsalted soy nuggets to make various salted foods (each with a firm texture like raisins): Daitokuji natto (Japan; with wheat flour added), *pe-ngapi* (upper Burma), and *seang* (Cambodia). Stage 3. Unsalted soy nuggets (*doushi*) developed into closely related danshi. Koji was added to danshi to make *rul-kre* (of Bhutan). Cooked soybeans were shaped into balls and fermented naturally to make miso-dama (“unsalted miso balls” [meju], Korea and Japan). Then salt was added to the miso-dama to make various seasonings (each with a consistency like applesauce or paste / miso): Korean soybean *jang* (*doen jang*), Korean soy sauce (*kan jang*), or soybean miso (*mamé miso*, Hatcho miso, Japan). Stage 4. Salt was added to unsalted soy nuggets (*shi*) to make salted soy nuggets, from which developed inyu (a fermented soy sauce made with black soy beans, in Taiwan), *inshi* (meaning unclear, of Taiwan), and *tauco* (*tauco*, of Indonesia). Stage 5. Koji was added to salted soy nuggets to make *shi* for food use, and *doushi* (of Sichuan, China). Stage 6. Flour was added to salted soy nuggets to make red

pepper *jang* (*kochu jang*, Korea) and spicy soy nuggets (*doubanshi*, China).

Note: This chart may be easier to understand when viewed in chart form, however the logic and some of the products seem a bit unclear. It is also unclear which products are fermented with bacteria (like natto). Soyfoods Center has an English-language translation of this chart. Address: National Museum of Ethnology, Osaka (Kokuritsu Minzokugaku Hakubutsukan).

3077. Hosotani, K.; Mori, M. 1986. [Propionic acid contents in foods]. *Nippon Eiyō Shokuryō Gakkaishi (J. of the Japanese Society of Nutrition and Food Science)* 39(3):231-33. [6 ref. Jap; eng]*

• **Summary:** *Webster's Dictionary* defines propionic acid (a term first used in 1850) as “a liquid sharp-odored fatty acid C₃H₆O₂ found in milk and distillates of wood, coal, and petroleum.” It is also produced as a metabolite of microorganisms. The propionic acid content of miso was 2-5 mg/kg and of soy sauce was 2.7-6.0 mg/kg. This compared with 5-9 mg/kg for dairy milk. Address: Dep. of Home Economics, Wakayama Univ., Wakayama 640, Japan.

3078. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)*. 1986. Miso. 33:263-69. [Eng; jap]*

3079. **Product Name:** Noble Bean Tempeh and Tahini Spread (Savory Spread for Sandwich or Dip with Umeboshi Plums).

Manufacturer's Name: North Coast Tempeh Co.

Manufacturer's Address: 18320 Euclid Ave., Cleveland, OH 44112.

Date of Introduction: 1986.

Ingredients: Tempeh (Organic soybeans, water, *Rhizopus* culture), tahini, onion, parsley, barley miso, lemon juice, umeboshi paste, cider vinegar, olive oil, garlic powder.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

New Product-Documentation: Label. 1987. Oval 4 by 2.75 inches. Blue, red, green, and yellow on white. Jeff Narten. 1987. “History of North Coast Tempeh and its Products.” 4 p. Dec. 7.

3080. **Product Name:** Noble Bean Bogie Roll (Pita Pocket with Tempeh).

Manufacturer's Name: North Coast Tempeh Co.

Manufacturer's Address: 18320 Euclid Ave., Cleveland, OH 44112.

Date of Introduction: 1986.

Ingredients: Whole wheat pita, dill pickle, Tempeh and Tahini Spread (Tempeh [organic soybeans, water, *Rhizopus* culture], tahini, onion, parsley, barley miso, lemon juice,

umeboshi paste, cider vinegar, olive oil, garlic powder), and sprouts.

Wt/Vol., Packaging, Price: 5 oz.

How Stored: Unrefrigerated and perishable.

New Product–Documentation: Label. 1987. Oval 4 by 2.75 inches. Red, green, blue, and yellow on white. Jeff Narten. 1987. “History of North Coast Tempeh and its Products.” 4 p. Dec. 7.

3081. Ogura, M.; Okudaira, T.; Honma, E. 1986. [Use of rice flour for production of candied white miso]. *Kagawa Prefectural Fermentation and Food Experiment Station, Annual Report No. 79*. p. 15-19. [2 ref. Jap]*

Address: Kagawa Prefectural Fermentation and Food Experiment Station, Kagawa, Japan.

3082. Ogura, M.; Okudaira, T.; Honma, E. 1986. [Studies on the use of enzyme preparations for making miso. VII. Changes of pyroglutamic acid contents in yellow-red salty miso made at various temperatures]. *Kagawa Prefectural Fermentation and Food Experiment Station, Annual Report No. 79*. p. 10-14. [1 ref. Jap]*

Address: Kagawa Prefectural Fermentation and Food Experiment Station, Kagawa, Japan.

3083. **Product Name:** Misos: Yamaki Organic Misos (Barley, Brown Rice, Soybean), or Tateshina Sweet Misos (Barley, Rice, Soybean).

Manufacturer’s Name: Ohsawa America (Importer). Made in Japan.

Manufacturer’s Address: P.O. Box 3608, Chico, CA 95927.

Date of Introduction: 1986.

New Product–Documentation: Ohsawa America Macrobiotic Foods Catalog. 1986. Ad in East West. 1987. April. p. 27. “Ohsawa-Japan & Ohsawa America—Guided by a Philosophy for Life. Ohsawa America imported products are provided by our companion company, Ohsawa-Japan. Founded more than 35 years ago by George and Lima Ohsawa...”

3084. Ontario Soya-Bean Growers’ Marketing Board. 1986. Ontario soybeans in Japan (Color videotape). Chatham, Ontario, Canada. 23½ minutes. Undated.

• **Summary:** Shows how Ontario soybeans are used to make tofu, miso and natto in Japan. Includes interviews with end users who make tofu, miso, and natto.

Note: This is the earliest known videotape about soy or tofu owned by Soyfoods Center. Address: Chatham, Ontario, Canada.

3085. Sung, S.K.; Lee, C.M.; Young, J.D.; Chen, C.N. 1986. High levels of tyramine in some Chinese foodstuffs. *Human Psychopharmacology* 1(2):103-07. [17 ref]*

• **Summary:** Tyramine was assayed by high pressure liquid chromatography (HPLC) in 9 common Chinese foods including soy sauce, fermented soybean, fermented bean curd, red fermented bean curd, chili soybean paste, soybean paste, and preserved vegetables. Contents were highest in fermented soybean and fermented bean curd. Results are discussed in terms of hypertensive risk for patients taking monoamine oxidase inhibitors.

Note: *Webster’s Dictionary* defines tyramine (derived from tyrosine + amine) as “a phenolic amine C₈H₁₁NO that has a sympathomimetic action and is derived from tyrosine.” It defines sympathomimetic as “simulating sympathetic nervous action in physiological effect.” Address: Dep. of Psychiatry, Chinese Univ. of Hong Kong, Shatin, N.T., Hong Kong.

3086. Truesdell, Delores Desear. 1986. Vitamin B-12 content of miso and tempeh. MSc thesis, Florida State University. vi + 74 leaves. 29 cm. *

• **Summary:** Includes bibliographic references (leaves 58-74).

3087. Chang, Wonona W.; Chang, Irving B.; Kutscher, Austin H.; Kutscher, Lillian G. 1986. Chinese dessert, dim sum & snack cookbook. New York, NY: Sterling Publishing Co., Inc. 160 p. Illust. (color photos). Index. 26 cm.

• **Summary:** “Many of the dessert recipes in this book have been prized as family treasures for generations and are authentic; others have been adapted to the Chinese cuisine by the addition of oriental ingredients...” (p. 7).

The “Guide to ingredients” has interesting entries for “Bean curd or tofu (*dow foo*)” and “Bean filling, sweet (*Cantonese: dow sa*) (*Mandarin: do sa*)” (“Color: red {kidney beans [azuki]}, green {mung beans}. Available form: canned. When available: most commonly at Chinese New Year. Where purchased: Chinese bakery or grocery,” p. 13), and for “Hoisin sauce (Red seasoning sauce) (*hoi sin joing*) (*hai hsien jiang*)” (p. 16).

Desserts: Doughnut slices with Chinese flavors (with “sweet bean paste” [probably *an*, made with azuki beans, p. 33). Glutinous (sweet) rice cake (with “1 lb. black bean paste (*dow sa*),” p. 33). Fried bean paste pancake (with “4 oz. bean paste,” p. 40). Lychee peach tofu cooler (with “8 oz. tofu,” p. 56). Soybean milk (homemade recipe with “1 cup soybeans,” p. 58). Red bean paste ice cream (with “1 cup sweetened red bean paste” [azuki], p. 64). Lychee tofu custard (with “8 oz. tofu,” p. 91). Strawberry tofu pudding (with “6 oz. chilled tofu,” p. 91). Peach tofu custard (with “8 oz. tofu,” p. 93). Mandarin oranges with tofu (with “6 oz. Chinese-style tofu,” p. 93). Ginger sweet red bean dessert / spread (with “½ cup sweet bean paste” [azuki], p. 106). Orange tofu icing (with “12 oz. tofu,” p. 107). Sweet red bean dessert sauce (with “½ cup sweetened red bean paste” [azuki], p. 110).

Dim sum and snacks: New Year dumplings with sweet black bean paste (with “½ cup sweet black bean paste (*dow sa*),” p. 113). Bean paste sesame balls (with “sweet black bean paste,” p. 118). Dow sa won ton (“Prepare the same as Fried Won Tons {p. 139} except use *dow sa* (black bean paste) as a filling... Dow sa is available at Chinese bakery shops, p. 140).

About the authors (p. 146). Address: 1-2. Morristown, New Jersey; 3-4. Scarsdale, New York.

3088. Chiao, J.S. 1986. Modernization of traditional Chinese fermented foods and beverages. *Mycologia Memoir* No. 11. p. 37-53. Chapter 3. (C.W. Hesseltine and Hwa L. Wang, eds. Indigenous Fermented Food of Non-Western Origin. Berlin & Stuttgart: J. Cramer). [22 ref]

• **Summary:** Published in 1981 in *Advances in Biotechnology* 2:511-16. Contents: Introduction. Varieties of traditional Chinese fermented foods and beverages: Soy products include: Soy sauce (4-6 month fermentation), soy sauce by Gun-tou method (no wheat is used, 1 year fermentation, new batch concentrated for 1-2 months under the sun), soy paste, sufu, red sufu (with qu = chu = Chinese-style koji added), tou-si (made from black soybeans and salt, fermented with *Aspergillus oryzae* for 10-12 days). There are also many white spirit fermentations. “Wine was made in China as far back as 4,000 years, and white spirits made their appearance in the 13th century. Li-shi-zheng of the Ming Dynasty gave a description of the distillation process in detail in his famous Ben-Chao-Gong-Mu. Nowadays the alcohol content ranges from 40-65%.

In 1970 the San-jia Starch Factory in I-Chang, Hupeh, used liquid proteinase for a new soy sauce process using the waste water from starch processing, thus simplifying the ordinary soy sauce process. But this product was inferior in color, taste, and flavor to regular soy sauce made by a solid substrate fermentation. In 1976 and 1979 the Experimental Plant of the Shanghai Grain and Oil Industry Co., by selecting mutant strains of *Aspergillus oryzae* having high proteinase potency, was able to get an improved soy sauce (though still not as flavorful as regular soy sauce) using the liquid proteinase process. A flowchart is shown. Address: Dep. of Microbiology, Shanghai Inst. of Plant Physiology, Academia Sinica, Shanghai, China.

3089. Colbin, Annemarie. 1986. Food and healing. New York, NY: Ballantine Books. 351 p. Foreword by Robert S. Mendelsohn, M.D. Index. 23 cm. [207* ref]

• **Summary:** A very interesting, wholistic look at food trips and philosophies—with a preference for macrobiotics. Discusses miso, natto, tempeh, and tofu. Pages 169-72 discuss beans, including soybeans. Beans are said to be contractive, acid-forming, warming, and a buildup food. “Folklore has it that appreciable quantities of soybeans and their products, especially tofu, can lower, or cool, sexual

energy. Research done at the universities of Illinois and Kansas has shown that soybeans may interfere with the absorption of zinc. As zinc is one of the minerals most strongly associated with the healthy functioning of the sex glands, this bit of folk wisdom appears realistic.”

Chapter 12, titled “Food as Medicine,” discusses healing foods and tells how to prepare them, including miso soup (p. 253; contractive, alkalizing, warming, breakdown). Miso soup is considered a good food to help cure the common cold, to neutralize the negative effects of excess sugar consumption, and to combat problems of inflammation of the digestive tract (ulcers, colitis, spastic colon, etc.); ulcers are problems of excess acidity.

Chapter 14, titled “The Effects of Food on Sex,” notes that “Scientific studies have found that individual foodstuffs have an effect on sexuality via their chemical constituents... soybeans (including tofu) contain traces of antithyroid factors; as the thyroid regulates sexual desire, activity, and fertility, when consumed in large enough quantities these foods could possibly inhibit sexuality by lowering thyroid energy. Oriental folk rumor, which I’ve been unable to verify, has it that tofu ‘cools the sex organs’ and is used by monks for the specific purpose of aiding them in maintaining celibacy. In this light, it’s interesting to note that the traditional Japanese diet, high in thyroid-depressing soybean products, also contains appreciable amounts of seaweeds, rich in thyroid-stimulating iodine.”

In the Foreword, Dr. Mendelsohn writes: “Coming from a background of modern medicine, I, as well as hundreds of thousands of other M.D.s, was carefully educated in nutritional ignorance—indeed in disdain for food. The hospital ‘dietician’ was not—and is not even today—a teacher of physicians. The dietician’s traditional purpose in life has always been to serve as a ‘referral’ for a patient who bothered the physician with too many questions about food. The very title of this book *Food and Healing* represents a joining of two concepts that most doctors regard as unrelated.”

A photo (p. 351) shows Annemarie, who was born in Holland and brought up in Argentina on a European vegetarian diet. After her arrival in the United States in 1961, she was introduced to macrobiotics. She lives in New York City with her two daughters, and directs the Natural Gourmet Cookery School there. Address: 365 West End Ave., New York City, NY 10024. Phone: 212-580-7121.

3090. Committee for Soybean (The). 1986. The Philippines recommends for soybeans. Los Baños, Laguna, Philippines: Philippine Council for Agriculture and Resources Research and Development. 111 p. Technical Bulletin Series No. 14A. Revision of 1976 edition. [51 ref. Eng]

• **Summary:** Written by The Soybean Committee (Dr. Florendo C. Quebral, a plant pathologist at UPLB, chairman), this work focuses on recent technologies for

soybean production. A foreword by Ramon V. Valmayor, Executive Director of PCARRD, notes: "The importance of soybean has been stressed continuously. To encourage its widespread production, the Ministry of Agriculture and Food (MAF) launched the Soybean Production Program in Mindanao. Likewise, PCARRD initiated and coordinated the implementation of Soybean Pilot Production Project in 1983 to demonstrate the feasibility of growing soybean profitably in Luzon."

Contents: Foreword. Acknowledgments. The Soybean Committee. Introduction. Production management. Marketing. Soybean cropping system. Crop protection. Seed production. Processing and utilization: Raw materials for industry, soybean as food. References. Appendixes. List of tables. Lists of figures.

Table 1 shows soybean production in the Philippines from 1974 to 1985. Area in hectares grew from 2,780 ha in 1974 to a peak of 11,250 ha in 1976 and was 8,479 ha in 1985. Production grew from 2,214 tonnes in 1974 to a peak of 11,466 tonnes in 1982 and was 8,430 tonnes in 1985. Yield grew from 0.80 tonnes/ha in 1974 to a peak of 1.05 in 1982 and was 0.99 in 1985. Local production does not begin to supply local demand. In 1984 380,691 tonnes of soybeans and products were imported. Most of the imports were soybean meal.

Table 2 shows imports and exports of tausi (salted, fermented soybeans), oil cake (huge imports), soy sauce (large exports), soy oil (refined; large imports), soybean paste, taho (soymilk curds, often sold topped with a little brown sugar), bean cheese (tokwa [tofu]), hypoallergenic soy food, crude soy oil. Page 50 shows all current uses of soybeans in the Philippines, and p. 51 gives the nutritional composition of Philippine soyfoods. Note the terms Geerligs cheese (Tahu; 92.7% moisture and 2.9% protein), Soybean curd (Tahuri; 61.3% moisture and 11.4% protein), Fermented soybean cheese (Tausi; 51.5% moisture and 13.8% protein), and Soybean cheese (Tokwa; 77.0% moisture and 12.9% protein).

Recipes are given for preparing soy sauce, miso, tahu (soymilk curds), tokwa (soybean cheese, or firm tofu), tao-si (salted, fermented soybeans), soybean milk, and soybean coffee. Descriptions are given for sufu, tempeh, soy flour and grits, soy protein concentrates and isolates.

Note: In the section on nutritional composition, two words are incorrectly defined. The term "Tahuri" actually refers to tofu in brine, and "tausi" refers to salted, fermented soybeans. Address: PCARR.

3091. Ebine, H. 1986. Miso. In: N.R. Reddy, M.D. Pierson, and D.K. Salunkhe, eds. 1986. Legume-Based Fermented Foods. Boca Raton, FL: CRC Press. viii + 254 p. See p. 47-68. Chap. 3. [66 ref]

• **Summary:** Contents: Introduction. Preparation. Composition. Nutritional quality. Toxicology. Miso-like

products. Conclusions. Address: Central Miso Research Inst., Tokyo, Japan.

3092. Elliot, Rose. 1986. The vegetarian mother and baby book. New York, NY: Pantheon Books. 261 p. Index.

• **Summary:** A complete guide to nutrition, health, and diet during pregnancy and after—with easy recipes for mother and baby to enjoy together. The author "is one of England's most popular cookbook writers, a radio and TV commentator, and a columnist. A vegetarian since the age of three, she is also the author of *Vegetarian Dishes from Around the World* and *The Festive Vegetarian*." She has also raised three children according to the principles described in this book. Contents: Part I: A vegetarian diet for healthy mothers and babies. Part II: Recipes. Appendix. A. Summary of Nutrients: Where they are and what they do. B. How it all adds up: Analysis of one day's vegetarian menus. C. Recommended daily dietary allowances for women.

In Part I, the author recommends that if soy milk is used, it should be fortified with riboflavin (vitamin B-2), and calcium. Regular soymilk provides a little (0.5 mg/cup) of zinc. In Part II, soy-related recipes include: Miso pick-me-up (p. 99; with watercress). Tofu dressing (p. 110). Soybean salad (p. 127). Curried soybean and apple spread (p. 137). Soy sausages (p. 159; made with cooked whole soybeans). Soy and walnut loaf (p. 160; made with cooked whole soybeans). Mushroom and tofu quiche (p. 175). Tofu fritters with lemon (p. 186). Creamy tofu and almond topping (p. 203; for use like heavy cream with desserts). Whipped tofu topping (p. 204). Tofu ice cream (p. 218). Vegan yogurt (p. 219; made with soy milk).

In the Sept/Oct. 1994 issue of *Vegetarian Journal*, Reed Mangels, PhD, RD, an expert on vegetarian nutrition, says that this is her favorite book on pregnancy for vegetarian women. Address: England.

3093. Gandjar, Indrawati. 1986. Soybean fermentation and other tempe products in Indonesia. *Mycologia Memoir* No. 11. p. 55-66. Chap. 4. (C.W. Hesseltine and Hwa L. Wang, eds. Indigenous Fermented Food of Non-Western Origin. Berlin & Stuttgart: J. Cramer.) Previously published in 1981 in USDA Miscellaneous Publication FL-MS-333. [14 ref]

• **Summary:** Contents: Introduction. Kecap (Indonesian soy sauce). Taoco (Indonesian chiang, a yellowish-brown porridge that is very popular in Western Java). Soybean tempe (*tempe kedelai*). Tempe gembus (okara tempe). Non-soybean tempe—made from velvet beans (*tempe benguk*), jack beans (*tempe koro pedang*), winged bean (*tempe kecipir*), pigeon pea (*tempe gude*), wild tamarind (*tempe lamtoro*), peanut presscake (*tempe bungkil kacang*), and coconut presscake (*tempe bongkrek*).

"Tempe is an important source of protein in the Indonesian diet. At present the intake of soybean tempe per person per day is within the range of 40 to 50 g while the

recommendation is 100 g per person per day... The awareness of the people that soybean tempe is nutritious results in a higher demand of this product. In the city of Jakarta, about 6000 tonnes of soybeans are processed monthly; 2500 tonnes for soybean tempe [tempeh], and 3500 tonnes for tahu [tofu].”

Table VI shows the nutritional composition of some leguminous seeds and tempe products. Table VII shows the amino acid content of the seeds and the tempeh of 4 non-soybean legumes. Address: Dep. of Biology, Faculty of Mathematics and Natural Sciences, Univ. of Indonesia, Jakarta, Indonesia.

3094. Hesseltine, C.W.; Wang, H.L. 1986. Indigenous fermented foods of non-Western origin. *Mycologia Memoir* No. 11. 351 p. Berlin and Stuttgart: J. Cramer. Published for the New York Botanical Garden in Collaboration with The Mycological Society of America. Address: NRRC, Peoria, Illinois.

3095. Hesseltine, C.W. 1986. Microorganisms involved in food fermentations in tropical Asia. In: S. Saono and F.G. Winarno, eds. 1986. Proceedings of International Symposium on Microbiological Aspects of Food Storage, Processing and Fermentation in Tropical Asia. See p. 189-204. Held 10-13 Dec. 1979 at Cisarua, Bogor, Indonesia. [18 ref]

• **Summary:** Three pioneers of the taxonomy of molds used in fermented foods were Drs. R. Nakazawa, K. Saito, and C. Thom. Fermentations can be classified as Homofermentations (only one species of microorganism is necessary to produce the product; e.g. natto, onchom, tempeh, fermented tofu), Heterofermentations (more than one is required; e.g. Chinese yeast, or ragi), Homomultifermentations (two or more strains of the same species are used together; e.g. miso, shoyu, soy yogurt).

Tables show: (1) Representative strains of cultures in Oriental food fermentations: Miso—*Aspergillus oryzae*, *A. sojae*, *Saccharomyces rouxii*, *Pediococcus halophilus*. Tempeh—*Rhizopus oligosporus*. Sufu—*Actinomucor elegans*, *Mucor dispersus*. Address: NRRC, Peoria, Illinois.

3096. Hesseltine, C.W.; Wang, Hwa L. 1986. Food fermentation research and development. *Mycologia Memoir* No. 11. p. 9-22. Chap. 1. (C.W. Hesseltine and Hwa L. Wang, eds. Indigenous Fermented Food of Non-Western Origin. Berlin & Stuttgart: J. Cramer). [13 ref]

• **Summary:** The following fermented soyfoods are discussed: Miso, shoyu, natto, hamanatto, sufu, tamari, ontjom, tempeh. Address: USDA/NRRC, 1815 N. University St., Peoria, Illinois 61604.

3097. Hesseltine, C.W. 1986. Future of fermented foods. *Mycologia Memoir* No. 11. p. 303-16. Chapt. 17. (C.W.

Hesseltine and Hwa L. Wang, eds. Indigenous Fermented Food of Non-Western Origin. Berlin & Stuttgart: J. Cramer.) Previously published in 1981 in USDA Miscellaneous Publication FL-MS-333. [11 ref]

• **Summary:** Contents: Introduction. Positive factors for increased use of fermented foods. Trends in production of fermented foods. Factors that may effect the wider use of fermented foods in the West. Literature cited. Address: USDA/NRRC, 1815 N. University St., Peoria, Illinois 61604.

3098. Hirayama, Takeshi. 1986. A large scale cohort study on cancer risks by diet—with special reference to the risk reducing effects of green-yellow vegetable consumption. In: Yuzo Hayashi, et al., eds. 1986. Diet, Nutrition and Cancer: Proceedings of the 16th International Symposium of the Princess Takamatsu Cancer Research Fund, Tokyo, 1985. Tokyo: Japan Scientific Societies Press; Utrecht, Netherlands: VNU Science Press. xvi + 345 p. See p. 41-53. [13 ref]

• **Summary:** Breast cancer: In a prospective study of 142,857 women in Japan followed for 17 years, the author found a significant graded inverse relationship between consumption of miso soup and subsequent risk of breast cancer (p. 48). Note: This is the earliest document seen (June 1999) which suggests that soy might reduce one's risk of prostate cancer.

Stomach cancer: The author found a significant graded inverse association between the consumption of miso and green/leafy vegetables and gastric cancer risk among 122,261 men and 142,857 women followed for 13 years.

Japanese who consumed meat daily had much higher mortality from breast cancer and colon cancer than those who ate little or no meat.

“Daily consumption of green-yellow vegetables (GYV) rich in beta-carotene, vitamin C, calcium, and dietary fiber was observed to lower risks for selected cancers such as lung, stomach, prostate, and cervix. The risk reducing effect appeared more striking in cigarette smokers.

“Risks for cancer of the stomach in males and females and cancer of the breast in females were observed to be lower with the increase in frequency of soybean paste soup consumption which frequently contains GYV.” Address: Inst. of Preventive Oncology, Tokyo 162, Japan.

3099. Hoshijo, Kathy. 1986. The art of dieting without dieting! Recipe and guidebook. The Self-Sufficiency Association, 2525 South King St., Honolulu, Hawaii 96826. Or: P.O. Box 1122, Glendale, California 91209. xiv + 729 p. Illust. Index. 24 cm.

• **Summary:** A whopper of a cookbook, with 300 easy-to-prepare lacto-vegetarian recipes (no eggs) from the star of the PBS television series “Kathy's Kitchen.” Kathy has 6 healthy children (see color photo on rear cover) and 5 years

of experience on television teaching Americans how to eat healthy foods. Each recipe contains a detailed (full-page!) nutritional analysis.

This book contains a wealth of recipes using soyfoods. For example, the index lists 57 recipes for tofu and tofu mayonnaise, 13 recipes for tempeh, 9 recipes for yuba, 6 recipes for miso, and 4 recipes for soybeans (including soymilk). One section titled “Soyfriends” (p. 63) explains: “In eliminating meat from my diet, one food that has become a real friend in the kitchen is soybeans and by-products made from soybeans. From a nutritional standpoint, soybeans are a good nutritional replacement for meat as they are the only legume which contains all essential amino acids... Soybeans by themselves have a Net Protein Utilization about equal to that of beef and chicken.” Address: Honolulu, Hawaii; and Glendale, California.

3100. Hunt, Janet. 1986. *The compassionate gourmet: The best of international vegan cuisine*. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 160 p. Illust. Index. 22 cm.

• **Summary:** An excellent vegan cookbook, written for animal lovers. Soy-related recipes include: Avocado tofu pâté (p. 31). Celery miso pâté (p. 36). French bean salad with tofu dressing (p. 66). Tofu curry (Thailand; p. 74). Tofu and vegetable pakora (p. 86). Tofu layered casserole (p. 96). Tomato flan with tofu (p. 104). Tofu Lemon flan (p. 137). Yogurt dessert (made with cultured soya milk, p. 140). Rhubarb fool (dessert in soya milk, p. 141). Maple pancakes (with soya flour, p. 149). Walnut tofu balls (p. 156).

At least one recipe uses Holbrook’s Worcester Sauce—a Worcestershire-type sauce without animal products. Many recipes call for soy sauce or soya milk, and some for canned soy or nut “sausage.” Page 9 lists a number of special ingredients including Direct Foods Protoveg (soya “meat”), Infinity Foods (distributors [in Brighton, at Sussex University]) Soya mayonnaise, Lotus Foods TVP (soya “meats” in a varieties of forms and flavors), Plamil concentrated soya milk (use diluted as a milk, undiluted as a cream), and Tomor Margarine (the author’s favorite of the many vegan margarines now available in the UK). In all recipes, each ingredient is listed twice in side-by-side columns: once in its Imperial (metric) form and once in its American form, e.g. 385 ml soya milk, 1 1/3 cup soya milk. A number of recipes call for the use of alcohol (whiskey, brandy, etc.). The author has written at least 14 other books on vegetarian or wholefood cookery. Address: England.

3101. Kondo, Sonoko; Stoumen, Lou. 1986. *The poetical pursuit of food: Japanese recipes for American cooks*. New York, NY: Clarkson N. Potter. 296 p. Illust. by Etienne Delessert. Index. 25 cm.

• **Summary:** A very artistic, attractive, and authentic book with superb (imaginative and lyrical) illustrations. The

section titled “Staple foods you will need” (p. 17-20) discusses soy sauce, konbu and nori seaweeds, sesame seed paste (*atari-goma*; “Most Americans may be more familiar with the Middle Eastern version called tahini paste... Used in making salad dressings and dips”), miso, and sesame seeds. Soy-related recipes include: Grilled tofu with miso (Dengaku; p. 37). Sesame tofu (p. 38; no soy). Tuna sashimi and green onions with miso (p. 40). Daikon radish with lemon miso (p. 42). Cauliflower florets with miso (p. 42). Basic miso soup (p. 51). Clam miso soup (p. 51). Daikon radish miso soup (p. 52). Vegetable and chicken miso soup (p. 52). Tofu and wakame seaweed suimono (p. 53). Fried rice with tofu and vegetables (p. 89).

Chapter 7, titled “Tofu & egg dishes” includes (p. 103-17): Tofu in Kamakura. Description of different types of tofu: Silken, firm, grilled, pouches, deep-fried, fritters (*ganmodoki*), freeze-dried (*koya-dofu*), how to press tofu. Chilled tofu with ginger sauce. Braised *koya-dofu* with pea pods. Cold-day tofu. Vegetarian “chicken” tofu (with frozen tofu). Dragon’s head (*hiryozu*). Tofu from the sea (*Kenchin-mushi*). Tofu gratinée. Stuffed tofu. Scrambled tofu. Tofu treasure bags. Vegetarian “burger.” Egg tofu delight (*tamago-dofu*; no soy).

Beans for breakfast (*natto*; p. 125). Braised konbu seaweed, soybeans, and konnyaku (p. 128). Hijiki seaweed with tofu (p. 129). Stuffed tofu sushi (*Inari-zushi*; p. 157). Snapper tempura with asparagus and miso (p. 174). Marinated cod in miso sauce (p. 179). Seaweed, chicken, and vegetables with creamy miso (p. 185). Steak miso (p. 190). Sukiyaki (p. 206). Shabu shabu (p. 208). Vegetarian nabe (with tofu, p. 211). Sea and mountain (with miso sauce, p. 212-23). Winter nabe (with tofu, p. 214). Udon-suki (with tofu, p. 216). Tofu apple cake (p. 244). Chapter 15 (p. 260-71) is menu plans, by season and time of day.

The glossary (p. 272-82) includes: Agar-agar, azuki beans, konbu seaweed, kuzu, miso paste, nori seaweed, rice cakes (*mochi*), sesame seed oil, sesame seeds, soybeans—fermented (*natto*), soy sauce, tofu, tonkatsu sauce (with dark soy sauce), wakame seaweed. Address: Los Angeles, California.

3102. Kushi, Aveline. 1986. *Mit miso kochen: Makrobiotik [How to cook with miso: Macrobiotics]*. Schaffheim, Germany: Pala-Verlag. 140 p. Illust. Index. 21 cm. [Ger]*

• **Summary:** A German-language edition of her 1978 English-language book. Address: Massachusetts.

3103. McCarty, Meredith. 1986. *American macrobiotic cuisine*. Turning Point Publications, 1122 M Street, Eureka, CA 95501-2442. 110 p. Illust. Index. 28 cm. [6 ref]

• **Summary:** Page 7 and Chapter 7, titled “Beans and Soyfoods,” give basic descriptions of tempeh, miso, soy sauce, soymilk, and tofu. Recipes include Summer’s Mixed Vegetable Quiche (with tofu), Tofu Egg Foo Young, and

Baked Tempeh with Lemon-Mustard Sauce. Tofu recipes elsewhere in the book include Green Goddess Dressing, Nutty Noodle Bake, Pasta Patricio, and Sour Cream. Also contains information on sea vegetables. Address: Eureka, California. Phone: 707-445-2290.

3104. McDougall, Mary A. 1986. *The McDougall health-supporting cookbook*. Vol. 2. Piscataway, New Jersey: New Century Publishers. iii + 157 p. Index. 23 cm.

• **Summary:** This is a vegan cookbook whose 250 original recipes are designed to support The McDougall Plan, which is a diet low in fat and sodium, high in complex carbohydrates. Since soyfoods are relatively high in fat, they are used sparingly and the recipes are marked by a symbol of a crown. Low sodium soy sauce is used in many recipes. Soy-related recipes include: Scrambled tofu (p. 2-3). Tofu salad dressing (p. 7-8). Dijon tofu dip (p. 9). Onion soup dip (with tofu, p. 9). Dilly tofu dip (p. 9-10). Miso soup (p. 39). Creamed tofu soup (p. 41). Tempeh Creole (p. 62-63). Rice-tofu stuffing mix (p. 88). Tempeh and grain casserole (p. 91). Tofu loaf (p. 96-97). Baked tofu cubes (p. 97-98). Spinach-tofu burgers (p. 99-100). Where's the meat loaf? (with tofu, p. 101-02). Oat burgers (with tofu, p. 102-03). TVP stuffing mix (p. 109). Okara cookies (p. 126). Tofu banana pudding (p. 132). The section titled "Update on ingredients" (p. 133-35) includes a description of: Worcestershire sauce (Sharwood's—natural and without anchovies), umeboshi plum sauce, tamari or soy sauce, okara, tempeh, kombu, and tahini. A portrait photo on the rear cover shows Mary McDougall.

Note: Not long after this book was published, New Century Publishers changed its name to New Win Publishing, Inc. and moved to Clinton, New Jersey. As of 2000 this book is published by Putnam/Penguin. Address: P.O. 14039, Santa Rosa, California 95402.

3105. Rachim, Abdul. 1986. Notes on the soybean food industry under producers' co-operatives in Indonesia. *CGPRT* No. 4. p. 244-54. Includes 7 tables and figures.

• **Summary:** The Food Balance Sheets of the Central Bureau of Statistics show that 90% of Indonesia's soybeans are used for food. Most of the human consumption is in the form of a variety of popular processed foods: tempe, tahu (tofu), tauco, and a number of other less popular foods: soybean sprouts (tauge), sere in Bali, yuba, soybean milk, fried soybeans (eaten as a snack), beans boiled in the pod (also a snack), and the beans cooked as a vegetable or as an ingredient in soups. Only one factory (Sari Hasuda, in Yogyakarta) produces soybean milk. It is enriched with nonfat dried milk, vitamins, and minerals.

To coordinate and improve the economic viability of the small tofu and tempeh producers, a cooperative system, called Kopti (Koperasi Produsen Tempe dan Tahu Indonesia; Indonesian Tempe/Tofu Processors' Co-

operative) was founded in 1979. The main function of Kopti is to procure and distribute soybeans to its members. It handles about 407,160 tons/year. The purchase price of soybeans is as follows (Rupiah/kg): From USA 415, from China 425, from Indonesian farmers 475-80. Certificate seeds cost 550-75.

Tofu, tempe, kecap, tauco and oncom processing is primarily done in small factories. 3 studies have been made on the size of these factories and the quantities they process: as part of the 1974 Industrial Census of the Central Bureau of Statistics (CBS); by Winarno, et al., in 1976; and by the study team on Soybean Commodity System (SCS) in the Garut area of West Java in 1984. The findings of these 3 studies are presented in Table 2.

"We should be cautious in comparing their results, however, because of biases in the collection of the information. The CBS study, for instance, was part of an industrial census, which divided processors into two categories: small-scale industries (5-19 labourers), and home factories (1-4 labourers, some of whom may be family members). However, there may also be wide variations in the industry in different parts of the country.

"Despite these limitations, it seems that the volume of soybean processed by each unit has increased appreciably, probably reflecting a favorable growth of the industry. Yet the number of labourers per unit has remained small, and is probably diminishing. This may be because of the use of mechanical crushers or hullers for both tempe and tofu productions." Address: Research Asst., ESCAP CGPRT Centre, Bogor, Indonesia.

3106. Reddy, N.R.; Pierson, M.D.; Salunkhe, D.K. eds. 1986. *Legume-based fermented foods*. Boca Raton, Florida: CRC Press. viii + 254 p. Illust. Index. 26 cm. [585 ref]

• **Summary:** An overview with information on nutrition and processing of fermented soyfoods. Contents: 1. Introduction. 2. Soy sauce. 3. Miso. 4. Sufu. 5. Natto. 6. Tempe. 7. Fermented soybean milk and other fermented legume milk products. 8. Oncom (fermented peanut press cake). 9. Idli. 10. Dhokla and Khaman. 11. Dawadawa. 12. Papads. 13. Other legume-based fermented foods. 14. Future of legume-based fermented foods. Address: 1-2. Dep. of Food Science & Technol., Virginia Polytechnic Inst. and State Univ., Blacksburg, VA; 3. Vice-Chancellor, Mahatma Phule Agricultural Univ., Rahuri, Maharashtra State, India.

3107. Takahashi, Kuwako. 1986. *The joy of Japanese cooking*. Tokyo: Shufunotomo Company, Ltd. 311 p. Illust. (some color photos). Index. 27 cm.

• **Summary:** An excellent book with especially good descriptions of Japanese ingredients. Contents: Dedication. Foreword. Introduction. Part I. Japanese ingredients. Seasonings in Japanese cooking. Utensils and equipment.

Tableware. Measurements and equivalents. Basic techniques: Making soup stock (*dashi*), cooking rice, preparing fish, boning chicken, cutting vegetables, broiling, poaching, steaming.

Part II. Seafood. Chicken. Eggs. Beef. Pork. *Tofu* (bean curd). Vegetables, dried and manufactured foods.

Part III. Appetizers (*zensai*). Soups. Salads (*aemono*). Casseroles (*nabemono*). Rice. Pickles. Desserts and Japanese sweets.

Part IV. Menu planning. Sample menus with preparation schedules. Part V. Making tea. Serving sake.

A color photo (p. 15) shows six different soyfoods made from soymilk: 1. Deep-fried soybean puffs (*age* or *aburage*). 2. Fried tofu cutlet (*atsu-age* or *nama-age*). 3. Tofu patties (*ganmodoki*). 4. Soymilk film, dried (*yuba*). 5. Bean curd cake (*tofu*). 6. Freeze-dried tofu (*Kôya dofu*).

The section titled "Japanese ingredients" (a superb glossary, with many entries accompanied by an illustration {line drawing}, p. 17-32) includes: Bean curd cake (*tofu*), incl. regular tofu (*momen dofu*), soft tofu (*kinugoshi dofu*), Ever-Fresh Silken Tofu (aseptically packaged), instant tofu, firm tofu (Chinese style). Tofu products: Deep-fried soybean puffs (*agé* or *aburage*), fried tofu cutlet (*atsu agé* or *name agé*), freeze-dried tofu (*Kôya dofu*), grilled tofu (*yaki dofu*), tofu patties (*ganmodoki*). Beans: Red beans, dried (*azuki*), soybeans, dried (*daizu*), soybeans, fresh (*eda mamé*). Bean pastes: Bean paste, fermented (*miso*), sweet bean paste (*azuki an*). Soymilk film, dried (*yuba*). Soy sauce (*shoyu*).

The glossary also discusses: Horseradish, Japanese (*wasabi*), konnyaku, kombu, umeboshi, kabocha, daikon (4 forms), glutinous rice (*mochi gome*), red bean rice (*sekihan*), pounded rice cake (*mochi*), rice wine lees (*sakekasu*), rice wine lees pickles (*narazuke*), perilla (*shiso*), seaweeds (*hijiki*, *nori*, *yakinori*, *small sized nori*, *wakame*, *ao nori*), sesame seeds (*goma*), sweet rice wine for cooking (*mirin*), wheat gluten cake (*fu*, incl. *nama fu*, *yaki fu*, and *matsutake fu*).

The section titled "Seasonings in Japanese cooking" (another superb glossary, p. 33-37) discusses: Soy sauce, incl. Regular soy sauce (*koikuchi shôyu*), light soy sauce (*usukuchi shôyu*), tamari soy sauce (darker and thicker, made from fermented soybean and brine in the Nagoya area. "It is not saltier than regular soy sauce but has a richer flavor, thicker taste, and some people prefer tamari as the dipping sauce for sashimi... Note: In the USA the name 'tamari' is mistakenly used for natural soy sauce which is not tamari"), white soy sauce (*shiro shôyu*), milder soy sauce (contains less salt). A table showing the nutritional composition of five different types of Japanese soy sauce is given. Combinations of soy sauce and mirin: Teriyaki. Miso (incl. *kome miso*, *mugi miso*, *mame miso*, mixing of miso types).

Use the good index to see how each of the ingredients mentioned above are used in recipes.

A good biography of the author is appears in the Foreword and on the inside rear dust jacket (with portrait photo). The author was also very active in introducing ikebana (Japanese flower arranging) to the Bay Area and the USA. Address: Japan and Berkeley, California.

3108. Tsuji, Shizuo; Hata, Koichiro. 1986. Practical Japanese cooking: Easy and elegant. Tokyo & New York: Kodansha International. 151 p. Illust. (color). 31 cm. *

• **Summary:** Shizuo Tsuji was born in 1948. Address: Tsuji Professional Culinary Inst., Osaka, Japan.

3109. Wakeman, Alan; Baskerville, Gordon. 1986. The vegan cookbook: Over 200 recipes all completely free from animal produce. London and Boston: Faber & Faber. 298 p. Index. 22 cm. [28 ref]

• **Summary:** The 200 recipes in this cookbook demonstrate that a vegan diet can be rich and varied and reach the highest culinary standards. Within each chapter (e.g. main dishes, or soups) the recipe are listed with the quicker, cheaper, or simpler ones first and the slower, more expensive, or more elaborate ones last. A nutritional analysis per serving is given with each recipe.

Soy-related recipes include: Tofu stir-fry (p. 63). Tofu chips with walnuts and olives (p. 105). Vanilla dessert (with soya milk, p. 147). Caramel Cream Pudding (with tofu, p. 153). Orange and Chocolate Mousse (with soya milk, p. 154). Banana tart (with soya milk, p. 157). Chocolate tart (with soya milk, p. 158). Banana curd cake (with tofu and soya milk, p. 160). Lemon cheesecake (with tofu and soya milk). Rum and chocolate cheesecake (with tofu and soya milk, p. 162). Basic plain sauce (with soya milk, p. 166). Lemon curry sauce (with soya milk). Custard (with soya milk, p. 175). Hot chocolate sauce (with soya milk, p. 176). Tofu dressing (p. 181). Yoghurt salad dressing (with cultured soymilk yogurt, p. 182). Mayonnaise with soya milk (p. 185). Tahini spread with miso (p. 192). Scrambled tofu and herbs on toast (p. 254). Lassi (Traditional Indian sweet or salty yoghurt drink, p. 256). Soy sprouts (p. 262).

Many recipes call for the use of soy sauce or soya milk (especially desserts, dairylike products, or cream sauces), and tofu is used as an ingredient in many recipes in which it does not appear in the recipe name (e.g. Bulgur bake, p. 59; Mushroom pie, p. 88). In all recipes, each ingredient is listed twice in side-by-side columns: once in its Imperial (Metric) form and once in its American form, e.g. 385 ml Vegan Yoghurt, ½ cup.

One excellent chapter titled "The Alternative Dairy" (p. 231-50) is designed to tempt even the most determined cream addict. It contains descriptive sections on soya milk, margarine, tofu, vegan yoghurt, and vegan ice-cream, followed by recipes for: Vegan single cream. Vegan double

cream. Vegan sour cream. Vegan piping cream. Cashew cream. Coconut cream. Vegan yoghurt (2 methods). Plain ice cream. Banana ice-cream. Pineapple ice-cream. Chocolate ice-cream. and Peach sorbet.

Appendixes include: 1. Notes on vegan nutrition. 2. Seven reasons to be a vegan (health, economic, ecological, altruistic {world hunger}, compassionate (to animals), ethical {what right do we have to kill animals?}, spiritual). 3. Useful addresses. 4. Selected bibliography. 5. Abbreviations and measures. 6. Glossary of unusual ingredients: Incl. demerara sugar (dark brown, often used raw), miso, soya flour, soya milk, soya sauce, tofu. Address: England.

3110. Wang, H.L.; Fang, S.F. 1986. History of Chinese fermented foods. *Mycologia Memoir* No. 11. p. 23-25. Chap. 2. (C.W. Hesseltine and Hwa L. Wang, eds. Indigenous Fermented Food of Non-Western Origin. Berlin & Stuttgart: J. Cramer.) Previously published in 1981 in USDA Miscellaneous Publication FL-MS-333. [6 ref]
 • **Summary:** Discusses the early history of numerous types of ch'ü (similar to koji, with a substrate of wheat, barley, millet, and/or rice), chiang (salted sauce), shi or tou-shi (soy nuggets), chiang-you, tou-yu and shi-tche (the liquid from shi), tou-fu-ru (fermented tofu or sufu), La-pa-tou (Mucor fermented beans), Mei-tou-tcha (Meitauza, fermented okara), tsu (vinegar), yan-tsai (salted vegetables). The three main sources of early information on fermented soyfoods are the *Shih chi* (90 B.C., historical record), the *Ch'i-min yao-shu* (+6th century agricultural encyclopedia), *Pen-ts'ao kang-mu* (16th century botanical encyclopedia). Address: 1. USDA/NRRC, 1815 N. University St., Peoria, Illinois 61604; 2. Inst. of Microbiology, Academia Sinica, Beijing, China.

3111. Wang, H.L.; Hesseltine, C.W. 1986. Glossary of indigenous fermented foods. *Mycologia Memoir* No. 11. p. 317-44. Chapt. 10. (C.W. Hesseltine and Hwa L. Wang, eds. Indigenous Fermented Food of Non-Western Origin. Berlin & Stuttgart: J. Cramer). [29 ref]
 • **Summary:** The section titled "Fermented Legume Products" defines chao (Vietnamese fermented tofu), chiang-chu (Chinese koji), ch'ou-toufu and ch'ou-toufu-ru (fermented tofu), Damsuejang and doenjang (Korean miso), furu, sufu, hon-fan or red sufu (fermented tofu), in-shi ("Fermented black soybeans from China" [soy nuggets]), in-yu (Type of Chinese soy sauce made from black soybeans), kanjang (Korean soy sauce), kenima, ketjap or kecap (Indonesian soy sauce from black soybeans), meitauza or mei-tou-cha (fermented okara), meju (maiju or maeju; Korean soybean koji), natto, oncom (onchom or oncom), see-iu (see-iew; Thai soy sauce made from whole soybeans); soy sauce, soybean paste, tahuri (tahuli; Filipino fermented tofu. See sufu), tao-chieo (tao-jiao; Thai miso),

taohu-yi (Fermented tofu from Thailand. See sufu), taokoan, tempe (many types), thua-kab (dry thua-nao), thua-merk (wet and cooked thua-nao), thua-nao (Thai natto), tosufu (see sufu), toufu-ru (fermented tofu), tsue-fan (tsui-fan, chee fan; fermented tofu).

Note 1. This is the earliest English-language document seen (Oct. 2008) that uses the term "fermented black soybeans" or "Fermented black soybeans from China" to refer to soy nuggets.

Under "Fermented Cereal-Legume Products" we find: chiang, chiang-yu (chau-yu, Chinese soy sauce), fermented soybeans (soy nuggets), hamanatto, kochujang (kochu chang), miso, shoyu, tamari, taotjo (tao-tjo, tao dji; Fermented soybeans from Indonesia or Thailand [No! *Tao-tjo* is Indonesian-style miso and *tao dji* is Indonesian soy nuggets]), tao-tjung or tou-chiang (chiang), tao-yu (tou-yu; Chinese soy sauce), taoco (taocho, taoco, taucho; Indonesian miso), tou-pan-chiang (Chinese fava bean miso), tou-shi (toushih; Chinese soy nuggets), toyo (Filipino soy sauce). Note 2. This is the earliest English-language document seen (March 2009) that uses the word "taocho" to refer to Indonesian-style miso.

Fermented Vegetable Products include: Chiang-tsai (chiang-tsay; Vegetables in China pickled in chiang or soy sauce or tien-mien-chiang), miso-zuke. Address: USDA/NRRC, 1815 N. University St., Peoria, Illinois 61604.

3112. Weir, G.S.D. 1986. Protein hydrolysates as flavourings. *Developments in Food Proteins* 4:175-217. Chap. 5. (B.J.F. Hudson, ed. London and Englewood, New Jersey: Applied Science Publishers). [133* ref]
 Address: Brooke Bond Oxo Ltd., Croydon, UK.

3113. Wood, B.J.B. 1986. Introduction of new fermented foods into Western culture. In: C.W. Hesseltine and H.L. Wang, eds. 1986. Indigenous Fermented Food of Non-Western Origin. Berlin: J. Cramer. 351 p. See p. 251-58. Chap. 14. [6 ref]
 Address: Dep. of Applied Microbiology, Univ. of Strathclyde, Glasgow, Scotland.

3114. Kadocho Mingu-kan. 1986? Shôyu no furusato: Kadochô mingu-kan shokunin-gura [The homeland of shoyu: Kadocho folk tool museum. Craftman's storehouse (Leaflet)]. Wakayama-ken, Japan. 6 panels. Undated. 26 x 12 cm. [Jap; eng]
 • **Summary:** Company name with diacritics is: Kadochô Mingu-kan. This company and museum was founded by Mr. Chôbei Kanô. Photos in the leaflet show the ancient shoyu equipment including a lever press (*shime-ki*) used to press shoyu from the moromi mash during the Edo period (1600-1868), up until the Meiji period. a wooden ladle (*shoyu kasuri*), a wooden shoyu vat with bamboo hoops, cloth money collecting bags, and a pedal-powered wooden cog-

wheel device for cracking wheat. A re-drawn line (the original was from early Meiji period) drawing shows the exterior of a row of shoyu plants along the street in downtown Yuasa. And a photo shows the inside and exterior of the present K.K. Kadocho, where shoyu is still made by traditional methods.

“The history of Yuasa shoyu: Shoyu, the world famous seasoning, was originally produced in Yuasa from Kinzanji-miso or soy bean paste, which was brought from China in the early 13th century by Hotokokushi of Kokokuji Temple of Yura. In those days, Shoyu was only for use at home and not for sale because of poor traffic facilities. But about 400 years ago, in Azuchi-Momoyama era, Shoyu was first shipped to other parts of Japan as a commodity here in Yuasa.

“Since then, Shoyu industry developed a great deal, thanks to the protection of the Lord of Kishu, and it is said that in the Bunka-Bunsei [Bunka (1804)–Bunsei (1818)?] era, there were 92 Shoyu-ya or Shoyu-makers in about one thousand houses of Yuasa.

“In the meantime, people in Yuasa showed how to make Shoyu to the people in some parts of Japan, such as Choshi near Tokyo. Today the Shoyu industry in Yuasa is dwindling, chiefly owing to the promotion of some major Shoyu companies. But we still have the traditional method of making that Yuasa Shoyu once called Yuasa Tamari in Kamakura era.”

“The origin of shokunin-gura or shoyu workshop: In Yuasa, the birthplace of Soy Sauce, there still remain some old workshops with very thick and crumbling walls here and there. Some workshops are now converted to the residences. With the disappearance of Shoyu makers, we can no longer see craftsmen who used to toil and moil here, and traditional Shoyu things, the fruits of their wisdom and efforts. (Today we have several museums of folk craft throughout Japan. But I feel responsible, as one of the Shoyu craftsmen, for collecting and preserving these old Shoyu things as well as ‘the taste of old days.’)

“Kadocho Shokunin-gura, with the size of 80 square meters, was one of the fermenting houses built in Keio era [in Keio 2, 1866]. All these Shoyu things kept here are the tools used for making Shoyu and each of them has sweat and pains in it of the craftsmen of those days. I welcome you to my Shoyu workshops of about 100 years old.”
Address: K.K. Kadocho, Kitamachi 7, Yuasa-cho, Arita-gun, Wakayama-ken, Japan. Phone: 0737-62-2035.

3115. *Toyo Shinpo (Soyfoods News)*. 1987. Gyôkai saidai no nandai okara o kangaeru. Urisaki ga kadai ni [Manufacturers’ biggest problem is okara. The problem is where to sell it, dry it, and the expense of doing so]. Jan. 1. p. 7-8. [Jap; eng+]

• **Summary:** Is okara waste matter or can it be put to use? If it is useful, can it be used inexpensively? Tofu

manufacturers in Japan who deal with okara are trying to use twin screw-extruders to put okara to good use. Dried okara is useful, but drying okara is a very expensive operation. Okara has recently been used in dog, cat, and fish foods, etc. The dairy industry also consumes some.

They are even using it as compost in Aichi-Ken. This has had some good results. They started to use it as fertilizer in July 1986, and they produced nice melons and watermelons. In addition, the okara seemed to ward off insects. Because of results such as these, okara now sells for ¥5,000 a ton. There have been good results in using okara as fertilizer in the production of cucumbers and tomatoes in Hokkaido. In Nagano, they are trying to cultivate shimeji mushrooms using okara.

Okara is also being used in miso for miso pickles (misozuke). This research is still in the preliminary stages however. In Kagawa-ken, a frozen food company is making tofu croquettes using okara. In Fukuoka-ken, they use dried okara for food products, growing mushrooms, and as fertilizer. It is also used in croquettes and hamburgers—3 manufacturers are actually making these foods now.

3116. Westbrae Natural Foods. 1987. Distributor catalog, FOB pricing: Jan. 1, 1987. Emeryville, California: Westbrae. iv + 19 + [12] p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on a tan background. Pages i-iv are general information, 1-10 are a computer-printed price list, and 11-19 are a product glossary. There are also 1-page, single-sided inserts (sell sheets, many in full color) of various Westbrae products. Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (415) 658-7518 (orders).

3117. Cushman, Deborah. 1987. ISU researcher [Walter Fehr] is Calvin Klein of designer beans. *Des Moines Register (Iowa)*. Jan. 14. p. 1T, 10T.

• **Summary:** New varieties are low in linolenic acid, high in stearic acid, high in protein (Vinton, for tofu), small seeded for sprouts, and large seeded for soynuts and miso.

3118. Fujinami, Hiroko. 1987. Dai 29 kai zenkoku miso kanhyô kai o oete [Completing the 29th annual Japanese national miso evaluation and grading contest]. *Daizu Geppo (Soybean Monthly News)*. Jan. p. 36. [Jap]

• **Summary:** This contest is sponsored each year by the Central Miso Research Inst., and is widely participated in and the awards highly respected. Address: Chuo Miso Kenkyujo.

3119. Oberlaender, Michaela. 1987. A sorcerer’s sauce [John Troy and American Natural Foods miso condiments]. *Nation’s Business*. Jan. p. 70.

• **Summary:** “Miso was available only as a raw material in health food stores—until John Troy came along. Now in hot sauce and 7 other Troy products, it is on the shelves of supermarkets.” Before creating Hot Stuff, Troy and his wife, Carol, were making candy bars for Elf Works, a home business, in Chapel Hill, North Carolina. Two years ago he started American Natural Foods (ANF), raising \$400,000 from 30 shareholders. Recently ANF moved to Hillsborough, where it leases offices and a warehouse.

The Hot Stuff and six other condiments are made at Mrs. Campbell’s Canning Co. near Winston-Salem, North Carolina. Miso Mustard, the company’s best-selling product, is made in Emeryville, California. American Natural Foods’ products were initially sold only in natural- and health food stores. Last year the company’s sales were \$220,000—in its first fiscal year; they are expected to double next year. Recently they signed a contract with Kroger to try four products in the national chain’s 1,600 stores. Troy, age 46, says wizard is his “alter ego.” A college dropout, he started a stereo retail business, became dissatisfied with retailing, then “took a sabbatical” to ponder what life was all about. During that time he became a vegetarian, but finding vegetarian food too bland, he began to experiment with new seasonings, including miso.

A color photo shows John Troy dressed in purple wizard’s robes, with hat, rope belt, and twisted staff, standing in front of a caldron of his products—all in glass bottles.

3120. *SoyaScan Notes*. 1987. New Trend: Increase in breeding of soybeans for specialized uses, including special food uses such as tofu, miso, and soy sprouts (Overview). Jan. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** This is part of the larger trend toward value added products and toward tailoring soybeans for export to food manufacturers in Japan. The new breeding work is being done by various countries (such as Canada and the USA), and by many universities, agricultural experiment stations, and private seed breeding companies within the USA. U.S. soyfoods companies will definitely benefit for this trend and should keep close track of new developments.

3121. Vandemoortele, Philippe. 1987. Editorial. *Soyfoods (ESFA)* 1(1):2. Jan.

• **Summary:** Contents: What are soyfoods? Why was the Association founded? What will the Association do to achieve its goals. What can a member expect from the Association?

“Soyfoods cover all products deriving from the whole soybean produced according to a traditional process and manufactured into soya milk, tofu, tempeh, miso, soya sauce, soya sprouts and other products. Why was the European Soyfoods Assoc. founded? Until only a few years ago, only industrial soya protein such as defatted and fullfat

flour, concentrates, isolates, and textured protein were used in the food industry. They are mainly used for their functional properties rather than for their nutritional characteristics.” Now there is a growing interest in soyfoods. The ESFA will organize a Soyfoods Conference every 2 years. Address: President of the ESFA (European Soyfoods Assoc.).

3122. Flinders, Carol. 1987. Laurel’s Kitchen. *Washington Post*. Feb. 18. p. E3.

• **Summary:** A vitamin B-12 deficiency is a rare but very serious problem. “Another way to get vitamin B-12 is to eat tempeh or miso every day”—although neither is a completely reliable source. “Other fermented foods, such as natto and even shoyu, may contain B-12, but it shouldn’t be counted upon.” Address: [California].

3123. Appropriate Foods, Inc. 1987. Eat Appropriately! [Catalog and price list]. 292 Liberty Ave., Brooklyn, NY 11207.

• **Summary:** The following lines are carried and distributed: Appropriate Foods, New York Soy Deli, The Soy Source, Emperor’s Best, Cedar’s Mediterranean Foods, Grainaissance (amazake and mochi), Infinity Foods (amazake puddings), Integrity Baking Co., Jofu, Maine Coast Sea Vegetables, Malka’s Foods (Blueberry Tofu Pie), Miso Master, Nasoya Foods, New England Country Dairy, Ray’s Seitan Wheat Meat, Soya Kaas, Stonyfield Farms (Yogurt), Sunshine Burgers. Address: Brooklyn, New York.

3124. Diamond, Marilyn. 1987. A new way of eating: The proper foods, combinations, and recipes to start you on the road to health. New York, NY: Warner Publications. 158 p. Feb. Introduction by Harvey Diamond. Index of recipes by type. 21 cm.

• **Summary:** This is a slightly revised re-release of Marilyn Diamond’s first book “The common sense guide to a new way of eating” (1980, Golden Glow Publishers). “Marilyn Diamond, co-author with her husband, Harvey Diamond, of *Fit for Life*, the diet and life-style program that has swept America from coast to coast, has been a student and teacher of international cuisine for over 20 years. She is a Phi Beta Kappa, magna cum laude graduate of New York University, with certification in nutritional counseling from the American College of Health Science. She is director of the Institute for Nutritious Home Cooking in Santa Monica, California, and specializes in counseling for children and pregnant women. Much of her time is spent coordinating numerous projects, such as a *Fit for Life* food product line, *Fit for Life* restaurants, and a national *Fit for Life* club and newsletter.” She lived one summer as an exchange student in Avignon, France.

This book is based on several dietary principles: 1. Consumption of a sufficient quantity of water-content

foods, such as raw fruits and vegetables. One should eat lots of salads. 2. Proper food combining. 3. Correct consumption of fruit to cleanse your body. A fruit-only breakfast is recommended. 4. Avoid acid-causing foods such as meat, coffee, alcohol, dairy products, cooked nuts or fruits, and chemically processed foods such as white sugar and white flour. Fresh fruit and vegetable juices neutralize acid. Note that small amounts of meat, chicken, and dairy products are included in some recipes (see p. 28-29, 48-49, 127, 129, 131, 134, 136, 138) since the author advises people to move away from their addictions and habits slowly and to enjoy feasts on special occasions.

Soy-related recipes include: Chinese vegetable salad and dressing (with soy sauce, p. 43, 55). Tamari salad dressing (p. 57). Easy minestrone (with white or red miso, p. 69). Easy chow mein (light soy sauce, tamari, and miso, p. 148). Note that tofu is not mentioned. Address: Fit for Life, 2210 Wilshire Blvd., Suite #118, Santa Monica, California 90403.

3125. Hayasaka, Chieko. 1987. Chôri-men kara mita misoshiru no tokusei. I. Miso to dashi no kanten ni tsuite [Cooking characteristics of miso soup. I. Relationships between miso and soup stock]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 82(2):99-104. Feb. [Jap]

• **Summary:** Sensory relationships are discussed. Address: Joshi Gakuin Tanki Daigaku.

3126. Ismunadji, M.; Zulkarnaini, I.; Somaatmadja, S. 1987. Nutritional disorders of soybean in Indonesia. *CGPRT* No. 10. p. 167-74. Feb. J.W.T. Bottema, F. Dauphin, and G. Gijbers, eds. *Soybean Research and Development in Indonesia*. [11 ref]

• **Summary:** Nutritional disorders of soybean are common in Indonesia. Visual symptoms, such as leaf chlorosis (potassium deficiency), stunted growth, and malformation of leaves are often observed in the field. Molybdenum and phosphorus deficiencies, aluminum toxicity, and acid mineral soils (corrected by careful liming) are common problems on specific soil types.

Soybean is the most important grain legume crop grown in Indonesia. It is used for food and feed and plays an important role in the Indonesian diet as a source of protein. Soybean protein is much cheaper than protein from animal sources. Soybean-based food such as tempe, tahu, soy sauce and tauchou are very popular. Indonesia is not yet self-sufficient in soybean and imports are close to a half million tons/year. The Government is promoting soybean production by acreage expansion and intensification. Address: Bogor Research Inst. of Food Crops (BORIF).

3127. **Product Name:** [Rice Miso, and Sweet White Miso]. **Foreign Name:** Komé Miso, Shiro Miso (Miso doce). **Manufacturer's Name:** Miso Produções.

Manufacturer's Address: Rua do Douro, No. 92 r/c, Rebelva, 2775 Parede, Portugal. Phone: (1) 247 50 68.

Date of Introduction: 1987. February.

Ingredients: Rice miso: Organic soybeans, rice koji, salt, water.

Wt/Vol., Packaging, Price: 350 gm.

How Stored: Refrigerated.

Nutrition: Per 100 gm.: Calories 153, protein 13.5 gm, carbohydrates 19.1 gm, sodium 4400 mg.

New Product-Documentation: Letter from Miguel Azguime, owner. 1989. Oct. 31. The rice miso is aged 2 years in wooden kegs. The sweet rice miso is aged 1-2 months. There are 5 varieties of Nerimiso. In 1990 rice vinegar and mugi (barley) miso will also be available. Miso is aged in 800 kg capacity wooden kegs, stored outside under a large roof.

Eight years ago (in 1981) the company started research on producing koji, in order to make natural miso on a community scale. As demand increased, so did production and understanding of the process. They shared experiences with many friends, especially in Europe, studying microbiology and making many experiments at the Lisbon University Laboratory. [Parede is located about 10 miles west of Lisbon, near the Atlantic Ocean.] Two years ago they started using organically grown grains and by the end of 1990 all of their products will be guaranteed organic. Their products are made using simple, time-honored techniques to guarantee quality. They are the only company in Portugal making koji and products derived from it. He and his wife are professional musicians.

Labels: 1989. 7 by 2.75 inches. Black on white.

Illustration of a Tibetan vajra on each label. The rice miso was introduced in Feb. 1987 and the sweet white miso in Dec. 1987.

3128. **Product Name:** Soyboy Tofu Burgers.

Manufacturer's Name: Northern Soy, Inc.

Manufacturer's Address: 30 Somerton St., Rochester, NY 14607. Phone: 716-442-1213.

Date of Introduction: 1987. February.

Ingredients: Harvest Light Tofu (filtered water, organically-grown soybeans, natural calcium chloride nigari—a natural mineral coagulant, not a preservative), red miso (water, rice, soybeans, salt), carrots, dried onion, sesame seeds, sunflower seeds, spices, guar gum, carrageenan.

Wt/Vol., Packaging, Price: 6.25 oz 2 burgers per package.

How Stored: Refrigerated, 45 day shelf life. Or frozen.

Nutrition: Per burger (3.125 oz.): Calories 180, protein 14 gm, carbohydrate 4.3 gm, fat 12.5 gm, sodium 350 mg.

New Product-Documentation: Manufacturer's catalog.

1987. Oct. Gives ingredients. Talk with Andy Schecter. 1988. Feb. 17. Launched in Feb. 1987. Label. 1987. 3.25 inches diameter. Red, green, and black on yellow. "All

natural meatless entrees. Cholesterol-free. No preservatives and nothing artificial. Precooked for your convenience.”

3129. *Soya Newsletter (Bar Harbor, Maine)*. 1987. Miso enters prepared foods market. Jan/Feb. p. 6.

• **Summary:** American Miso Co., founded in 1980, sold 500,000 lb of miso in 1986. Its 8 varieties are now widely used in second generation products, such as tofu salad dressings, soft tofu-based “cheese,” fancy mustards, condiments, and a spaghetti sauce.

3130. Belleme, John. 1987. Making miso at home. Putting up your own batch is surprisingly easy and rewarding. *East West*. March. p. 14-21. [1 ref]

• **Summary:** Describes how to make miso at home. Belleme, founder of the American Miso Co., apprenticed in Japan with miso master Takamichi Onozaki. Since 1979 Belleme has made almost 1,000,000 pounds of miso. Address: North Carolina.

3131. Brown, Judy. 1987. Suiting America’s tastebuds: The new American soyfoods. *Whole Foods*. March. p. 37-40, 42-43. [1 ref]

• **Summary:** An overview, drawing heavily (with acknowledgment) on Shurtleff & Aoyagi’s *Soyfoods Industry and Market* for statistics. Address: Alban & Associates, San Francisco, California.

3132. Eden Foods, Inc. 1987. Traditional Japanese foods. 701 Tecumseh Rd., Clinton, MI 49236. Manufacturer’s catalog.

• **Summary:** Contains information on the production and use of tamari, shoyu, and miso. The company still uses the terms Hacho [sic, Hatcho] miso, kome miso and mugi miso, and still confuse consumers by calling their shoyu “Tamari-Natural Shoyu.” Address: Clinton, Michigan.

3133. Le Seuil. 1987. Catalogue [Catalog]. Zone Industrielle, 34190 Ganges, France. 34 p. 21 x 10 cm. [Fre]

• **Summary:** In French “Seuil” means “Threshold, sill, or shelf (of the ocean bed).” Contents: Oriental specialties (tamari, shoyu, and miso imported from Japan, p. 6-8). Soya pasta (spaghetti & macaroni, p. 15). Yellow soybean (p. 17). Virgin soy oil (p. 20).

Letter from Maurice Marchand. 1989. June 1. The company, which was founded in 1979, moved to this new address on 1 Jan. 1986. They are very interested in soyfoods, both imported (they import from Mitoku and Yamato), and made in France (they work with Athanor and Sojadoc). Address: Ganges, France. Phone: 67.73.99.80.

3134. Marty, Denise. 1987. Les dérivés de soja, un marché pour les Pme [Products derived from soya, a market for the

small- and medium-sized companies]. *Agro Industries* No. 26. p. 40-41. March. [Fre]

• **Summary:** “At SIAL this year, 5 soyfoods companies will present their products. For a sector this small, this is important, and it indicates that the sector is in full growth.” Four companies are Soy, Sojadoc, Daizou, and Lima N.V. Daizou was created in 1985 by the Japanese restaurant Le Bol en Bois, one of the first to sell tofu in France. Daizou makes only 50-100 tonnes/year of specifically Japanese products. The Société Soy, founded in 1980 [sic, actually 1982], is busy transforming tofu into new foods. This year it launched the new tofu yogurt-like dessert Soyeux. Its new plant at St. Chamond (Loire) has a capacity of 7 tonnes/day of tofu, or 1,500 tonnes/year. In June 1986 the society Sojadoc in Albi took the same step, changing from an artisans production of 10 tons/year of tofu to large scale (1,500 tonnes/year) production of tofu and soymilk over the next 3 years from an investment of 12.5 million French francs. Lima-France, affiliate of a Belgian company, is at Lot-et-Garonne. Jan Kerremans is their miso master, making about 70 tonnes a year.

In 1983 about 10 million liters of soymilk were consumed in Europe, compared with 30,000 million liters of dairy milk. Guy Coudert of the European Soyfoods Association estimates that by the year 2000 some 25,000 tonnes/year will be consumed in France. Address: France.

3135. Saio, Kyoko; Suzuki, H.; Kobayashi, T.; Namikawa, M. 1987. Microstructural changes in winged bean and soybean during fermentation of miso. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 50. p. 134-41. March. [11 ref. Eng; jap]

• **Summary:** Reprinted from *Food Microstructure* 3:65-71 (1984). Note: This article was also reprinted in the Nov. 1985 issue of this journal (p. 272-79). Address: National Food Research Inst..

3136. Organized Kashruth Laboratories. 1987. Re: Certification for eight products made by American Miso Co., Inc., of North Carolina as Kosher and Pareve. Letter to American Miso Co., April 23. 1 p.

• **Summary:** The products are: Amakuchi mugi miso. Traditional red miso. Mellow white miso. Country barley miso. Sweet white miso. Chickpea miso with rice. Chickpea miso with barley. Sushi rice. “These products must bear our Circle-K seal of Kashruth on the label. This certification is valid until April 30, 1998 and is subject to renewal at that time.” Rabbi Bernard Levy, Kashruth administrator. Address: P.O. Box 218, Brooklyn, New York 11204. Phone: 718-851-6428.

3137. Business Communications Co., Inc. 1987. Mass merchandised “healthy” foods. 25 Van Zant St., Norwalk,

CT 06855-1781. 162 p. April. Price: \$1,500.

• **Summary:** In this expensive (\$1,500) market study, there is a chapter titled "The Soyfoods Market," which has the following segments: Summary of market segment. The tofu market. Soy-based frozen desserts. Soy-based beverages. Soy-based yogurt-like products. Other soy-based prepared foods. Fermented soy products. "A move toward the consumption of convenient, good-tasting foods with a healthful image is the food trend of the eighties. There is a strong relationship between healthful foods and the consumer's need for convenience. In the future, food manufacturers can expect the growth of 'healthy' foods to outpace that of the total food market, as more consumers pursue a healthful lifestyle..."

"BCC defines the 'healthy' food market as those segments of food categories that are generally accepted by the consumer as having a healthful image. Total retail sales of all product segments included in this analysis were estimated to have reached \$88 billion in 1986." Address: Norwalk, Connecticut. Phone: 203-853-4266.

3138. **Product Name:** Fantastic Noodles: Miso Vegetable.

Manufacturer's Name: Fantastic Foods.

Manufacturer's Address: 106 Galli Dr., Novato, CA 94947. Phone: 415-883-7718.

Date of Introduction: 1987. April.

Ingredients: Ramen noodle ingredients: whole wheat flour, corn oil. Seasoning/vegetable packet ingredients: Powdered miso (soybeans, rice, salt), dehydrated vegetables (carrots, onion, corn, peas, parsley, garlic celery), dried yeast (molasses grown), spices, soybean oil, toasted sesame oil (1990).

Wt/Vol., Packaging, Price: 2.25 oz (64 gm) paper cup. Retail for \$1.28 at Lucky supermarket (2/91, Lafayette, California).

How Stored: Shelf stable.

Nutrition: Per 32 gm (as prepared 7 oz): Calories 152, protein 5 gm, carbohydrate 19 gm, fat 7 gm, sodium 434 mg.

New Product–Documentation: Ad in Natural Foods Merchandiser. 1987. Aug. p. 34. "Poof! There's something very magical about our new noodle soup. In just 3 minutes it's a hearty cup of lunch. Without all the unnatural stuff." Ad in East West. 1987. Sept. Rear cover. "Instant Gratification." Talk with Fantastic Foods. 1988. Feb. 17. Product was introduced in May 1987. Talk with Gail Hartman. 1988. Sept. 27. Introduced at Anaheim in the spring of 1987.

Product with Label purchased at Lucky supermarket in Lafayette, California. 1991. Feb. 18. Package copyright 1990. Retail for \$1.28. 3.5 inch diameter mouth by 4 inches high. Paper cup with peel-off paper lid wrapped in plastic film. Purple, black, red, and green on beige. Color photo of the prepared product in the cup, seen from the top.

"Ready in 5 minutes all natural 100% whole wheat noodles." In the cup, the seasoning/vegetable packet is made of plastic film. Soyfoods Center product evaluation. Flavor: Very nice; has a curry flavor. Package design: 10, excellent.

Spot in Vegetarian Times. 1995. Oct. p. 18. "Soup cup surprise." Shows the current package design of Miso Vegetable Noodles.

3139. Kuwahara, M.; Nakano, H. 1987. Soybean in Japan. *Eurosoya* No. 5. p. 5-7. April. [1 ref. Eng]

• **Summary:** In 1984 Japan consumed 4,810,000 tons of soybeans. Of the total, 82% is used for oil and meal production, 17% for foods, and the rest (1%) as feed for livestock. 95% of the soybeans used are imported, mainly from the USA (92%) and China (7%). The soybeans from China and Japan, which are higher in protein and lower in oil, are used for traditional foods. Domestic production is small and these soybeans are expensive. They are processed to make tofu (38%), miso (24%), natto (10%), and other foods (11%), while the remaining 17% is used for home cooking.

Soybean breeding started in 1910 in Japan; pure line selection from many local varieties was the main method. After about 1930 cross-breeding became the main method. In 1935 soybean breeding started at the experiment stations of the Ministry of Agriculture, Forestry, and Fisheries (Norinsho). Today there are 5 such stations with a soybean breeding laboratory and 3-5 breeders per lab. From north to south they are Chuo and Tokachi in Hokkaido, Kariwano in Tohoku, Chushin in Nagano, and Kumamoto in Kyushu. Yet from 1950 to 1980 soybean yield increased only slightly, to 1.5 tonnes/ha from 1.3 tonnes. Japan's largest seeded soybean is Tanbaguro; 100 seeds weigh 70 gm. It is preferred for cooking. The smallest is Nattoshoryo; 100 seeds weigh 8-10 gm. It is traded at high prices for natto production.

For decades the Japanese government, for political reasons, has subsidized rice production. But after the late 1970s, when production far exceeded domestic consumption, the government decided to reduce rice acreage and promote the cultivation of other crops, especially soybeans, barley, and wheat in the drained paddy fields (converted upland fields), which accounted for 62% of the soybean cultivated area in 1985, totaling 134,000 ha. Address: Lab. of Soybean Physiology, National Agriculture Research Center, Tsukuba, Ibaraki 305, Japan.

3140. Truesdell, Delores D.; Green, N.R.; Acosta, P.B. 1987. Vitamin B-12 activity in miso and tempeh. *J. of Food Science* 52(2):493-94. March/April. [17 ref]

• **Summary:** The U.S. Pharmacopoeia microbiological assay with *Lactobacillus leichmanii* (ATCC 7830) was used to determine vitamin B-12 activity in light rice miso, dark rice

miso, barley miso, tempeh, and tempeh burger. Unpasteurized misos had the highest B-12 content, averaging 0.21 micrograms/100 gm. Vitamin B-12 activity in miso ranged from a high of 0.25 micrograms/100 gm in barley miso to a low of 0.15 micrograms/100 gm in light rice miso.

Pasteurized tempeh contained 0.12 micrograms/100 gm and tempeh burger contained 0.06 to 0.11 micrograms/100 gm. The variation in vitamin B-12 activity found in these products may be due to different conditions used or produced during fermentation. Collaborative studies and assessment of vitamin B-12 pseudofolate (analog) activity are needed before these foods can be considered a source of vitamin B-12. Address: Dep. of Nutrition & Food Science, College of Home Economics, Florida St. Univ. Tallahassee, FL 32306.

3141. Aihara, Cornelia. 1987. Vega kitchen condiment series: Miso. *Macrobiotics Today* (Oroville, California). May. p. 7-10.

• **Summary:** Contains an introduction to miso, recommends barley miso to rice miso, and gives some miso recipes. Address: GOMF, 1511 Robinson St., Oroville, California 95965.

3142. *East West*. 1987. Vegemite: Australian miso. May. p. 10.

• **Summary:** Developed in Melbourne in 1923, Vegemite is a salty, tangy spread, a concentrated yeast extract, made by the Australian subsidiary of Kraft, Inc. Today Australians consume 5,000 tonnes a year; they spread it on toast, mix it with hot water to make a drink, or add it to stews.

3143. Fehr, W.R. 1987. Breeding methods for cultivar development. In: J.R. Wilcox, ed. 1987. Soybeans: Improvement, Production, and Uses. 2nd ed. Madison, Wisconsin: American Society of Agronomy. xxii + 888 p. See p. 249-93. Chap. 7. [145 ref]

• **Summary:** Contents. 1. Objectives of cultivar development: Seed yield, pest resistance, maturity, lodging resistance, plant height, seed size, seed quality, protein and oil quantity and quality, shattering resistance, resistance to mineral deficiencies and toxicities (e.g. iron deficiency chlorosis), resistance to herbicide injury. 2. Population development: Types of populations (two-parent population, multiple-parent, backcross), hybridization. 3. Inbred line development: Methods (pedigree, bulk, mass selection, single seed descent, early generation testing), comparison of inbreeding methods, number of inbreeding generations. 4. Inbred line evaluation: Selection before or during replicated yield tests, replicated tests, resource allocation for yield evaluation, techniques for plot management (planting, end-trimming, harvest). 5. Breeder seed production: Methods of purification, timing of breeder seed production. 6.

Commercial use of seed mixtures: Marketing of seed, seed yield, overcoming deficiencies of high-yielding cultivars, stability of performance, other considerations.

Concerning seed size: The seed size of widely grown soybean varieties ranges from about 12-18 gm per 100 seeds. Soybeans weighing less than 10 gm per 100 seeds are preferred for natto, whereas soybeans weighing more than 22 gm per 100 seeds are preferred for various food uses. Verde, a variety with green seeds that weigh 32 gm per 100 seeds was developed for processing as a canned or frozen vegetable. Prize, a yellow-seeded variety weighing 27 gm per 100 seeds, has been used for home gardens, and for making roasted soy flour and miso. Address: Iowa State Univ., Ames, IA.

3144. *Florida Grocer* (Miami, Florida). 1987. Products and partners [Simply Natural, Inc.]. May.

• **Summary:** "Principals Bob Pirello and Christina Hayes who founded Simply Natural, Inc. are shown with a variety of new tofu-based products, including a patented "Tofu Cheese," fresh frozen Tofu Pastas, and miso based salad dressings." The products are all non-dairy.

3145. **Product Name:** [Brown Rice Miso].

Manufacturer's Name: Granja Tierra Nueva.

Manufacturer's Address: Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

Date of Introduction: 1987. May.

New Product-Documentation: Letter from Ing. Oswaldo Perez. 1987. July. He made 500 kg.

3146. Jacobs, Barbara; Jacobs, Leonard. 1987. Cooking with seitan: Delicious natural foods from whole grains. New York, NY: Japan Publications. 256 p. Foreword by Aveline Kushi. Index. 26 cm. [16 ref]

• **Summary:** "Seitan is cooked and flavored gluten that has been extracted from [high-gluten] wheat flour. It is very rich in protein, while being extremely low in fat and calories... The traditional Japanese way of seasoning seitan is to cook it in a broth using kombu sea vegetable, natural soy sauce, and fresh ginger root. This... is the one taken for granted as the 'standard seitan flavor' by commercial seitan makers and most people who are familiar with seitan. Many other mixtures of seasonings can be added to the basic seitan broth. Several earlier books on wheat gluten have been written, generally by Mormons.

This book offers you the history, nutritional information, a variety of preparation techniques, and hundreds of recipes that will allow you to convert wheat into a delicious and nutritious food. Especially suited for vegetarians who are interested in high-protein substitutes for animal foods.

Contents: Acknowledgments. Introduction: About wheat gluten, gluten, commonly asked questions about seitan. Getting started. Creating seitan from wheat flour (at home

in 30-40 minutes). Using the seasonings. Additional methods of cooking. Appetizers. Soups. Main dishes and casseroles. Side dishes. Salads. Sauces, dressings and marinades. Condiments. Sandwiches. Desserts. From the pantry. Sample lunch and dinner menus. Appendix: 1. All about saving and using wheat starch. 2. Storing uncooked seitan. Storing cooked seitan. 4. Commonly encountered problems and some solutions. Nutritional information. Questionnaire for readers. About our ingredients (discusses natural soy sauce, and soymilk). Glossary (includes fu [dried gluten], miso, natural soy sauce or shoyu, soymilk, tamari, tofu). Bibliography.

Recipes containing soyfoods include: Miso soup with fu and wakame (p. 79). Miso-lemon dressing (p. 171). Tangy miso-tahini sauce (p. 180). Tofu spread with variations (p. 181). Seitan-tofu paté (p. 181-82). Tofu "feta cheese" (p. 192-93). Miso-tahini sauce or spread (p. 209).

When Michio and Aveline Kushi started the Seventh Inn Restaurant in Boston in 1971, they introduced seitan, a food that George Ohsawa had popularized in Japan, especially among macrobiotic people. Yumie Kono taught the chefs, one of whom was Lenny Jacobs, how to make seitan (p. 5).

The Introduction (p. 17-18) states: "Seitan is a food with a long history. Although not widely known in the West, it was traditionally eaten in China, Korea, Japan, Russia, the Middle East, and probably many other countries that grew wheat. In America, the Mormons and the Seventh Day Adventists made gluten and used it on a regular basis... The name *seitan* comes to us from the Japanese, who have prepared cooked wheat gluten for hundreds of years... Some natural foods industry insiders think seitan will become the 'tofu of the '80s.'

"Seitan was introduced to the U.S. natural foods industry about sixteen years ago [1970] when a Japanese variety, shrink-wrapped and quite dry and salty, was first imported. There had been several other varieties available from vegetarian groups, primarily the Seventh Day Adventists and the Mormons. Chinese restaurants have also been preparing wheat gluten for many years. The Chinese call it *mien ching*, or *yu mien ching*. Chinese restaurants often refer to it as 'Buddha Food,' claiming that it was developed by Buddhist monks as a meat substitute. There is also a dried wheat gluten available in Oriental food markets called *fu* by the Japanese and *k'ao fu* or *kofu* by the Chinese."

In the USA, about 130,000 pounds of seitan are made each year. The market is growing rapidly. Current U.S. seitan manufacturers are: 1. Upcountry Seitan in Lenox, Massachusetts, the largest known producer in America, which makes about 600 lb/week and distributes it in 6 states. The company, started about 3½ years ago (counting from Jan. 1987, i.e. founded in about mid-1983) by Win Donovan, is now owned and operated by Wendy Rowe and Sandy Chianfoni. They get a yield of 1.33 (i.e. 90 pounds of

flour result in 120 pounds of seitan). 2. Rising Tide Natural Market in Long Island, New York. Michael Vitti has been making seitan for 6 years. About 1/3 of his production is bought by another company for use in making sandwiches. 3. Grain Dance in San Francisco, California. Ron Harris has been making seitan for 8 years and is currently selling 250 lb/week in 8 oz. packages. 4. Creative Kitchens in Miami, Florida. Yaron Yemini has been making seitan for 3 years. and has seen a 5-fold increase during this time. He now makes 120 lb/week. His yield is 0.7. 5. The Bridge in Middletown, Massachusetts. The company was founded in March 1981 by Roberto Marrocchesi and Bill Spear. They were making seitan by Oct. 1982. Steve Lepenta now makes 400 lb of cooked seitan each week and claims that sales have doubled in the past two years. 6. Maritime Foods in Portland, Maine. Rosemary Whittaker makes 50 lb/week of seitan. 7. Real Foods of Towson, Maryland. Sharon Warren has been making seitan for 6 years and now makes 150 lb/week.

Reviewed by Linda Elliot in East West. June 1987, p. 94. Note: Talk with Lenny Jacobs. 1990. Sept. 10. There has been little growth in the U.S. seitan industry since the book was published in May 1987. Problems with price and quality. If seitan is frozen, after defrosting it can become spongy and soggy. Address: Massachusetts. Phone: 617-232-1000.

3147. Katagiri, Mitsuaki; Shimizu, S.; Kaihara, H.; Katagiri, C. 1987. [Determination of esterified and free carboxylic acids in the various kinds of natto by gas chromatography]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 34(5):305-08. May. (Chem. Abst. 107:174685). [9 ref. Jap; eng]

• **Summary:** Free and esterified fatty and organic acids in various samples of natto (9 types of itohiki-natto and 6 types of tera-natto [soy nuggets]) were determined by a modified standard method and compared with those of common miso. Ethyl esters of fatty acids present in large quantities in miso were not detected in itohiki-natto, but found in small quantities in tera-natto. Lactic acid was the dominant organic acid in hama-natto, (470.1 mg/100 gm) and in tera-natto (26.2 mg/100 g) and was not detected in either itohiki- or hoshi-natto. Average contents of the major volatile organic acids in itohiki-natto were (mg/100 gm): acetic acid, 124.7; propionic acid, 28.4; iso-butyric acid, 44.1; and iso-valeric acid, 46.7. The last 2 acids, which gave unfavorable odor at higher concentrations, were found in small amounts in hama-natto and tera-natto. Address: Dep. of Domestic Science, Iida Women's Junior College, Matsuo 610, Iida-shi, Nagano 395, Japan.

3148. Madison, Deborah; Brown, Edward Espe. 1987. *The Greens cookbook: Extraordinary vegetarian cuisine from*

the celebrated restaurant. Toronto and New York: Bantam Books. xx + 396 p. Index. 26 cm. [37 ref]

• **Summary:** Contents: Foreword, by Marion Cunningham. Introduction by Deborah Madison. Preface to the recipes by Edward Espe Brown. Salads. Soups and stocks. Sandwiches and breads. Pizzas. Pasta. Gratins, stews, and casseroles. Tarts and timbales. Filo pastries, fritattas, crepes, and roulades. Companion dishes. Sauces, relishes, and butters. Desserts. Appendix: Seasonal menus, wines and vegetarian food, glossary of ingredients, useful kitchen tools, bibliography.

Soy-related recipes include: Miso soup (p. 63). Grilled tofu sandwich (p. 121). Tofu salad sandwich (p. 122). Vegetable brochettes with marinated tofu (p. 302). Marinated tofu (p. 304).

3149. Mori, Haruhiko. 1987. Shōwa 61 nendo ni okeru shōyu, miso no kenkyū gyōseki [Review of research reports on soy sauce and miso in 1986]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 82(5):329-51. May. [534 ref. Jap]

Address: Noda Inst. for Scientific Research, Noda, Japan.

3150. Mounts, T.L.; Wolf, W.J.; Martinez, W.H. 1987. Processing and utilization. In: J.R. Wilcox, ed. 1987. Soybeans: Improvement, Production, and Uses. 2nd ed. Madison, Wisconsin: American Society of Agronomy. xxii + 888 p. See p. 819-66. Chap. 21. [154 ref]

• **Summary:** Contents. 1. Soybean oil. 2. Soybean protein. 3. Soybean processing. 4. Soybean oil processing. 5. Food uses of soybean oil. 6. Nonfood uses of soybean oil. 7. Defatted soybean protein processing. 8. Utilization of defatted soybean protein products. 9. Full-fat soybean products. Address: 1-2. NRRC, Peoria, Illinois; 3. USDA-ARS, Beltsville, Maryland.

3151. Westbrae Natural Foods. 1987. Distributor catalog, FOB pricing: June 1, 1987. Spring / summer. Emeryville, California: Westbrae. iv + 19 + [12] p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on a tan background. Pages i-iv are general information, 1-10 are a computer-printed price list, and 11-19 are a product glossary. There are also 1-page, single-sided inserts (sell sheets, many in full color) of various Westbrae products. Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (415) 658-7518 (orders).

3152. Ebine, Hideo. 1987. Re: Can miso prevent or cure cancer? Letter to William Shurtleff at Soyfoods Center, June 29—in reply to inquiry. 2 p. Typed, with signature. [Eng]

• **Summary:** Summarizes the research conducted to date. In 1981, early research was conducted separately by Prof. Kimura and Dr. Hirayama. He believes that it is very

difficult to conclude that there is solid evidence showing that miso can either prevent or cure cancer. Address: Director, Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo, Japan.

3153. Ebine, Hideo. 1987. Studies on the effect of miso or miso soup to reduce cancer risk. Tokyo, Japan. 2 p. Unpublished typescript. June 29. [Eng]

• **Summary:** “Hirayama first presented a paper to the 40th Annual Meeting, Japan Cancer Association, 1981. Since miso soup is one of the most important foods for Japanese food life, the presentation attracted keen interest of the newspaper, *Asahi Shinbun* and was reported as the top news at the first page of September 27, 1981.”

Hirayama pointed out that the observed benefits could come from selected nutrients in the miso. Prof. Kimura and his colleagues found that miso contained some antimutagenic substances such as the ethylester of linolenic acid. Several other studies are now underway.

“As stated by Hirayama, the effect of miso soup is possibly supported by some other substances closely associated with the intake of miso soup such as green-yellow vegetables, Michioka (1985), Akita University, published a paper on the anti-mutagen included in green-yellow vegetables which are often supplied with miso soup in large amount easily.” Address: Director, Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo, Japan.

3154. Diamond, Harvey; Diamond, Marilyn. 1987. Living health. New York, NY: Warner Publications. xviii + 446 p. Index. 24 cm. [423* ref]

• **Summary:** This extensively documented, hardcover book, published by Warner after *Fit for Life*, became *Fit for Life II*. It is a book based on the philosophies of Natural Hygiene and a vegan diet, free of all animal products, and rich in fresh fruits and fruit juices. In the process, the author’s negative attitude toward tofu (expressed in *Living Health*) changed into a positive one. They found that tofu was a very alkaline food.

At Acknowledgments: “Special mention must also be made of the great health reformers, our mentors and predecessors, who under extreme pressure and persecution fought the battle for freedom of choice in health care: Isaac Jennings, Russell Trall, John H. Tilden, Sylvester Graham, Florence Nightingale, Herbert M. Shelton, and all those others far too numerous to mention.”

Concerning tofu, in the chapter titled “Questions frequently asked,” Harvey Diamond writes: “What about tofu? There is good news and bad news. You know why tofu has no smell and no flavor unless you add garlic, onions, tamari, etc.? Because it is processed at a heat so intense that nothing alive could possibly survive and the process is repeated *three times!* Tofu is absolutely devoid of any nutrients whatsoever. The contention that tofu is a good

source of protein is as truthful as the contention that the moon is made of green cheese. Now the good news. People generally eat tofu because they are trying to move away from flesh foods and tofu helps them do that. *Great!* Tofu is so much less harmful than flesh foods that I would wholeheartedly support you in doing so. But do so with the idea in mind that you will eventually give up tofu as well, or at least cut back on it. It is merely a filler food. Just as with meat, tofu should not be eaten more than once a day, and should be properly combined.”

The book also contains a recipe for Miso and vegetables soup (p. 376-77). In the index, there is no listing for soy- (including soymilk or soy sauce), tamari, or tempeh.

Chapters 2 and 3 tell about the authors (autobiographical): Harvey was born in 1945. He had severe stomachaches and frequent colds starting when he was a child. He was extremely thin. From age 18-22 he served in the U.S. Air Force and his last year of duty was spent in Vietnam. His weight ballooned up to 202 pounds but his piercing stomachaches did not go away. His father died of stomach cancer at age 57. At this turning point, Harvey decided to devote all his time to learning about how to become healthy. After long searching, he discovered Natural Hygiene in 1970 in Santa Barbara, California. In one day, after learning the one simple principle of proper food combining, his stomachaches went away (they have never returned) and he soon lost 50 pounds. “So I studied Natural Hygiene on my own, reading every book I could get my hands on pertaining to the subject and involving myself with people in Santa Barbara who had incorporated its principles into their life-styles. Three years later I established myself in Los Angeles, continuing my studies while I counseled people informally on Natural Hygiene... After eight years of independent study much to my excitement and delight, a complete course on Natural Hygiene principles finally became available in 1978” from the American College of Health Science. In Feb. 1983 Harvey received his PhD in nutritional science from this unaccredited college.

Marilyn was born in about 1944. Starting in the 1950s she began to suffer severely from a spastic digestive tract. At age 20 she underwent knee surgery in New York, a turning point in her search for health. By the time she was in her mid-twenties, she was married with two children, but the pain from her stomach spread to her back, so she began to take the painkiller Valium regularly. In 1971 she moved from New York to Los Angeles and began to change her lifestyle and diet. “I used whole grains, cut down on alcohol, and became very uncomfortable with my dependency on Valium.” So she stopped taking the drug. In 1975 she met Harvey in Venice, California, where he was working at a produce store. She was ill and desperate, having suffered for over two decades with her digestive tract pain. Two months later they were married, and later

they had a child. After going through a painful process of detoxification and withdrawal from Valium, Marilyn became the picture of health.

3155. *Economic World*. 1987. Miyako mainstay of miso market. June. p. 46.

• **Summary:** Miyako Oriental Foods was established in 1976 as a joint venture owned 65% by Mutual Trading Co. and 35% by Yamajirushi Jozo Co. Ltd. of Tokyo. Nearly 3/4 of its revenues (\$1 million in 1986) come from the Los Angeles area Oriental community. Miyako currently makes 50 tons/month of miso and has a 50% share of the U.S. market. The yen’s appreciation has helped business. In 1986 Miyako had sales of \$1 million; Vice president Teruo Shimizu anticipates a 20% growth in sales in 1987. His company would eventually like to have a plant on the East Coast of the United States. A photo shows three of Miyako’s products. Address: New York.

3156. **Product Name:** Fresh Miso Dressing (Creamy White).

Manufacturer’s Name: Good Foods Inc.

Manufacturer’s Address: P.O. Box 8542, Santa Cruz, CA 95061.

Date of Introduction: 1987. June.

Ingredients: Shiro [white] miso, safflower oil, pure water, rice vinegar, rice wine, tamari, barley malt, spices, vegetable gum.

Wt/Vol., Packaging, Price: 12 oz glass jar.

How Stored: Refrigerated.

New Product–Documentation: Label. 1987. 1.5 by 3.5 inches. Self adhesive. Red and brown on greenish gold.

“The Conscious Kitchen. Delicious on fish, salads, burgers, raw or steamed vegetables.” Soyfoods Center product evaluation. 1987. June 13. Too salty! Miso is the first ingredient.

3157. Johnson, Kirk. 1987. Hidden fats in whole foods diets. *East West*. June. p. 62-68.

• **Summary:** A full-page table (p. 65) titled “How the substitutes stack up” shows total fat and serving size for the following categories: Dairy products. Substitute dairy products. Meat. Substitute meat products. Frozen dinners. Miscellaneous. The substitute dairy products include: Tofu Cream Chie (21st Century). Soya Kaas (soy cheese from American Natural Snacks). Tofutti (Tofu Time). Le Tofu (Brightsong Foods). Ice Bean (Farm Foods). Tofu, silken (Nasoya). Tofu, soft (Nasoya). Tofu, firm (Nasoya). Soybean margarine (Willow Run). Soymilk (Edensoy). Soymilk (Health Valley). Soymilk (Vitasoy).

Substitute meat products include: Fakin’ Bacon (Tempehworks). Tofu Wieners (Yves). Tofu Pups (Tempehworks). Vegie Burger (Bud, Inc.). Tofu Burger (Bud, Inc.). Gardenburger (Wholesome & Hearty). Tofu

Sausage (Vegetable Protein Co.). Tempeh, 3-grain (Tempehworks). Seitan (“wheat meat”).

Meatless frozen dinners include: Tofu Lasagna (Legume). Meatless Pepper Steak with Kofu & Noodles (Legume). Sweet and Sour Tofu (Legume).

Miscellaneous products include: Nasoyannaise (Nasoya Foods). Salad dressing, Creamy Tofu (Nasoya). Miso.

3158. Yamabe, Shigeo; Kondo, Yasuo. 1987. Shihan fukurozume mugimiso no hozon-chû ni okeru kagaku-teki seibun henka [Changes in the chemical composition of commercial packed barley-koji miso during storage]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 34(6):347-55. June. [24 ref. Jap; eng]

• **Summary:** Investigates changes in the composition, oxidative activity, sugar, and lipid components of commercial barley-koji miso during 3 months storage at -10, 4, 20, and 37°C. Address: Tokyo Dietitian Academy, 2-23-11 Ikejiri, Tokyo 154, Japan.

3159. Torii, Yasuko. 1987. New developments with tempeh in Japan (Interview). Conducted by William Shurtleff of Soyfoods Center, July 1. 2 p. transcript.

• **Summary:** Torigoe-Seifun stopped making tempeh in mid-1987. They had a hard time popularizing it. Marusan’s tempeh is not selling well. They, too, are thinking of stopping. Mr. Kanasugi and the Natto Assoc. are trying to cooperate with Marusan. They suggest selling “tempeh miso,” made by mixing tempeh with rice or barley koji, a sort of Finger Lickin’ Miso. Barley koji works best, and the resulting tamari is delicious. Only Mr. Kanasugi is doing tempeh research. He makes a spread like peanut butter. Mr. Ose is still making tempeh but his business, Udai, is not doing well. No one is left at the Ministry of Agriculture with an interest in tempeh: Mr. Katoh went to work with FAO in Rome and Ohta went to Showa Seiyu.

Why did tempeh fail to catch on in Japan? 1. It was poorly marketed. 2. The ads and Torigoe aimed at the older generation who still know how to deep fry foods. 3. It is not clear whether the attempted tie-in with natto was helpful or harmful. Natto is a convenient fast food. Now tempeh is not even sold at Natural House, the natural foods supermarket. Organic soybeans from Living Farms are now widely used in Japanese miso and natto. Address: Kamitsuchidana 324, Ayase-shi, Kanagawa-ken 252, Japan. Phone: 0467-76-0811.

3160. Hapgood, Fred. 1987. The prodigious soybean. *National Geographic* 172(1):66-91. July.

• **Summary:** Superb photos and an interesting original color painting done by artist James Gurney, in the style of Norman Rockwell, shows more than 60 products containing soybean ingredients (both food and industrial). But, except

for the first 2 pages, the text of this far-ranging article is mediocre to embarrassingly erroneous; even the *National Geographic* editors didn’t like it, but Hapgood refused to correct his many errors. For example, large bold print at the top of the first page reads: “For centuries Chinese have called the Soybean ‘Yellow Jewel’ or ‘Great Treasure.’ Now this prodigious bean is seen by some as a weapon against world hunger.” Note: This is the earliest English-language document seen (July 2007) that uses the term “Yellow Jewel” or “Great Treasure” to refer to the soybean.

Superb photos show: Selling tofu in China. Harvesting soybeans with combines. A tractor high over the hold of a cargo ship loaded with soybeans. Making koji at Kikkoman. 42 different colors and shapes of soybean seeds. Henry Ford on 2 Nov. 1940 wielding an ax against a car trunk lid made from a highly resilient soybean-derived plastic. Yuba drying over pans of soymilk. A Japanese woman with her dried-frozen tofu drying under the farmhouse eaves. Favorite Japanese soyfoods dishes: Dengaku, Simmering tofu, yuba, and miso dumplings. Hatcho miso in vats with stones piled high on each in an earthquake-proof pyramid shape. *Mame-maki* (bean-throwing ceremony) at Setsubun, held each February in Japan; the beans are thrown from small wooden measuring boxes (*masu*). The *hari-kuyo* ceremony for broken needles in Tokyo. A martial arts master and former Shaolin temple monk in China testing his strength by plunging his arm elbow-deep into a soybean-packed barrel. Address: Boston.

3161. **Product Name:** Organic Barley Miso.

Manufacturer’s Name: Junsei Yamazaki.

Manufacturer’s Address: Route 1, Box 1333, Orland, CA 95963. Phone: 916-865-5979.

Date of Introduction: 1987. July.

Ingredients: Organically grown soybeans, organic barley, well water, sea salt.

Wt/Vol., Packaging, Price: Bulk. 15 lb costs \$72.00 incl. shipping.

How Stored: Shelf stable.

New Product–Documentation: Yamazaki. 1987. The Junsei Yamazaki Miso and Umeboshi Story. 6 p.

3162. *Natural Foods Merchandiser*. 1987. 8th Annual Natural Foods Merchandiser merchandising awards [Gold: Eden Foods’ Edensoy, and Fantastic Foods’ Fantastic Noodles (Miso Vegetable)]. July. p. 28-29.

• **Summary:** The Edensoy package design was developed by Group 243 in Ann Arbor. “The look is inviting yet sophisticated, with both sizes of Tetra-pak boxes bearing loosely impressionistic illustrations of landscapes in tranquil colors. Design criteria included warm, energetic food that was natural, refreshing, and healthful.”

3163. Otsuka, Shigeru. 1987. *Shōyu sekai e no tabi* [A journey into the world of shoyu]. Tokyo: Toyo Keizai Shinpo-sha. 230 p. Illust. No index. 20 cm. [22 ref. Jap]
 • **Summary:** Contents: A pedigree of shoyu (p. 11). The road to shoyu (p. 35). Shoyu and the world (p. 67). A friend of meat cookery (p. 103). Shoyu... make in the USA (p. 115). Shoyu as a forerunner of Japanese culture (p. 129). A visit to the real centers of the Japanese food boom (p. 159). Shoyu recipe contest (p. 209). Mini-science on shoyu (p. 213). Conclusion (p. 219). Postscript (p. 225).

In the section on “Shoyu and the World,” subsection “Exports during the Edo Period” (p. 67-79) it is noted that: “In a book-keeping book under the date Man-en 1 (1860), Aug. 16 it is stated that 4 ceramic bottles of Japanese shoyu were shipped to Jakarta (Java), Indonesia. The shoyu that was exported to Europe was sent via Jakarta, Indonesia, to Holland. It was shipped in ceramic bottles each containing a volume of 3 gō (540 ml, or about 1 pint). On each bottle, in roman letters, was written the fact that the bottle contained Japanese shoyu. Terms such as “Japansch Zoya” or “JapanschZoya” or “Jap. Soya” appeared on the bottles.

One photo (p. 76) shows four (another shows three) of these bottles. Below this name, near the base of many bottles was written the brand “CPD” which is thought to have stood for “Comprador.” During the Kan-ei period (1624-1630) some rich merchants in Nagasaki established a company named *Konpura-sha*. The merchants who ran it were called Comprador. [Note: They are now (Oct. 2007) generally known in English as the “Comprador Merchant Guild;” Japanese: *Konpura Nakama*].

It is recorded in the *Kōka Nisshi*, the diary of a voyage by Tōsei? Yanakawa in 1860 (Ansei 7) from Japan to the USA by boat, that “after we landed in Washington state, we didn’t have any miso or shoyu, so we had nothing but salt with which to season our meals.”

In 1765 the French encyclopedist Denis Diderot (lived 1713-1784) wrote a section in his *Encyclopedie* titled “souï ou soi” about Japanese soy sauce. Note that the first term, pronounced soy, is today’s French word for soy sauce. The second term, pronounced “swa” apparently no longer exists.

Two black-and-white photos (p. 47) show the outside and inside of the Goyo-Gura in Noda. Page 93 shows a typical shoyu section in a Japanese supermarket. Address: Toyonaka-shi, Osaka-fu, Japan.

3164. Yamazaki, Junsei. 1987. The Junsei Yamazaki miso and umeboshi story (Brochure). Route 1, Box 1333, Orland, CA 95963. 6 p.

• **Summary:** Junsei arrived at Chico-San in May 1963. His wife, Kazuko, came in 1968. Later that year he went to New York to help Michio Kushi with his restaurant. He returned to Chico-San the following spring (1963?) where he started to make traditional miso and soy sauce. He had learned how while growing up on his family’s farm in Chiba prefecture.

He had attended Tokyo Agricultural University and majored in organic chemistry. Also at Chico-San he made rice syrup, called Yinnies. Now he and Kazuko live on their 5-acre farm in Orland, California. He makes organic miso (brown rice, rice, and barley) and she umeboshi salt plums with shiso. Both farm. Address: Orland, California. Phone: 916-865-5979.

3165. Ayres, Rosalie; Steinkraus, K.H.; Olek, A.; Farr, D. 1987. Characterization of the semi-purified membrane bound ATPases of *Zygosaccharomyces rouxii* adapted to 18% NaCl. *International J. of Food Microbiology* 4(4):331-39. Aug. [17 ref]

• **Summary:** “*Zygosaccharomyces rouxii* is a yeast with spoilage capabilities in high sugar foods such as maple syrups, liquid sugars and chocolate syrups. Its ability, however, to ferment under high salt (18% NaCl) conditions makes it an essential organism in soy sauce and miso fermentations.” Address: 1-3. Inst. of Food Science, Cornell Univ., Geneva, New York 14456; 4. Nestle Products Technical Assistance Co. Ltd., Nestle Ave. 55, CH-1800 Vevey, Switzerland.

3166. Bowles, Willa Vae. 1987. The soy revolution! *Total Health*. Aug. p. 24-29. See followup in Oct. issue, p. 55. [1 ref]

• **Summary:** Soybean exports during the last fiscal year amounted to \$11,000 million. They help keep the U.S. trade deficit, almost \$170,000 million in 1986, from rising even higher. Tofu mixed 50/50 with any nut butter makes a fluffy spread for added protein and reduced fat and calories.

3167. Honma, Nobuo. 1987. Miso no kōki to kōki seibun ni tsuite. II. [Odor and odor components of miso. II.]. *Nippon Jozo Kyokai Zasshi* (*J. of the Brewing Society of Japan*) 82(8):547-53. Aug. [56 ref. Jap]

• **Summary:** Components include carbonyl compounds and esters. Address: Kenritsu Niigata Joshi Tanki Daigaku.

3168. McSweeney, Daniel. 1987. Consumer survey 1987. *Whole Foods*. Aug. p. 25-29.

• **Summary:** Percentage of 600 natural foods consumers surveyed who purchased a certain type of soyfood product during the years 1985, 1986, 1987. NA = Not Available. Tofu: NA, 85.1%, 83.4%. Miso: 50.0%, 71.1%, 69.7%. Soymilk: NA, 40.4%, 54.4%. Nondairy Frozen Desserts: 37.6%, 44.6%, 46.0%.

3169. Pollard, Jean Ann. 1987. The new Maine cooking. Lance Tapley, Publisher, P.O. Box 2439, Augusta, ME 04330. 288 p. See p. 22-24, 94, 202-15, 221. Illust. Index. 28 cm.

• **Summary:** Mostly recipes, arranged by season, including tofu (13), tempeh (6), miso (1), plus how to make tofu at

home. Address: Winslow, Maine.

3170. Swinbanks, D.; Johnston, K. 1987. Chernobyl takes macaroni off Japan's menu. *Nature (London)* 329(6137):278. Sept. 24-30. *

• **Summary:** Miso exports to European countries increased after the April 1986 accident at the Chernobyl nuclear power plant in Northern Ukraine, because it was believed that miso consumption could ameliorate the harmful effects of exposure to atomic radiation.

3171. Perez, Oswaldo. 1987. El miso o pasta anejada de soya [Miso or aged soybean paste: The soybean in human foods]. *La Era Agrícola (Merida, Venezuela)* No. 2 & 3. Sept. p. 17. [Spa]

• **Summary:** Miso is one of Japan's three main soyfoods. Discusses its use and nutritional value. Address: Granja Tierra Nueva, Aldea San Luis, La Azulita, C.P. 5102, Estado Merida, Venezuela.

3172. Snyder, Harry E.; Kwon, T.W. 1987. Soybean utilization. New York, NY: Van Nostrand Reinhold Co. xii + 346 p. Illust. Index. 23 cm. An AVI Book. [381 ref]

• **Summary:** Contents. Preface. 1. Production, marketing, and sources of information: Introduction, agricultural production, marketing, sources of information. 2. Morphology and composition: Morphology, chemical composition. 3. Processing of soybeans: Preparation, flaking, expellers, solvent extraction, oil refining, protein products. 4. Quality criteria for soy products: Protein and oil products. 5. Functional properties of soy proteins: Interactions of soy proteins with water, interactions of soy proteins with lipid, foaming, commentary on functionality. 6. Nutritional attributes of soybeans and soybean products: Inherent attributes of soybeans, changes due to processing.

7. Oriental soy food products: Traditional nonfermented soybean food products, traditional fermented soybean food products. 8. Soybean-supplemented cereal grain mixtures: Protein-rich food mixtures containing soy flours, composite flours containing soy flour, cereal blends containing soybeans. 9. Soy protein food products: Baked goods, meat products, dairy products, other foods containing soy protein. 10. Soybean oil food products: Salad and cooking oils, mayonnaise, and prepared salad dressings, shortenings, margarines and related products, soybean lecithin products. 11. Grades, standards, and specifications for soybeans and their primary products: Grades of soybeans, specifications for soybean meals and flours, trading specifications for soybean oils, specifications for lecithins, standards for the use of soy protein products in other foods. References in each chapter. Glossary.

This book is well written (though largely a repetition of previous works) in the area of modern soy protein products. It is weak and poorly researched in the area of "Oriental

Soy Food Products," which comprises only 1 chapter (22 pages) of the total, making the book unbalanced. The author of this chapter seems to be almost completely unaware of the many major developments in the Western world during the past 10 years.

Note the following Korean soyfood terms: Fresh soybean = Put Kong. Toasted soy powder = Kong Ka Ru. Soy sprouts = Kong Na Moal. Soymilk = Kong Kook or Doo Yoo. Yuba (Soymilk film) = no name. Tofu (Soy curd) = Doo Bu. Tempeh (Fermented Whole Soybeans) = no name. Natto = no name. Soy sauce = Kan Jang. Miso (Soy Paste) = Doen Jang. Fermented tofu (Fermented Soy Curd) = no name. Fermented okara (fermented soy pulp) = no name.

Note: This is the earliest English-language document seen (Dec. 2005) that uses the term "Toasted soy powder" to refer to roasted soy flour. Address: 1. Prof., Food Science Dep., Univ. of Arkansas, Fayetteville, AR; 2. Principal Research Scientist, Div. of Biological Science & Engineering, Korea Advanced Inst. of Science and Technology, Seoul, South Korea.

3173. **Product Name:** Veggie Loaf [Sprouted Wheat, or Wheat-Free Sprouted Rye].

Manufacturer's Name: Sprout Delights.

Manufacturer's Address: 13090 N.W. 7th Ave., North Miami, FL 33168. Phone: 305-687-5880.

Date of Introduction: 1987. September.

Ingredients: Incl. sprouted wheat or rye, carrots, onions, mellow white miso, arame, dulse, nori.

New Product-Documentation: Talk with Steve Bern of Sprout Delights. 1992. July 11. He has run this bakery, which specializes in breads made of sprouts, like the early Essene sprouted grain breads made by Lifestream in British Columbia, Canada, but also makes a host of other innovative natural-food products. These products were introduced in about Sept. 1987.

3174. Pirello, Robert J. 1987. Process for preparing a tofu cheese and product. *U.S. Patent* 4,701,332. Oct. 20. 4 p. Application filed 15 Nov. 1985. [8 ref]

• **Summary:** A tofu brick is coated with a mellow white miso and aged to produce a smooth and compact texture after which the miso is scraped from the brick and the brick is soaked in fresh water to remove the salt. The brick is then whipped until a creamy texture is achieved. Address: 932 Pine St., Philadelphia, Pennsylvania 19107.

3175. Rose, Richard. 1987. Re: Personal observations on soyfoods at Natural Foods Expo in Philadelphia. Letter to William Shurtleff at Soyfoods Center, Oct. 28. 1 p.

• **Summary:** Show trends: Many new companies introducing many new soyfoods, some very high quality in concept and execution. Established soy companies now

entering such as Miller Farms and Witte/White Wonder. The Soyfoods Pavilion seemed to have less both space and be more spread out. The only Legume product at the show was the tofu chocolate bar (will the Barat Bar save Legume?). Tomsun Foods did not have a booth. Ice Bean was the only soy frozen dessert there. A proliferation of soy cheeses, aseptic soymilks, glass-packed spreads, meat analogs. Nasoya will be making Simply Natural's tofu/miso spread for them; it has just been patented. Simply Natural's tofu cheese is now called Soyelite, and their pasta is Pasta Lite. Little-seen regional companies were there, including Michele's and Northern Soy. Paul Obis adds: Many at the show were lamenting the apparent failure of Jofu. They have spent all their money.

The Rose International letterhead states: EasyLink Mailbox 62978515. Telex 990027 (Rose Intl UQ). Address: President, Rose International, P.O. Box 2687, Petaluma, California 94953-2687. Phone: 707-778-7721.

3176. American Miso Co. 1987. A living art: The American Miso story (Ad). *East West*. Oct. p. 8.

• **Summary:** This one-third page vertical black-and-white ad begins: "These days, even in Japan, 99% of the miso is commercially made. Mass production and high technology characterize today's miso. The timeless art of handmade miso is dying.

"However, near the Smoky Mountains in the green, rolling country of western North Carolina, the American Miso Company continues a centuries old tradition of hand-crafted miso." The Miso Master logo shows a Japanese miso master, with a knotted headband, in front of a large wooden vat of miso. Address: Rutherfordton, North Carolina 28139. Phone: 704/287-2940.

3177. Bradner, Norman. 1987. Soybeans for the food market. *Seed World (Des Plaines, Illinois)*. Oct. p. 44.

• **Summary:** Thailand imports nearly 100,000 tonnes/year of soybeans for food use. Japan imports 65,000 to 70,000 tonnes of small beans to make natto. Natto beans can be less than 5 mm in diameter and have a yellow cotyledon and hilum. For tofu, soymilk and miso, importers want high protein, low oil, maximum water soluble proteins, low phytate, high 11S protein fraction, large seed size and high sugar content. But a variety judged good one year can be deemed unsuitable the next. Environmental conditions during seed development play a significant role in determining the final chemical composition. Address: Pulse Breeder, King Agro, Inc., Chatham, Ontario, Canada.

3178. *East West Journal*. comp. 1987. Shopper's guide to natural foods. Garden City Park, New York: Avery Publishing Group. x + 204 p. Illust. Index. 28 cm. [66* ref]

• **Summary:** The book from the editors of the *East West Journal* is mainly a series of articles published in *East West*

Journal or special articles by individual authors. Contents: 1. Introduction to natural foods. 2. Grains. 3. Breads, pastas & seitan. 4. Vegetables. 5. Sea vegetables. 6. Labeling and standards. 7. Fruits. 8. Seeds & nuts. 9. Beans (incl, tofu, tempeh, miso, azuki). 10. Beverages. 11. Condiments (incl. tamari, shoyu, vinegar, salt, umeboshi). 12. Cooking ingredients. 13. Pressure cookers. Address: New York; Massachusetts.

3179. *East West*. 1987. Natural Foods: The best and worst. 2nd annual awards. Oct. p. 32-36.

• **Summary:** Only packaged natural foods with nationwide distribution are judged. Best soymilk: Edensoy, but the Tetra Brik package doesn't biodegrade, burn, or recycle. Best sandwich spread: Nasoyanise by Nasoya Foods. Worst shoyu: Natural shoyu from Erewhon. So heavy it is best dispensed with an eye dropper. Best Tamari: San-J. Worst line of fake meat products: Worthington Foods. Worst beans: Honey Baked Style Vegetarian Beans with Miso from Health Valley. Best Miso: Miso Master Mellow White Miso by American Miso Co. for Great Eastern Sun.

3180. Golbitz, Peter. 1987. Soya interview: Gordon Bennett, Westbrae Natural Foods: Soyfoods past, present and future. *Soya Newsletter (Bar Harbor, Maine)*. Sept/Oct. p. 3, 10-11.

• **Summary:** Founded in 1970, Westbrae was built on the premise that healthy food makes a healthy planet. Bennett has been president since 1975. The company now has over 200 products. Soyfoods account for about 35% of sales, down from 50% 1-2 years ago. The company is reducing imports, focusing on American-made foods, and importing Westsoy soymilk from Southeast Asia [actually Vitasoy in Hong Kong] rather than Japan, including a new liter size. Address: Bar Harbor, Maine.

3181. **Product Name:** Tempehworks Macro Power Tempeh.

Manufacturer's Name: Lightlife Foods, Inc.

Manufacturer's Address: P.O. Box 870, Greenfield, MA 01302.

Date of Introduction: 1987. October.

Ingredients: Organically grown soybeans, carrots, sea vegetables, scallion, aduki beans, sesame, miso.

Wt/Vol., Packaging, Price: 8 oz vacuum pack. Retail for \$1.79.

How Stored: Refrigerated, 45 day shelf life. Or frozen.

New Product-Documentation: Leaflet. 1987. Lightlife Foods. "New Products Coming From Lightlife this Fall." *Soya Newsletter*. 1987. Sept/Oct. p. 6.

3182. Murrieta Foundation. 1987. Murrieta Hot Springs vegetarian cookbook. Revised and expanded including Spa

Cuisine. Summertown, Tennessee: The Book Publishing Co. 232 p. Color plates. Index. 23 cm.

• **Summary:** This is a vegetarian (but not a vegan) cookbook. The index contains listings for 26 tofu recipes, 5 miso recipes, and 2 tamari recipes. There are definitions of “liquid aminos” (HVP), miso, tamari, tempeh, and tofu. Many of the recipes are favorites from the Oasis Restaurant at the Hot Springs, where the three basic lacto-ovo vegetarian diets (as taught by Dr. Randolph Stone, 1890-1982, founder of Polarity Therapy) are The Purifying Diet, The Health Building Diet, and the Gourmet Vegetarian Diet. Address: Murrieta Hot Springs, California.

3183. Ontario Ministry of Agriculture and Food. 1987. Soybean buyers mission from Japan, Hong Kong, Malaysia, Singapore, October 10-20, 1987. Toronto, Ontario, Canada: Ontario Ministry of Agriculture and Food. 23 p. 30 cm. Saddle stitched. [Eng]

• **Summary:** Contents: Mission members (with a photo of each). Itinerary. Japanese market for edible soybeans. General uses of edible soybeans in Hong Kong, Malaysia and Singapore. List of major importers in Asia (by country). Ontario soybean suppliers. Role of the Ontario Soya-Bean Growers Marketing Board (Chatham, Ontario).

This conference, which took place in Toronto, Chatham, and Harrow, Ontario, Canada, was sponsored by OMAF in Toronto. On the mission were 6 buyers from Japan (Takeya Miso Co., Asahi Industries [tofu maker], Takano Foods Co. [natto maker], Dah Cong Hong, Wako Shokuryo Co., and Gomei Shoji Co. [the last 3 is each an importer and wholesaler]), 2 from Hong Kong (Amoy Industries Ltd., and Chung Hing Co.), 3 from Malaysia (Sin Yong Huat Enterprises Sdn. Ltd, Yeo Hiap Seng (Malaysia) Ltd., and Chop Lee Kit Heng), and 2 buyers from Singapore (Eng Huat (S) Ltd. and Chop Hin Leong). Mike Hojo of OMAF/Tokyo was the mission leader.

The Japanese soybean market is about 5 million tons a year. Of this: Oil crushing 4,036,000 tons. Food 849,000 tons (17% of total), and feed (not crushed) 70,000 tons. From 1982 to 1986 domestic Japanese soybean production has decreased from 168,000 tons to 147,000 tons, while imports have increased from 4,344,000 tons to 4,857,000 tons. Demand for food soybeans has increased from 803,000 tons to 849,000 tons. Tofu, miso, and natto account for more than 94% of the total utilization of edible soybeans, roughly as follows: Tofu 500,000 tons, miso 200,000 tons, natto 100,000 tons.

In 1986 some 89.9% of Japan’s soybean imports came from the USA, followed by China (6.7%), and Brazil (2.65%). That year the least expensive soybeans came from Brazil (US\$219.86/ton), followed by USA (\$221.36), China (\$236.06), and Canada (\$277.50). Note that Canadian soybeans are 25.3% more expensive than those from the USA. Chinese and Canadian soybeans are most widely used

to make foods. Large Chinese soybeans are used to make tofu, medium sized for miso, and small for natto. Of the soybeans imported from the USA, 80-85% are imported from oil crushing because of their high oil content. The remaining 10-15%, or approximately 700,000 tons are food soybeans from Iowa, Ohio, or Michigan. Called “IOM” soybeans, they are used mainly to make tofu. Brazilian soybeans have a high oil content and are used for oil crushing only. The ocean freight cost for a 20-foot container shipped to Tokyo is as follows: USA west coast \$1,000. Toronto, Canada \$1,800. USA East Coast \$2,000. Brazil \$2,100. Argentina \$2,500. But a large percentage of regular soybeans are loaded directly into ships, and travel at lower freight rates. Exports of food soybeans from Canada to Japan rose from 10,000 tons in 1979 to 26,000 tons in 1986, while those from China rose from 267,000 tons in 1979 to 323,000 tons in 1986.

Very detailed preferred characteristics are given for soybeans to make miso (6 characteristics), natto (5), and tofu (5). Canadian soybeans are recognized as superior to Chinese and American soybeans for food use. This is one reason they command a relatively higher price.

Hong Kong imports 28,100 tons/year of soybeans, and 63% of these come from Canada, followed by China (35%), and the USA (1.8%). Malaysia and Singapore import 124,800 tons/year, and 53% of these come from the USA, followed by Canada (31.7%), and China (8.2%). Most of the food soybeans in Malaysia and Singapore are used to make soymilk and tofu.

Soymilk: Vitasoy dominates the market in Hong Kong, whereas in Malaysia and Singapore the leading manufacturers are Yeo Hiap Seng, Cold Storage, Lam Soon, and Nestle. Soymilk consumption is increasing in these 3 countries, and in neighboring countries. Soymilk makers believe there are four requirements for their products’ success: It must taste good, must be priced competitively with soft drinks, must be perceived as a health food, and must be marketed properly.

Bean curd sheets and sticks [yuba] are very common snacks and dishes in Hong Kong, Malaysia, and Singapore. Manufacturers consider only Chinese and Canadian soybeans for these products. Canadian soybeans produce whiter soymilk and this whiter yuba. However the larger size of Chinese soybeans results in a larger yield. Manufacturers normally blend 60% of Canadian soybeans with 40% of Chinese soybeans to obtain a higher output of whiter sheets.

Major Japanese soybean importers include: Da Chong Hong (Japan) Ltd., Gomei Shoji Co. Ltd., C. Itoh & Co. Ltd., Mitsubishi Corp., Kanematsu-Gosho Ltd., Nichimen Corp., Marubeni Corp., Mitsui & Co. Ltd., Nissho Iwai Corp., Okura & Co. Ltd., Toyo Menka Kaisha Ltd., Wako Shokuryo Co. Ltd. Address: Ontario, Canada.

3184. Shurtleff, William. 1987. *History of White Wave, Inc.* Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.

• **Summary:** A detailed history of this pioneering, very creative, and rapidly growing company. Contains production and sales statistics at each major phase of growth. Early days: White Wave was founded and started making tofu in September 1977 by Steve Demos in Boulder, Colorado.

Born on 24 April 1949 in Philadelphia, Pennsylvania, Demos attended Bowling Green State University in Bowling Green, Ohio, majoring in political science and philosophy and graduating in the fall of 1970. He was introduced to tofu in the summer of 1970, when he was traveling in a van in northern California with a friend, who bought some at an Oriental food store. Demos found it to be a good source of protein, and liked the flavor.

Right after graduation Demos took two trips to India. During the first in 1971, with Pat Calhoun, he became a vegetarian after witnessing the meat bazaar in Afghanistan. In early 1972 he took a longer trip to India, again with Pat Calhoun. It included 10-day Buddhist meditation course with a teacher from Burma, Goenka, who became his spiritual teacher. He also lived for 1-3 months in a cave near Rishikesh (in the foothills of the Himalayas in northern India), doing Hatha Yoga and meditation. There were monkeys in the forest trees, tame peacocks, a stream 10 yards in front of the cave that dropped into a bathing pool, and many sadhus (Indian holy men) practicing in other caves nearby. Then in 1974 he started a health food store [named Touch the Earth] in La Haska, Pennsylvania, where he grew acquainted with many new foods such as miso, sea vegetables, and *gomashio* (sesame salt). After 9 months he sold the store and returned to India again. He was now actively involved in meditation.

After that trip, Demos started living on the East Coast in New Hampshire. By 1974 he began buying tofu in Boston, Massachusetts, then made it a few times in the kitchen and used it in cooking for a yoga studies group, which had purchased a farm. He was in charge of food and he had learned how to make tofu from the *Ten Talents* cookbook. In March 1976, after a trip to India, he was in Santa Barbara, California, at a 76-day meditation retreat with teacher Robert Hover. He made tofu, starting at 4:00 each morning in a commercial kitchen, for 100-150 people, using *The Book of Tofu*. During this retreat Demos conceived of and developed the idea of starting a tofu company, including the name and logo. Three months later he found himself, a hippy with long hair, in Boulder, Colorado. He had an idea but no capital, and was living on food stamps. By good fortune he met a man named Anton Rogers (a talented architect and builder), who loaned him \$2,000 startup capital, after having known him less than a month. So in the

summer of 1977 Steve began buying equipment for making tofu. His new company was not yet officially established or registered—though he probably opened a checking account at a local bank.

Demos started making tofu at White Wave on 27 September 1977. “At 11:30 a.m. I sold my first block. I’m staring at the astrological chart which sits next to my desk. That was when I translated the effort to a dollar.” The company began as a sole proprietorship, located in very small (300 square foot) rented quarters at 1738 Pearl Street in Boulder, Colorado. The front one-third of the shop was used for a retail deli and the back two-thirds for food production. From day one, the tofu was made from organically-grown soybeans. Each 14-ounce block of tofu was sold, floating in water, in Chinese food take-out cartons. For details on White Wave’s early use of organically grown soybeans, see SoyaScan interview with Steve Demos (Aug. 1998). The first batch of tofu was used to feed the participants in a ten-day meditation retreat in Boulder.

One direct competitor was the Spinning Kitchen, which had started 9 months earlier, in about January 1977. They had the Boulder market locked up when White Wave started.

White Wave had three products from the opening day: Nigari Tofu, Black Walnut Mushroom tofu, and Lemon Herb tofu. The latter two innovative flavored tofus were made by mixing the natural flavorings into curds at a specific point before pressing. Shortly White Wave expanded into making sandwiches, which led to salads, drinks, pies, cakes, and muffins. One of the first stores in Boulder to sell Steve’s tofu was Green Mountain Grainery, owned and run by Bruce Macdonald. Pat Calhoun (formerly Demo’s wife), arrived in December from the Pacific Coast Bakery in California, bringing all their recipes. Recipes for baked goods (such as cinnamon rolls and cookies) were adapted.

By early 1978 soymilk (plain, honey-sweetened, or carob-maple) was introduced, sold out of a jet spray juice cooler or in quarts, and also used to make Coconut Cream Pie and Tofu-Agar Pies filled with various fruits (apples or whole strawberries, peaches, or blueberries). At about the same time the okara from the tofu started to be used to make one of America’s earliest brands of Soysage. This spicy Vegetarian Soysage (shaped like a sausage) was distributed with the tofu. Before long White Wave was making a host of delicious and innovative tofu deli products which were sold only at the Pearl Street deli. These included Macro Pizza with Tofu, Mexican Entrees, Okara Granola, and Tofu Dogs and Sauerkraut (very firm tofu cut into long rectangles and marinated broth). Soy Sannies (Miso-tahini Sandwiches) were also sold at nearby health food stores.

To help attract customers, the deli also sold an assortment of then largely unknown food products: 10-15

varieties of Japanese and American miso, many sea vegetables, shoyu, kudzu, umeboshi plums, and the like, many of the same products Demos had sold 4 years earlier at his health food store in Pennsylvania. Most of these were of great interest to macrobiotic devotees, though Steve had little personal interest in that subject.

Tofu was quickly recognized as a tremendously versatile, all-American ingredient. Now new people started coming into the company. Some were cooks and they helped to develop new products. In 1978 White Wave began to distribute a number of its most popular deli-type products to other retailers. These were among America's earliest commercial second generation tofu products: Missing Egg Salad (America's first, named by Trudy Stuart), Tofuna Salad (Vegetarian Tuna Salad), and Tofu Turnovers (with spinach and feta cheese filling). Other innovative second generation products sold or used only at the Pearl Street deli included Tofu Treats or Creamies (in banana-coconut, peanut-carob, or carob mint flavors), Miso Salad Dressings (heartly or mellow), and Tofu Mayo (eggless mayonnaise used in the Missing Egg Salad). Address: Lafayette, California.

3185. Shurtleff, William. 1987. History of White Wave, Inc. (Continued—Document part II). Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct. • **Summary:** Continued: At the same time White Wave started making nut and seed products in the same little shop, starting with gomashio (sesame salt), tamari-coated sunflower seeds and almonds, and nut butters.

Just a year after opening, White Wave was forced to expand out of the tiny Pearl Street shop by the demand for its deli products from outside retailers, such as Arati and other natural food stores in Boulder. Demos recalls:

"We acted with very little foresight. It was more like 'What do you want to do today? Let's make something new.' Finally we couldn't get out the front door. We had to step over the top of buckets of tofu, presses, and boxes used to deliver our little Chinese fish cartons of tofu, stacked up so high we couldn't see out the window. It was chaotic. We were making money and business was booming, but we were only paying ourselves \$1.42 an hour."

On 28-30 July 1978 a meeting of tofu manufacturers from across the USA was held in Ann Arbor, Michigan. The meeting was organized by Steve Fiering, Jerry MacKinnon (plus coworkers at The Soy Plant) and Bill Shurtleff, and hosted by The Soy Plant. Steve attended this historic meeting, and ended up rooming with Tom Timmins, head of the New England Soy Dairy. "I thought I was rooming with one of the idols of the industry. Just by virtue of association, I was going to do well." At this meeting the Soycrafters Association of North America (SANA) was established, with Larry Needleman as executive director of the new

trade association. Steve was elected to be one of six members of SANA's steering committee. Various photos of the meeting show Steve, with long hair and mustache, leading and participating in the discussions. A yellow lined sheet titled "Tofu Sales" was circulated to all attendees; Steve wrote that White Wave was making medium-firm bulk and packaged tofu, which wholesaled for \$0.65 and \$0.74 per pound, f.o.b. plant. Several days after the Ann Arbor meeting, William Shurtleff and Wataru Takai visited Demos, and saw how he made tofu at his tiny shop on Pearl St. in Boulder. They sampled and enjoyed the various creative offerings in the deli, and Shurtleff took home a label from each product.

At Walnut Street: In September 1978, after just a year at Pearl Street, the tofu company had long since outgrown its minuscule 'back room' space. So manufacturing operations were moved to a 3,000 square feet converted warehouse at 3869 Walnut Street. It felt like they had moved into a castle, with ten times as much space. Now there was great pressure to expand the business to use up the extra space. The company began to make new products (such as tempeh, ice cream, and new deli foods) and look for new markets.

The deli remained at Pearl Street, and was given a new name, The Cow of China (a term from *The Book of Tofu*). The name "White Wave" was reserved for the tofu manufacturing company. But there was only one set of books, under White Wave. The company now changed to a partnership, with seven equal partners, all active. Demos was president and Pat Calhoun did the bookkeeping, and only these two were interested in meditation.

Right after the move, to announce The Cow of China as a retail outlet and its vegetarian deli products, Demos did his first real advertising, using three charming posters. The first read: "White Wave Through the Cow of China Offers Food from The Kingdom of Plants. We make it all here in Boulder. 100% Dairyless." It then listed 14 soyfoods plus some non-soy desserts, almond-, cashew-, and peanut butters, and tahini. A second poster showed a soybean, with head, tail, and legs like a cow and dotted lines to delineate the choice butcher cuts. But instead of rump roasts and flank steaks were Soysage, Miso Dressings and the like. A third showed Jack, standing under a giant beanstalk, about to trade in his cow for the magical beans at which he is gazing in wonder. The caption: "We've got an alternative. White Wave Soy Dairy." The latter two posters were used as catalog advertisements with a growing number of natural food distributors.

The tofu plant now consisted of an open kettle, VCM grinder, and hand press for the curds on the end of a swinging levered bar. White Wave started to deliver product to some Denver health food stores and in late 1978, not long after the move to Walnut Street, they landed their first supermarket chain, King Soopers supermarket chains, which began to order 100 cases. As business expanded, so

did the need to improve packaging and marketing, and to control costs.

New packaging: White Wave couldn't get its tofu into supermarkets unless it was sold in water-packed film-sealed plastic tubs (trays); the Chinese carry-out food/fish cartons were not acceptable. So Demos bought a little hand-packing machine that allowed one person to pack one block of tofu at a time in water in a plastic tray, then seal the tray with a film lid. Steve remembers first using this machine at the Walnut St. plant. Initially, he would seal the tofu tray with clear, unprinted film, then run one of their oval labels (the one with a hint of green color in it, used previously on the Chinese cartons) through a gluing machine (which was less expensive than buying pre-glued labels), and slap the label on the clear plastic film. This was White Wave's "first true commercial mass market package." The new marketable package led to many new accounts. After King Soopers the company got into the City Markets chain, then about a year later into Safeway, followed by a host of other chains in outlying areas. As business expanded, White Wave could afford pre-printed film labels for its tofu in plastic trays. The label design, though rectangular, was basically the same as the old oval. The ingredients new read: "High protein soybean cake contains: Soybeans grown without the use of herbicides or pesticides, filtered water, and nigari (salt bitterns). No more no less!" Soon a variety of textures were available: Extra firm press, firm organic, extra firm, and sift.

New sources of soybeans: White Wave had made its tofu from organic soybeans from day one. When the company first moved into Walnut Street, they were still buying these soybeans from Green Mountain Grainery in Boulder. But in the fall of 1978 Steve drove to a meeting of the Organic Growers Association in Iowa. He spoke about the demand for organic soybeans and met Marvin Kurpkeweight, who was already growing soybeans organically in eastern Nebraska. Steve visited Marvin's farm and contracted with him to buy organic soybeans direct from the farmer. Address: Lafayette, California.

3186. Shurtleff, William. 1987. History of White Wave, Inc. (Continued—Document part III). Lafayette, California: Soyfoods Center. 11 p. Oct. Unpublished manuscript, based on interviews with Steve Demos from June 3 to Oct.

• **Summary:** Continued: White Wave's tofu production was growing nicely. It rose from 120,000 lb. in 1978 (2,308 lb/week), to 179,000 lb. in 1979 (3,442 lb/week, up 49%), to 279,000 lb. in 1980 (5,365 lb/week, up 56% over 1979).

In February 1979 a major new product line was started: tempeh. Chip McIntosh was the first tempeh maker, followed by Chris O'Riley. An old kitchen refrigerator, warmed by light bulbs, was used as the incubator. The first two products were Soy Tempeh and Soya Rice Tempeh, the latter being America's first multi-ingredient, soy-and-grain tempeh.

At about the same time, a third new product was launched: Polar Bean. It was a soymilk based non-dairy frozen dessert, made in a soft serve machine but sold in hard-pack pints. The first flavor was Banana-carob. Later strawberry, chocolate, carob mint, and orange flavors were added. In about 1984 a soft serve version called Polar Softie was introduced but did not prove successful.

Also in 1979 Richard Leviton visited White wave and the Cow of China, and did an in-depth study of their operations and products, published in the 1979 issue of *Soycraft* magazine. Soyfoods sold both at "The Cow" and for wholesale distribution to other retailers included: Organic Nigari Tofu, Soymilk (Honey-Vanilla or Carob-Maple), Soysage, Tempeh, Missing Egg Salad, Tofu Mayo, Baked Savory Tofu Cutlets, Sweet Bean Tofu Pie, Miso Salad Dressings (Mellow or Hearty), and Tofu Treats or Creamies (Banana-Coconut, Peanut Carob, or Carob-Mint; squares of creamy baked tofu blend on a healthful oats-coconut-flour crust).

Other ready-to-eat items sold only at "The Cow" included Soysage Pate, "Macro" Pizza (with tofu), Tofu Spinach Dill Turnovers, Tofu Cinnamon Rolls, Hot Tofu Meatballs and Meatball Sandwiches, Sloppy Joe Sandwich (made with TVP), Tofu Cream Cheese & Black Olive Sandwich, Tofuna Sandwich (like tunafish), Strawberry Tofu Pie, Soy Sesame Bars, and Tofu Butternut Squash Pie. In mid-1979 bulk recipes for about ten of these products were published, with permission, in *Tofu & Soymilk Production* by Shurtleff and Aoyagi.

Leviton noted: "The Cow of China is surely one of the nation's most ambitious and energetic soyfoods companies." It was just about breaking even with weekly gross retail sales of \$1,000, three-fourths of which came from soyfoods. Concerning the growth of the still totally unmechanized little company Demos, now the self-styled "beneficent dictator," always frank and candid, added:

"It was a hell of a struggle, especially for an undercapitalized small business. But I certainly wouldn't discourage anybody because we started with nothing, and we've been going since then, and we've been able to make it all meet. We've just rigged, we've improvised, we've done everything imaginable, as I'm sure many other people in this industry have. We cut our salaries back, we did without a lot, but its own momentum kicked in. I suppose we consider ourselves alchemists in turning sweat into money. So, let me express my gratitude to everybody and everything, seen and unseen, who have helped us pull this together."

In August 1979 Gary and Chandri Barat arrived in Boulder and spent several days studying the Cow of China. They had met Demos at the Second Annual Soyfoods Conference in Amherst, Massachusetts (July 26-29, 1979). They were driving around the country, studying tofu and developing a business plan in preparation for starting a

soyfoods company, which later became Nature's Inn, then Legume. As they studied The Cow of China and Demos invited them for dinner several times. He and his wife, Ginny, served a tofu spinach feta pie and mushroom caps stuffed with tofu. Later Barat told Demos more than once how much this visit has influenced him in starting a company based on tofu entrees. The lineage of Legume's early products (Tofu Cream Pies, Tofu Spinach Pies) can be traced back to The Cow of China.

Barat encouraged White Wave to do a feasibility study on converting The Cow of China into a fast food restaurant named The Family Diner and moving into a vacated A & W root beer stand three blocks from The Cow in a very attractive location. The study was done, a potential menu was developed, but financial backing did not come through.

A White Wave catalog published in December 1979 included several new products: Doufu (extra firm Chinese style tofu), Savory Baked Tofu, and Tamarind Nuts and Seeds (Almonds, Cashews, Spanish Peanuts, Sunflower Seeds, Nut Mix).

The Cow of China deli was doing well. By February 1980 sales were \$1,700 to \$2,000 a week and there were often lines out the door. By the summer of 1980, according to *Soyfoods* magazine, the Cow of China had been renamed the Good Belly Deli, with the slogan "Real Food, Real Fast" and White Wave was producing 7,500 pounds of tofu and tofu products a week. The new deli, an expanded and Americanized version of "The Cow," continued to serve as an excellent showcase for the White Wave's innovative ready-to-eat soyfood products. Working with a friend who was an advertising agent, Demos had dropped the line of assorted health foods (miso, sea vegetables, etc.), expanded the deli items, and installed a stand-up counter bar to eat at and a few tables and chairs. Formerly it had been all takeout. Hot and cold fast food was served. The deli attracted lots of business (there was still usually a line out the door), the products were very innovative and they were praised by the natural foods community in Boulder. Address: Lafayette, California.

3187. Product Name: Soft Soyalite (Non-Dairy Cream Cheese) [Garlic, Herb, Onion/Chive, or Plain]. Formerly named Soft Tofu Cheese.

Manufacturer's Name: Simply Natural, Inc.

Manufacturer's Address: P.O. Box 295, Norma, NJ 08347.

Date of Introduction: 1987. October.

Ingredients: All: Organic tofu, organic miso. Herb: Italian seasoning (Oregano, basil, savory, thyme, rosemary).

Wt/Vol., Packaging, Price: 8 oz plastic tub.

How Stored: Refrigerated.

Nutrition: Per ounce: Calories 43, sodium 167 mg, fat 2.3 gm, carbohydrates 1.6 gm, protein 3.8 gm.

New Product–Documentation: Flyer. 1987. Oct. Shows label. "A non-dairy cheese substitute." Label. 1987. 4 inches diameter. Green and purplish red on white "Simply Natural Gourmet Soy Foods Soft Soyalite. Plain. A Non-Dairy Cheese Substitute. Only 43 calories an ounce!" Brochure. 1987. Oct. "Discover the New Simply Natural and Rediscover Natural Cuisine." Introduces Soyalite (formerly Soft Tofu Cheese), Pasta Lite (formerly Tofu Pasta), and Miso Dressing. Explains why the names were changed and shows labels. Red on white. 4 pages. Leaflet. 1988. "We're back... And better than ever! Better price. Better shelf life. Better packaging. Better flavors. Super summer discount thru 31 Aug. 1988." Ad in *Vegetarian Times*. 1988. May. p. 58. "Everything Your Heart Desires."

Product Alert. 1988. May 23. "After extensive research and market surveys, Simply Natural, Inc. of Norma, NJ, has decided to rename and reformulate its Soft Tofu Cheese product. It is hoped the new name, Soyalite, will end the confusion behind the old product name—is it cheese, tofu or a combination. Soyalite has approximately half the calories, 43 per ounce, of soft dairy cheeses. Packaged in an 8 oz tub, this spread and/or dip has been reformulated so it has a more 'velvety', smoother texture. Four varieties are available, Plain and Herb are reformulations of the original tofu cheese product while Onion/Chive and Garlic are new additions to the line."

3188. Product Name: Westbrae Natural Organic Unpasteurized Miso [Mellow White, Mellow Red, and Mellow Brown Rice].

Manufacturer's Name: Westbrae Natural Foods (Importer/Distributor). Made in Canada by Amano Miso Co.

Manufacturer's Address: 4240 Hollis St., Emeryville, CA 94608. Phone: 415-658-7521.

Date of Introduction: 1987. October.

Ingredients: Mellow White: Cultured white rice, organically grown* whole soybeans, water, sea salt. * Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.

Wt/Vol., Packaging, Price: 13 oz (396 gm) plastic tub.

How Stored: Refrigerated.

Nutrition: Per tbs (18 gm)/per 100 gm: Calories 40/239, protein 2/9 gm, carbohydrate 8/45 gm, fat 0/1 gm, cholesterol 0 mg, sodium 740/4080 mg, potassium 50/290 mg.

New Product–Documentation: Talk with Gordon Bennett. 1988. April 2. About 6 months ago they switched from Cold Mountain Miso (made by Miyako Oriental Foods in Los Angeles) to that made by Amano in Canada. Gordon felt that Amano had a better, rounder flavor. Amano uses organic soybeans (which Miyako did not), and gave Westbrae exclusive distribution rights for the USA. Labels. 1988. Plastic tubs. Blue, red, or brown (respectively) and black on white. "Mellow Miso is not pasteurized so slight

swelling of the tub may occur. Unpasteurized miso is a source of beneficial enzymes and organisms. No preservatives or coloring added. Fermented in cedar kegs by the Amano family, master miso makers for 3 generations. Keep refrigerated.” The lid contains a recipe for one-pot miso soup, and the tub one for sweet ‘n tangy miso spread (miso, tahini, and brown rice syrup).

Talk with Graham Amano of Amano Foods Ltd. 1997. June 16. They still make miso for Westbrae. They also make shoyu. The market in British Columbia is too small, so they would like to expand.

Product with Label purchased at Open Sesame in Lafayette, California. 1998. Jan. \$4.39 for 13 oz plastic tub of Mellow Brown Rice Miso (made with organic soybeans, unpasteurized).

3189. Wizard’s Cauldron, Ltd. 1987. [Hot news: Edward & Sons Trading Company to be exclusive distributor and marketer for Wizard Baldour trade marked condiments and sauces, including Hot Stuff] (News release). P.O. Box 969, 108 S. Church St., Hillsborough, NC 27278. 1 p. Oct.

• **Summary:** Other products in the line include Wizard Baldour’s Sizzle, Catch Up, Woostershire, and White Magic. They are expected to be available by early 1988. Address: Hillsborough, North Carolina. Phone: 919-732-9445.

3190. Westbrae Natural Foods. 1987. Distributor catalog, FOB pricing: Nov. 15, 1987. Fall. Emeryville, California: Westbrae. iv + 19 + [12] p. 22 by 28 cm.

• **Summary:** On the cover, the lettering is in black on a tan background. Pages i-iv are general information, 1-10 are a computer-printed price list, and 11-19 are a product glossary. There are also 1-page, single-sided inserts (sell sheets, many in full color) of various Westbrae products. Address: Office: 4240 Hollis St., Emeryville, California 94608; Mailing: P.O. Box 8711, Emeryville, CA 94662. Phone: (415) 658-7518 (orders).

3191. Granger, Stan; Granger, Lindsey. 1987. Re: Apprenticeship at South River Miso Co. Letter to William Shurtleff at Soyfoods Center, Nov. 29. 3 p. Handwritten, with signature.

• **Summary:** Husband and wife, they are students of Michio and Aveline Kushi, and are now studying as apprentices at South River Miso Co. Describes their life and work there. Address: Conway, Massachusetts.

3192. Barrett, Mariclare. 1987. Soyfoods almanac. *Vegetarian Times*. Nov. p. 35-38, 40. [3 ref]

• **Summary:** An overview and introduction to tofu, tempeh, miso, soy sauce, etc. with summary of some new developments. Photos show Betsey Shipley & Gunter Pfaff,

Jan Belleme, Henry Ford wielding axe against trunk of car made of soybeans.

3193. Eden Foods, Inc. 1987. Product description: Eden Foods quality natural foods. 701 Tecumseh Rd., Clinton, MI 49236. 21 p. Plus 6 pages of inserts. Catalog.

• **Summary:** The catalog lists the following soyfoods: Edensoy (Original, Vanilla, Carob; shown on page 1. “Edensoy is the best tasting, best selling, best made natural soymilk on the market”), black soybeans (they “have a hearty yet sweet taste. In Japan, black soybeans are always prepared for the New Year’s celebration as they are a symbol of health.”), organically grown soybeans (usually Corsoy or Amsoy), Eden tekka (“a hearty, nutritious condiment made from hacho miso, carrots, burdock, ginger root, and unrefined sesame oil; 2.8 oz), dried tofu (actually dried-frozen; 5.8 oz), barley (mugi) miso, brown rice (genmai) miso, buckwheat (soba) miso, light (shiro) miso, rice (kome) miso, hacho (100% soybean) miso, natto miso “Kinzanji,” shoyu, organic shoyu, low-sodium shoyu, wheat-free tamari, tamari-roasted nuts and seeds wheat free (pumpkin seeds, sunnies [sunflower seeds], almonds, cashews, mixed nuts), and Lima Tempeh.

Some interesting non-soy foods listed in the catalog include quinoa (16.2% protein), kudzu-kiri, kudzu root starch, adzuki beans, mochi (100% brown rice, with mugwort, or with millet), sea vegetables, organic amazake, barley malt syrup, and Lima seitan.

In the spring of 1986, Eden Foods became General Agent for North America for the Lima Company of Belgium. Lima soyfood products include Lima Tempeh. Note: This catalog was still in use in Jan. 1989. Address: Clinton, Michigan. Phone: 517/456-7424 or 800/248-0301.

3194. **Product Name:** Tofu Classics: Mandarin Chow Mein, Creamy Stroganoff, or Shells ‘n Curry (Pasta and Sauce Mixes).

Manufacturer’s Name: Fantastic Foods.

Manufacturer’s Address: 106 Galli Dr., Novato, CA 94949. Phone: 415-883-7718.

Date of Introduction: 1987. November.

Ingredients: Mandarin Chow Mein: Whole wheat Oriental noodles, dehydrated vegetables (onions, carrots, peas, red pepper, green onions, garlic, parsley), corn oil, powdered yellow miso (soybeans, rice, salt), hydrolyzed vegetable protein, whole wheat flour, dried yeast (molasses grown), toasted sesame oil, powdered soy sauce (soybeans, wheat, salt), spices, rice syrup powder, vinegar powder.

Wt/Vol., Packaging, Price: 4 oz (113 gm) paperboard box. Retail for \$1.65 (5/90, California).

How Stored: Shelf stable.

New Product–Documentation: Note: This product does not contain any tofu; it must be added. Ad in *Natural Foods Merchandiser*. 1987. Nov. p. 50. “Introducing... Tofu

Classics. One pot cooking. Ready in less than 20 minutes.” Dec. p. 16. “New Tofu Classics Take You Out of the Kitchen and Around the World.” Also run in 1988. Jan. p. 40. Ad in Vegetarian Times. 1988. May. p. 11.

Label sent by Claire Wickens. 1990. May 30. 4.5 by 6.5 by 1.25 paperboard box. Tan, green, orange and red on beige. On the front panel is a photo of a white plate containing the finished tofu and pasta, plus a small insert photo of a package of water-packed tofu. “Add ½ pound firm tofu. All vegetarian. All natural.” On the back is a pastel drawing of a Chinese person carrying two baskets on a shoulder pole by a lake. “One pot cooking. Ready in 7 minutes. Fantastic Foods’ *Tofu Classics* are adaptations of favorite dishes from around the world, designed to enhance tofu cookery. We provide wholegrain pasta and a delicious sauce—you add tofu.” Inside is a poly bag with short lengths of pasta and dried peas, diced carrots, etc.

Tofu Classics product with Label purchased at Open Sesame in Lafayette, California. 1998. Jan. 10. Mandarin Chow Mein, design copyright 1994. Price: \$1.89. Shells ‘n Curry, design copyright 1994. Price: \$1.89.

3195. Goldbeck, Nikki; Goldbeck, David. 1987. The Goldbeck’s guide to good food. New York, NY: New American Library. xi + 563 p. Illust. Index. 24 cm.

• **Summary:** The all-new version of their *Supermarket Handbook*, which originally sold 850,000 copies. Chapter 12 (p. 143-51), titled “Soyfoods: World Class Protein,” discusses tofu, frozen tofu, tempeh, soy flour and grits, high-tech soy (soy concentrates and isolates), textured soy protein products. There is also considerable information on soyfoods in other chapters throughout the book: Soy flour (p. 79). Soy nuts (p. 159, 163). Soy milk (p. 184-85). Soy yogurt (p. 190-91, 195). Soy cheese (212, 217-18). Soy protein concentrates or isolates (p. 233, 451, 483, 527). Soy oil (p. 144, 264, 288, 292-93). Meatless burgers and soy sausages (p. 394). Soy ice cream (p. 452-53, 455). Soy sauce (510-11, 515). Miso (p. 511-12, 515). Worcestershire sauce (p. 512).

The section titled “Soy Yogurt” gives a nutritional analysis of cultured Soygurt, made by Cream of the Bean; per 8 oz. it contains 255 calories, 6.7 gm protein, 45.2 gm carbohydrates, 5.3 gm fat, no cholesterol, 20 mg sodium, and 7% of the US RDA for calcium. The text reads: “Those who must avoid milk will be interested in nondairy soy yogurt. A new arrival in natural food stores, this yogurt is made from soymilk and bacterial cultures. Gelatin is added to some brands to maintain the typical yogurt consistency. There is no need, however, for the quality to be compromised by the addition of high fructose corn syrup, isolated soy protein, salt, and several thickening agents, as has been done in at least one brand we have encountered.”

The section titled “Soy Cheese” states: “Cheese based on soy milk has recently added a new category of cheese

products to the market. In terms of calories, protein, and overall fat content soy cheese competes quite favorably with animal cheeses... It is both lactose- and cholesterol-free and the sodium content is about average for cheese. Note, however, that soy cheese is held together with vegetable gums and will contain either the milk derivative calcium caseinate (in which case it is not dairy free) or isolated soy protein.” Page 218 gives a nutritional analysis of Soya Kaas (soy cheese). Per 1 oz. it contains 78 calories, 6.7 gm protein, 5.6 gm fat, no cholesterol, and 168 mg sodium. Address: R.D. 1, Box 495, Woodstock, New York 12498 914-679-8561.

3196. **Product Name:** Miso Mustard.

Manufacturer’s Name: Kaiora Natural Ltd.

Manufacturer’s Address: CPO Box 3007 (180 Victoria St. West), Auckland 1, New Zealand. Phone: 09-370 454.

Date of Introduction: 1987. November.

Ingredients: Mustard seeds, brown rice vinegar, barley miso (soybeans, barley, water, sea salt).

Wt/Vol., Packaging, Price: 200 gm.

How Stored: Shelf stable.

New Product–Documentation: Label. 1987. 7.5 x 2 inches. Purple, light purple black, white, green, and red. “A rich, rounded blend of premium stoneground mustards and nutritious barley miso. Miso mustard is preferred for its superior flavor and mellow character.” Note: Kaiora also markets apple butter, almond butter, peanut butter, apple & blackberry conserve, apple & strawberry conserve, vanilla extract, hazlemalt spread, and unrefined olive oil. Beautiful labels! Form filled out by Austin Holden. 1988. Dec. Gives date of introduction.

3197. **Product Name:** Dandelion-Leek Miso (With Dandelion Greens, Wild Spring Leeks, and Maine Coast Kelp [Digitata] Pickled in the Miso).

Manufacturer’s Name: South River Miso Co. Inc.

Manufacturer’s Address: South River Farm, Conway, MA 01341. Phone: 413-369-4057.

Date of Introduction: 1987. November.

Ingredients: Wild leeks (*Allium tricoccum*), dandelion greens, and Maine coast kelp (*Digitata*) pickled for one summer in two-year Barley miso made from deep well water, organically grown barley and soybeans, sea salt, and koji culture.

Wt/Vol., Packaging, Price: 1 lb plastic tub.

How Stored: Refrigerated.

New Product–Documentation: Talk with then Label sent by Christian Elwell. 1992. March 13. After the miso has aged for 2 summers, the land- and sea vegetables are added then the mixture is allowed to ferment until the end of the third summer. He started selling this miso in the winter of 1987. Label. 3.5 by 2 inches. Black on white. Self adhesive.

“100% organic ingredients. Unpasteurized. Please refrigerate.”

3198. Sumiyoshi, Yasuo. 1987. Miso, shoyu seizô gyôkai no genjô ni tsuite [Present status of the miso and shoyu industries in Japan]. *Daizu Geppo (Soybean Monthly News)*. Oct/Nov. p. 19-28. [Jap]

• **Summary:** For the year 1983, 1,701 miso manufacturers produced 574,000 tonnes of miso, and 2,692 shoyu manufacturers produced 1,194,000 kiloliters of shoyu. Miso production for recent years was: 1980 579,000 tonnes, 1981 576,000 tonnes, 1982 572,000 tonnes, 1983 574,000 tonnes, 1984 581,000 tonnes, 1985 573,000 tonnes, 1986 581,000 tonnes. Most of Japan's miso plants are still small: 1,513 plants (88.5% of all plants) produced 375 tonnes or less a year, but this accounted for only about 12% of all production. Yet eight plants produced 11,251 tonnes or more a year, and this accounted for 26.7% of all production.

Shoyu production for recent years was: 1980 1,189,000 kl, 1981 1,191,000 kl, 1982 1,187,000 kl, 1983, 1,194,000 kl, 1984, 1,200,000 kl, 1985, 1,186,000 kl, and 1986 1,201,000 kl. Address: Shokuryô-chô Kakô Shokuhin-ka, Miso Shôyu Kakari-chô.

3199. *Whole Foods*. 1987. Great Eastern Sun, Westbrae trade lines. Nov. p. 18.

• **Summary:** Effective immediately Great Eastern Sun of Enka, North Carolina, is the exclusive distributor of Westbrae label seaweeds (sea vegetables) and Asian condiments, while Westbrae is exclusive distributor of Soba Shop ramen and noodles. Bruce Sturgeon is sales and marketing director for GES.

3200. *Whole Foods*. 1987. Sensational soyfoods. Nov. p. 62. [5 ref]

• **Summary:** This basic introduction is designed to be photocopied by natural food retailers for distribution to their customers.

3201. Schiering, Bob. 1987. Amazake seasoned with miso, or made with commercial enzymes (Interview). *SoyaScan Notes*. Dec. 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Mixing 2 teaspoons of miso with 1 quart of amazake gives a great flavor. He would like to make amazake with commercial enzymes rather than koji mold, but does not have the resources to start his own company. He worked for Grainaissance for a while. He had the idea for and did the initial development on their amazake egnog. Feels that he was not paid fairly for his work. He has recently made delicious 3-grain amazake (from brown rice, millet, and corn) that tastes like egnog, and also a delicious oatmeal amazake. The former idea came from Mountain Ark via Betty Stechmeyer of GEM Cultures. In

Jan. 1988 he completed a brief market study on amazake in America and shared the results with Soyfoods Center. Address: 5707 Carlos Ave., Richmond, California 94804. Phone: 415-237-5845.

3202. Mesmer, R.E. 1987. Don't mix miso with MAOIs (Letter). *J. of the American Medical Assoc.* 258(24):3515. Dec. 25. [1 ref]

• **Summary:** MAOIs (Monoamine oxidase inhibitors) such as Parnate and Nardil are widely used to treat anergic depression and some anxiety and phobic disorders. One side effect of taking these drugs is hypertension. Patients are advised to follow a low-tyramine diet. But miso and soy sauce may contain enough tyramine to raise the blood pressure of persons taking MAOIs, causing hypertensive crises. Address: M.D., Warren (Pennsylvania) State Hospital.

3203. American Miso Co. 1987. A miso primer: The American Miso story (Ad). *Vegetarian Times*. Dec. p. 18.

• **Summary:** This one-third page vertical black-and-white ad explains: “Generally, there are three types of miso: Sweet, Mellow, and the darker, Traditional misos. They differ in color, salt content, fermentation time, and the soybean/grain (koji) ratio.” The company describes each of the misos it makes as one of these three types. Near the bottom of the ad is the Miso Master logo, an illustration showing the head and shoulders of a Japanese miso master, with a knotted headband, in front of a large wooden vat of miso. Below “Miso Master is produced by the American Miso Co. for Great Eastern Sun.”

This ad also appeared in the April 1989 issue (p. 6) of this magazine. Address: Rutherfordton, North Carolina.

3204. Belleme, John. 1987. The South River Miso story: Turn-of-the-century techniques make a modern success. *East West*. Dec. p. 28-30. [1 ref]

• **Summary:** A beautifully written history of this company and description of its present work. The South River adventure began in 1979 after the couple had finished a 3-month miso apprenticeship with Noboru Muramoto in Glen Ellen, California. They were able to make 1,000 lb of miso in one batch. The beans and koji are mashed by hand and foot. Using only organic beans and grains, sea salt, deep well water, and natural aging in wood, South River now makes 40,000 lb/year of nine types of miso using methods found in Japanese history books.

Photos show: The Elwell's home and attached miso shop. Four small shots of Christian Elwell making koji and miso. Christian pouring the miso into an 8,000 lb capacity wooden vat. John Belleme treading fresh miso underfoot.

3205. Golbitz, Peter. 1987. 1987 new product count: At least 217 new soyfood products for retail sale. *Soya*

Newsletter (Bar Harbor, Maine). Nov/Dec. p. 3.

• **Summary:** Of the 217 new products, the leaders in the 8 product categories were Nondairy Frozen Desserts (50), Entrees (44), Beverages (35), Snacks/Desserts (35), Cheese Alternatives (19), Frozen Entrees (17), and Condiments (16). The leaders among the 8 primary soy ingredients were tofu (133), soymilk (32), textured soy protein (19), isolated soy protein (12), soynuts (10), tempeh (6) and miso (1). Tofu was the only primary soy ingredient used to make at least one product in all categories. A complete listing of these products broken down by primary soy ingredient and by category, and which also lists flavors, company name, city, and state, is available from Soya Newsletter for \$25 (or \$35 in Canada). Address: Soyatech, Bar Harbor, Maine.

3206. Hwang, Gwo-Rong; Chou, Cheng-Chun. 1987. [Physical and chemical changes during the aging of Toupan-chiang mash]. *Chung-Kuo Nung Yeh Hua Hsueh Hui Chih (J. of the Chinese Agricultural Chemical Society, Taiwan)* 25(4):469-475. Dec. [15 ref. Chi; eng]

• **Summary:** Physical and chemical changes occurring in this traditional Taiwanese variety of miso were investigated during the 98-day aging period. During maturation, the color darkened from greenish-brown to dark reddish brown. The content of soluble solids, amino nitrogen, and ammonia nitrogen gradually increased. The alcohol content reached a maximum of 0.45% after 70 days. There were large increases in the acetic acid (from 154.1 to 473.3 mg/gm of dry mash) and glutamic acid (from 0.50 to 2.35) content. Address: Graduate Inst. of Food Science and Technology, National Taiwan Univ., Taipei, Taiwan.

3207. Ebine, H. 1987. [Enforcement of regulations concerning and problems with the nutritional labeling of miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 35(7):237-49. [Jap]*
Address: National Miso Research Inst., Tokyo, Japan.

3208. Inoue, F.; Awao, T. 1987. [Control of microorganisms in food (miso and soy sauce) factories]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 35(11):370-86. [14 ref. Jap]*

3209. Ito, H.; Sakai, H.; Matsumoto, S.; Ebine, H. 1987. [Chemical composition of the water-insoluble residue of miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 35(3):122-27. [23 ref. Jap]*
• **Summary:** The composition of lipids and fatty acids was measured. Address: Japan.

3210. Kayahara, H.; Yasuhira, H. 1987. [Characteristics of the halophile *Pediococcus halophilus* isolated from miso and shoyu-moromi]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 35(3):117-21. [28 ref. Jap]*

• **Summary:** These bacteria are members of the Lactobacillaceae. Address: Japan.

3211. Le Guern, J. 1987. Les produits végétaux fermentés [Fermented vegetable products]. *Bretagne Agro-Alimentaire (La)* 14(1):7-10. [13 ref. Fre]*

• **Summary:** Discusses the different processes for fermentation of legumes, including the process for making miso. Address: Adria, Quimper, France.

3212. **Product Name:** Miso.

Manufacturer's Name: McCracken Miso Co.

Manufacturer's Address: 2, Muirhouse Cottages, Lauder Rd., Stow, Galashiels TD1 2QL, Scotland.

Date of Introduction: 1987.

New Product-Documentation: Letter from Mrs. Roisin McCracken. 1988. July. "My husband and I have started a rather successful miso business."

3213. Nagano, H. 1987. [Evaluation of okara as a raw material for miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 35(6):228-33. [12 ref. Jap]*

• **Summary:** Okara is a by-product of tofu production. Address: Japan.

3214. Nikkuni, Sayuki; Okada, N.; Itoh, H. 1987. [Studies on soybean protein digestion during miso fermentation. II. Effect of soybean cooking conditions on SDS-PAGE pattern of water-insoluble proteins of miso]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 34(11):731-37. [24 ref. Jap; eng]*

• **Summary:** Six miso samples were prepared from soybeans autoclaved under 1 kg/square cm steam pressure for different lengths of time (0, 1, 10, 20 and 60 minutes). There were no significant differences in water-soluble nitrogen contents and in SDS-PAGE (Sodium dodecyl sulphate-Polyacrylamide Gel Electrophoresis) patterns of miso samples prepared from soybeans autoclaved for greater than or equal to 1 minute. However, texture of miso samples prepared from soybeans autoclaved for 1 minute was inferior to that from soybeans autoclaved for greater than or equal to 10 minutes. Address: National Food Research Inst., Ministry of Agriculture, Forestry & Fisheries, Yatabe, Ibaraki 305, Japan.

3215. **Product Name:** Noble Bean Tofu Cutlets.

Manufacturer's Name: North Coast Tempeh Co. Tofu made by Cleveland Tofu Co.

Manufacturer's Address: 1088 Ivanhoe Rd., Cleveland, OH 44121.

Date of Introduction: 1987.

Ingredients: Tofu (soybeans, water, naturally occurring calcium sulfate), tahini, barley miso, spring water, corn oil, rice vinegar, spices.

Wt/Vol., Packaging, Price: 12 oz.

How Stored: Frozen.

New Product–Documentation: Label. 1987. 4.25 inches diameter, self adhesive. Red, green, yellow, and blue on white, with logo of Jack and the Beanstalk. “Pan Fry, Bake, Steam, or Grill. No Cholesterol.” Jeff Narten. 1987. “History of North Coast Tempeh and its Products.” 4 p. Dec. 7. Plus new current label.

3216. Ohike, T.; Shimozaki, I.; Kanai, T.; Yoneyama, T.; Itoh, T.; Shinha, Y.; Fukuzawa, M.; Iida, T. 1987. [Quality evaluation of high-yielding rice varieties for rice miso production]. *Research Report of the Nagano State Laboratory of Food and Technology* No. 15. p. 38-42. [2 ref. Jap]*

Address: Nagano State Lab. of Food Technology, Kurita, Nagano-shi, Japan.

3217. Ohike, T.; Itoh, E.; Yoneyama, T.; Itoh, T.; Shinha, Y.; Fukuzawa, M.; Iida, T. 1987. [Studies on fluidizing rice miso]. *Research Report of the Nagano State Laboratory of Food and Technology* No. 15. p. 26.37. [4 ref. Jap]*

Address: Nagano State Lab. of Food Technology, Kurita, Nagano-shi, Japan.

3218. **Product Name:** Honest to Goodness Soup. Make-in-the cup (Dry Mix) [Tomato, Onion, or Mulligatawny].

Manufacturer’s Name: Realeat Company Ltd.

Manufacturer’s Address: 2 Trevelyan Gardens, London NW10 3JY, England. Phone: 01-459-3401.

Date of Introduction: 1987.

Ingredients: Brown rice, miso and soy sauce powder, vegetable bouillon powder, and spices. Varietal ingredients include tomato, onion, curry, garlic, and celery salt.

Wt/Vol., Packaging, Price: 16 gm in nitrogen-flushed foil sachet.

How Stored: Shelf stable.

Nutrition: Per 15 gm dry: Protein 10%, carbohydrate 68%, vegetable fat 4%, calories 50.

New Product–Documentation: Letter from Gregory Sams. 1988. March 30. Leaflet, undated. “A Recipe for success.” Gives detailed product information. “A truly unique range of additive-free Instant Soups with Real Flavor. They are made only with natural ingredients and thickened with nourishing brown rice.”

3219. Salt of the Earth. 1987. Catalog [Mail order]. P.O. Box 1614, Rifle, CO 81650. *

• **Summary:** Talk with Ron Roller. 1991. Nov. 22. Scott Halizon of Salt of the Earth in Rifle, Colorado, sells natto starter cultures.

Talk with Scott Halizon. 1991. Nov. 23. In about 1971 Scott decided to learn as much as he could about salt and to make traditional salt available in America. His company

now makes salt in Mexico, on the west/Pacific side of Baja, California. He brings this crude salt to Colorado, dissolves it in water, filters out the dust and grit, boils it, recycles the nigari, and dries it for sale. He started to sell this salt in about 1978-80 via a company he established named The Salt Company. Address: Rifle, Colorado. Phone: 303-625-4444.

3220. Shimomura, M.; Matsumoto, J.J. 1987. [Changes in proteins of fish meat during cooking and processing. V. Changes in proteins of Spanish mackerel meat cured in miso]. *Nihon Suisan Gakkai-shi (Bulletin of the Japanese Society of Scientific Fisheries)* 53(4):627-32. [11 ref. Jap; eng]*

• **Summary:** Miso-zuke of fish flesh is a traditional processing method whereby fish are cured in miso in order to preserve the fish and improve its eating quality. The meat becomes more tender and fragile. It becomes harder for the first 7 days, then softer until day 21 due to the enzymes in miso. Address: Dep. of Food Science & Nutrition, Otsuma Women’s Univ., Sanbancho 12, Chiyoda, Tokyo 102, Japan.

3221. **Product Name:** Soy Devine Cajun Barbeque Style (Frozen Tofu Entree) [As is, or on a Nine Grain Bun].

Manufacturer’s Name: Soy Devine.

Manufacturer’s Address: Box 668, Miranda, CA 95553.

Date of Introduction: 1987.

Ingredients: Processed organic tofu [frozen], tomato sauce, onions, honey, mustard, cider vinegar, safflower oil, tamari (Westbrae), peanut butter, garlic, miso, spices (incl. paprika, cayenne, allspice).

Wt/Vol., Packaging, Price: In a tub.

New Product–Documentation: Talk with Mara Devine. 1988. April 7. She used to make the Village Soyburger. This may be America’s first second-generation product made with frozen tofu. She buys the tofu from Quong Hop. It is not shaped like a burger. She freezes the tofu, slices it, marinates it in a sauce, then bakes it, pours on the sauce and bakes it a little more. It is akin to Sloppy Joes. She also sells it in a bun. Its very chewy. She has a whole book on frozen tofu. Label. 1988. As is, 4.5 inches diameter. Black, red and green on a white lid. Logo of an angel with a soybean plant in both hands. “No additives or preservatives. Tasty hot or cold. Made with organic tofu and homemade barbecue sauce. All vegetable protein. Excellent texture. On tub: Serving suggestions. Great as a burger, in sloppy joes, in spaghetti sauce, as burrito or enchilada filling, over rice, pasta, or baked potato.” Label for burger. 1988. 3 inch diameter. Black and yellow, with same logo.

Talk with Mara Devine. 1995. June 1. In 1995 Cajun Barbecue Style was renamed and divided into two products: Vegan Cajun Burger, and Cajun Tofu Sloppy Joe. She moved from Miranda to Arcata, California, in June 1993.

3222. Togashi, T. 1987. [A balanced high-barrier Saran UB film]. *Fudo Pakkejingu (Food Packaging)* 31(2):55-62. [Jap]*

• **Summary:** The plastic film was used to package foods such as miso and dried skipjack tuna fish. Address: Japan.

3223. Yoneyama, T.; Ohike, T.; Iida, T. 1987. [Preparation of koji and miso using corn starch. II. Processing of miso using uncooked material]. *Research Report of the Nagano State Laboratory of Food and Technology* No. 15. p. 43-46. [2 ref. Jap]*

Address: Nagano State Lab. of Food Technology, Kurita, Nagano-shi, Japan.

3224. Yoneyama, T.; Ohike, T.; Iida, T. 1987. [Quality evaluation of Japanese soybean varieties for processing in rice miso. III.]. *Research Report of the Nagano State Laboratory of Food and Technology* No. 15. p. 47-50. [2 ref. Jap]*

Address: Nagano State Lab. of Food Technology, Kurita, Nagano-shi, Japan.

3225. Albert, Rachel. 1987. *Gourmet wholefoods: Vegetarian and macrobiotic cuisine*. Grain of Salt Publishing, 2211 N.E. 50th, Suite #12, Seattle, WA 98105. xi + 176 p. Illust. by Rebecca Rickabaugh. Index. Introduction by Karl Mincin. 21cm.

• **Summary:** This vegan cookbook contains no recipes calling for eggs or dairy products. At last, a macrobiotic cookbook without fish. This book has a brief, unstuffy introduction to macrobiotics and tasty, creative recipes. Includes 11 recipes featuring tofu, 4 with tempeh, 1 using black soybeans, and many using miso and shoyu. Note the correct use of the term “shoyu” throughout. Also has recipes for “amasake” and “amasake frosting.” Address: Washington.

3226. Bates, Dorothy R. 1987. *Kids can cook: Vegetarian recipes kitchen-tested by kids for kids*. Summertown, Tennessee: The Book Publishing Co. 120 p. Illust. Index. 23 cm. Spiral bound.

• **Summary:** The index of this vegetarian cookbook contains listings for 4 tofu recipes and 1 miso recipe, plus definitions at the Ingredients sections of tofu, TVP (Texturized Vegetable Protein), tempeh, and miso. Dorothy Bates is the mother of Albert Bates, a lawyer at The Farm, and a patron of The Book Publishing Co. Address: Tennessee.

3227. Beuchat, Larry R. 1987. *Food and beverage mycology*. 2nd ed. New York, NY: Van Nostrand Reinhold. xiii + 661 p. Illust. Index. 23 cm. [20+ soy ref]

• **Summary:** Contents: Contributors. Foreword. Preface. Classification of food and beverage fungi, by E.S. Beneke and K.E. Stevenson. Relationships of water activity to

fungal growth, by Janet E.L. Corry. Fruits and fruit products, by D.F. Splittstoesser. Vegetables and related products, by R.E. Brackett. Meats, poultry, and seafoods, by James M. Jay. Dairy products, by Elmer H. Marth. Field and storage fungi, by C. M. Christensen. Bakery products, by J.G. Ponte, Jr. and C. C. Tsen. Traditional fermented food products, by L.R. Beuchat. Alcoholic beverages, by G. G. Stewart. Edible mushrooms, by W.A. Hayes. Poisonous mushrooms, by Donald M. Simons. Fungi as a source of protein, by A. J. Sinskey and C.A. Batt. Fungal enzymes and primary metabolites used in food processing, by R. Bigelis and L.L. Lasure. Mycotoxins, by N.D. Davis and U.L. Diener. Methods for detecting mycotoxins in food and beverages, by L.B. Bullerman. Methods for detecting fungi in foods and beverages, by B. Jarvis and A.P. Williams. Appendix. Regulatory action levels for mold defects in foods.

Chapter 9, “Traditional fermented food products, has a section on koji and a long section on fermented soybean foods that discusses: Shoyu, miso, natto (incl. itohiki-natto, yukiwari-natto, and hama-natto / hamanatto; called tu su by the Chinese and tao-si by the Filipinos), sufu, meitauza, and témpé [tempeh]

Tables show: (9.1) Some fermented foods of fungal origin. For each food is given: Product name, geography, substrate, microorganisms, nature of product, and product use. Soy-related products include: Chee fan, Chinese yeast, Hamanatto, kecap, kenima, ketjap, meitauza, meju, miso (incl. chiang, jang, doenjang, tauco, tao chieo), natto, soybean milk, soy sauce (incl. chiang-yu, shoyu, toyo, kanjang, kecap, see-ieu), sufu (tahuri, tao-kaoran, tao-ju-yi), tao-si, taotjo, tauco and témpéh. Address: Dep. of Food Science, Agric. Exp. Station, Univ. of Georgia, Experiment, GA 30212.

3228. Campbell-Platt, Geoffrey. 1987. *Fermented foods of the world: A dictionary and guide*. London and Boston: Butterworths. xxiii + 291 p. 26 cm. [25 soy ref]

• **Summary:** The author classifies fermented foods into 9 groups: Beverages, Cereal products, dairy products, fish products, fruit and vegetable products, legumes, meat products, starch crop products, and miscellaneous products. Fermented legume products are particularly important in the diets of East Asia, Southeast Asia, and the Indian subcontinent. He has sections on many fermented soyfoods (dawadawa, hama-natto, kenima, miso, natto, tempe [tempeh], sufu) listing major areas consumed, related terms, how consumed, types, how produced, microbiology and biochemistry, and a few key references. His research began in Ghana with dawadawa made from the African locust bean. Address: National College Prof. of Food Technology, Dep. of Food Science & Technology, Univ. of Reading, Reading, Berkshire, UK.

3229. Diamond, Harvey; Diamond, Marilyn. 1987. *Fit for life II: Living health*. New York, NY: Warner Books. 490 p. [423* ref]

• **Summary:** The authors of the best-selling *Fit for Life* “America’s #1 Diet Book,” write more about their program based on the traditional Natural Hygiene philosophy. They encourage people to eat more raw foods and to cut down on animal products, especially on meat and dairy products. Chapter 18 is titled “Questions frequently asked.” One of these (p. 323) is “*What about tofu?* This ancient food which originated in China over one thousand years ago has recently attracted our attention. It is an easily digestible protein which can play an important role in your diet as you begin to decrease your intake of animal protein. Tofu is made from soy milk, the liquid resulting when soaked and ground soy beans have been gently boiled for a short time. In high quality tofu preparation, the milk is then solidified with nigari (concentrate remaining when sea salt is extracted from sea water) or calcium sulfate (from gypsum). Tofu is rich in amino acids and calcium, containing more calcium by weight than dairy milk. It is also rich in iron, magnesium, phosphorous, potassium and sodium, essential B vitamins, choline and vitamin E. Unlike other proteins, it is alkaline, rather than acid. Because of this alkalinity and because it contains no crude soybean fiber, tofu combines well with starches, especially brown rice and other grains and whole grain breads. Watch for lots of new tofu recipes in the upcoming cookbook, *The Fit for Life Kitchen*.

The last major section of the book, titled “The Living Health Cookbook,” contains recipes. Under “Soups, Sandwiches, and Rolled-Up Yummies,” is a recipe for “Miso and Vegetables” (p. 405-06), a thick soup. The introduction to the recipe reads: “Miso is a soybean paste that is used in Japanese and macrobiotic cooking as a base for soups. It is also made from brown rice or barley, but these are not as common. I used to buy miso only in health food stores, but now I find it in the Asian food section of my supermarkets. In soup it has a mellow flavor and does not require the addition of any other flavorings, especially since it already has a slightly salty quality.”

These are the only two references to soyfoods in the book.

3230. Downes, John. 1987. *Soy source: A practical guide to cooking with soy foods*. Chatswood, NSW, Australia: Nature and Health Books. Co-published in 1987 by Prism Press, 2 South Street, Bridport, Dorset DT6 3NQ, England. Distributed in the USA by Avery Publishing Group. 127 p. No index. 22 cm. [21 ref]

• **Summary:** Contents: Introduction, Nutrition & Soyfoods, Ingredients & Techniques, Glossary, Appetizers & Dips, Marinades & Accompaniments, Soups, Soup Noodles, Main Courses, Salads & Dressings, Desserts, Bibliography. A cookbook containing very little information about soyfoods

in Australia. The author was born in 1949. Address: Australia.

3231. Gentle World, Inc. 1987. *The cookbook for people who love animals*. 4th ed. P.O. Box 1418, Umatilla, FL 32784. 192 p. Introduction by Michael A. Klaper, M.D. Index. 26 cm. The first edition was copyrighted in 1981. The fifth edition (192 p.) was copyrighted in 1989.

• **Summary:** A good collection of over 300 vegan recipes, which are straightforward, appetizing, and nutritious. Special section includes recipes for cat and dog food. Contains 15 tofu recipes (including a non-fermented tofu yogurt, p. 13), plus several each using miso, soymilk, whole dry soybeans, and okara. The book contains many nice quotes about vegetarianism and veganism.

The cover of the 1986 ed. and of the fifth edition (copyrighted 1989) is red, orange, and green on yellow. The top of the cover states: “Over 300 totally vegetarian recipes, from beginner to gourmet. No meat—No eggs—No dairy—No sugar or honey—No cholesterol.” At the bottom is a field of red and yellow flowers.

Page 12 contains a recipe for Nut Milk using ¼ cup nut butter (peanut butter, cashew butter, almond butter, sesame tahini butter, or sunflower seed butter) and 1 cup water. Address: Umatilla, Florida.

3232. Ito, Kiyoe; Arai, E.; Fuke, S. 1987. *Sawara no misozuke ni kansuru kenkyū: Tsukekomi kikan-chū no ganchisso seibun no dōtai ni tsuite* [Studies on fillets of Spanish mackerel pickled with soybean miso: Changes of nitrogenous compounds during pickling]. *Kaseigaku Zasshi (J. of Home Economics of Japan)* 38(4):267-73. [7 ref. Jap; eng]

• **Summary:** Spanish mackerel is *Scomberomorus niphonius*. Pickling time required to obtain the most favorable products were 72 hours for soybean miso and 48 hours for mixed soybean miso. A decrease in trimethylamine in the early stage of pickling suggests that soybean miso decreases the fishy odor. Address: Faculty of Education, Tokyo Gakugei Univ., Koganei, Tokyo 184, Japan.

3233. Karim, Mohamed Ismail Abdul; Hassan, Zaiton. 1987. *Traditional fermented foods of Malaysia*. In: *Traditional Foods and Their Processing in Asia*. Tokyo: NODAI Research Institute, Tokyo Univ. of Agriculture. vii + 235 p. See p. 210-18. [12 ref]

• **Summary:** The authors discuss the preparation of a number of Malaysian fermented soyfoods, including tempeh, kicap kacang soya (soy sauce), and tauco (soybean paste). They also discuss other Malaysian fermented foods: budu or kicap ikan (fish sauce), cinaluk (fermented shrimp), belacan (fish/shrimp paste), pekasam (fermented freshwater fish), tapai (fermented rice or cassava),

tempoyak (fermented durian), tairu/taire/taina (fresh cow's milk fermented by bacteria equivalent to sour milk or yogurt), dadeh (made from fermented buffalo milk), idli and dosai, arak beras (rice wine), toddy (palm wine), idli (steamed pudding), dosai (pancake), dadeh (fermented sweetened milk), and jeruk buahbuahan & sayur sayuran (pickled fruits and vegetables). Address: Faculty of Food Science and Biotechnology, Universiti Pertanian Malaysia, Malaysia.

3234. Nichterlein, Karin. 1987. Huelsenfruechte [Legumes]. Bonn, Germany: AID (Auswertungs- und Informationsdienst fuer Ernaehrung, Landwirtschaft und Forsten). 20 p. Illust. 21 cm. [10 ref. Ger]

• **Summary:** The section on soybeans (p. 14-16) discusses soya oil, lecithin, soybean meal, soy protein concentrates, soya bread, low-fat soy flour, Sojemark (Soya meat), TVP, soya milk, tofu, soy sauce (shoyu, tamari), miso, tempeh, sufu (fermented tofu), natto, and soy sprouts. Address: Institut fuer Pflanzenbau und Pflanzenzuechtung I, Giessen, Germany.

3235. NODAI Research Institute. 1987. Traditional foods and their processing in Asia. Tokyo: NODAI Research Inst. vii + 235 p. Seminar held Nov. 13-15, 1986 at the Tokyo Univ. of Agriculture, Tokyo, Japan.

• **Summary:** Contents include: Oncom: Fermented peanut pressed cake, by Dedi Fardiaz. Mochi: Rice Cake, by Akiko Kawabata. Miso: Bean paste, by Hisao Yoshii. Chemistry and technology of tofu and its derived products, by Tokuji Watanabe. Indigenous fermented foods in Nepal, by Tika Karki. Improvement of traditional soy sauce fermentation mold, by Sri Hartadi and Siti Kabirun. Address: Tokyo Univ. of Agriculture, 1-1-1 Sakuragaoka, Setagaya-ku, Tokyo 156, Japan.

3236. Popham, Peter. 1987. The insider's guide to [south] Korea. Edison, New Jersey: Hunter Publishing 199 p. See p. 60. Illust. (color photos by Alain Evrard). Maps. Index. 23 cm. [9* ref]

• **Summary:** The 1988 Summer Olympics in Seoul introduced Korea to the modern world in a big, new way. This book was written for that event.

The chapter titled "Korean cuisine" (p. 58+) explains that it is the least known of the culinary traditions of Asia, and offers strong evidence of the nation's distinctiveness, which shows clear Mongol influence. Like the Chinese and Japanese, the Koreans also eat "soy beans and bean curd" [tofu], and bean sprouts [soy sprouts are more popular than mung bean sprouts]. The undisputed mark of Korean cuisine is kimch'i [kimchi], most of which is still made by fermentation at home of a vegetable (such as cabbage), always with chili and garlic; there are many different types of kimch'i, the most popular of which are cabbage stuffed

with oysters, sliced cucumbers with radish and ginger, diced daikon radish with scallions, and white radish sticks floating in brine. Other favorite Korean seasonings, besides garlic and chili, are scallions, ginger, sesame oil, sesame seeds, and soy sauce.

Pages 60-62: "There is also a whole range of fermented pastes and sauces for dipping, called *chang*. Every home and restaurant has its own recipe for *chang*, and each batch comes out differently. Based on a fermented mash of soybeans, the three most common varieties are "*kan chang*, a dark liquid, like soy sauce, *daen chang*, a thick, pungent paste, and *kochu chang*, a fiery version laced with chilies."

Side dishes, known as *panch'an*, accompany the main dish, rice, and add variety to the basic Korean meal. They include: *Tubu*: Soybean curd, tofu. *Manul changah-chee*: Green garlic pickled in soy sauce. *Don chun*: Beef and bean curd patties spiced with ginger.

Koreans love to make rich, thick stews, especially in winter. "*Chigae* is a special thick stew simmered in heavy clay crocks." Favorite Korean soups (*tang*) and stews include: *Maeun tang*: Rich soup of meat, fish, bean curd, zucchini and scallions. *Ten chang chigae*: Thick stew of meat, fish, bean curd, squash and chilies.

Simple "one-bowl" meals, especially popular as summer lunches, include: *Kong kookso*: Wheat noodles in fresh soy milk. *Udong* [Jap. udon]: Broad wheat noodles with onions, bean curd, egg and chili. *Kongnamul pap*: [Soy] bean sprouts, beef and cabbage served over rice.

A photo (p. 63) shows a man grinding food using a hand-turned stone mill (quern).

3237. Rizzi, George P. 1987. The biogenesis of food-related pyrazines. *Food Reviews International* 4(3):375-400. [102* ref]

• **Summary:** Flavorous pyrazines have been found in many fermented foods; the most extensive studies are those on soybeans, cocoa, and cheeses. At least three studies (which are summarized) have shown that natto contains various pyrazines. Table 2 (p. 379) shows pyrazines in foods produced by specific microorganisms; they are found in natto (produced by *Bacillus natto*), soysauce (*Aspergillus sojae*), miso (*Aspergillus oryzae*), and soybeans (*Aspergillus oryzae*). Address: The Procter & Gamble Company, Cincinnati, Ohio.

3238. Sayers, Robert; Rinzler, Ralph. 1987. The Korean onggi potter. Washington, DC: Smithsonian Institution Press. 288 p. See p. 58-60, 71, 75, 77. Illust. 23 cm. Series: Smithsonian Folklife Studies, No. 5. [166* endnotes]

• **Summary:** Onggi are traditional Korean earthenware vessels, used for the storage of pickled vegetables, bean pastes and soy sauces. Fieldwork for this project was initiated by Ralph Rinzler in 1971.

The section titled “Storage containers” (p. 58-59) contains a list of the names of ceramic food jars, with their appropriate uses, as given by people in Korea’s capital, Seoul. “Soy sauce, for example, is stored in quantity throughout the year in large and medium size outdoor receptacles (*kannjang tok* and *kanjang hangari*); as needed, the liquid is transferred to a small spouted kitchen form (*kanjang tanji*).” The large outdoor jar used to store soy paste *toenjang* is called a *toenjang tok* and the small kitchen form a *toenjang tanji*. The corresponding jars for red-pepper paste (*koch’ujang*) are called *koch’ujang hangari* and *koch’ujang tanji*.

To understand better how these storage jars are used, it is useful to describe the preparation of four Korean dietary staples: soy sauce, soybean paste, red pepper paste, and kimch’i. “The first of these, reddish black soy sauce (*kanjang*), is made from yellow soy beans boiled four or five hours, then mashed into a paste called *meju*. Today yeast is added to the *meju*; formerly it was molded into large rectangles or truncated cones, which were dried outdoors on rice straw mats, then hung from the house rafters to leaven [sic, mold] naturally over several months. In the springtime, the mold-covered *meju* is broken up into smaller chunks and submerged in a brine-filled *tok* positioned on an architectural feature of the outdoor living space called a *changdoktae* (“place for sauce jars”). This might be a stone or concrete terrace built up in a sunny part of the dwelling’s inner courtyard or, in the city, an apartment balcony or rooftop (Figures 8 and 9, p. 60-61).

Over a period of two or three months, the mistress of the house checks her jars, taking care to see that their contents receive only the proper amount of sunlight. Then, in May or June, she boils the clear, dark liquid in a cauldron and replaces it in still other jars along with red peppers and chunks of wood charcoal, which absorb dirt and inhibit strong odors. The solid moldy matter that floats to the top is skimmed off, then crushed, salted, and kneaded into a paste (*toenjang*), which constitutes a second major soy by-product. For most Koreans the making of soy sauce and soy paste is a yearly activity.” An affluent family might prepare an even larger supply. The sauce is believed to stay fresh up to three years, and is even said to improve with age.

“A second staple is the hot seasoning *koch’ujang*. In autumn, red chili peppers are harvested and sun-dried for a week or more. Then the peppers are split open and left in the sun a few days longer, after which the seeds are dislodged with a pole. What remains is pulverized in a mortar, then sifted through a pine-root sieve. Simultaneously (or during the making of soy sauce), a *meju* ring is prepared and secreted away in a dark corner of the house to ripen. In the springtime, the red pepper powder and pulverized *meju* are combined with rice paste *ch’apssalchuk*, salt, and sugar. The *koch’ujang* is not

cooked, but is left to ferment in a storage jar for three or four months.”

Most cauldrons are made of iron, although some, made of carved soapstone, are used for preparing medicinal foods. “Ceramic cauldrons are perhaps the least common; however a stew of fermented soybean paste [*toenjang*] is sometimes cooked in a small example (*toenjang sot*) manufactured from a low-firing refractory clay called *koryôngt’o*, which is more resistant to shattering than dense, homogeneous stoneware bodies (*chômto*) (Fig. 17), p. 71.

Photos show: (1) Korean onggi peddlers, ca. 1900, with long wooden racks that hold a heavy load of many containers on their backs (frontispiece). (2) Rooftop terrace (*changdoktae*) for sauce jars. Photo by Ralph Rinzler, 1971 (p. 60). (3) Rural version of *changdoktae* at Kaya village, Kyonggi Province (p. 61). (4) A small ceramic cauldron (*toenjang sot*) for preparing soy paste, Kyongju, N. Kyongsang Province (p. 71). (5) A small pouring vessel (*kanjang tanji*) for soy sauce (p. 77). Address: 1. Dep. of Anthropology, California Academy of Sciences, San Francisco, CA 94118.

3239. Shannon, Sara. 1987. Diet for the atomic age. Wayne, New Jersey: Avery Publishing Group Inc. xviii + 316 p. Introduction by Ernest J. Sternglass, PhD. Index. 23 cm. [400+* ref]

• **Summary:** The subtitle on the cover reads: “How to protect yourself from low-level radiation.” This book, written from a macrobiotic viewpoint, contends that various foods, including miso and sea vegetables, can protect people from radioactivity. Chapter 6, “Diet for the Atomic Age,” discusses miso, tofu, tempeh, and sea vegetables at length as foods that can protect us from radiation (p. 130, 145-55). The story of how miso protected Dr. Akizuki and his staff from the radiation of the atomic bomb dropped on Hiroshima is told on pages 77, 116, 148-49.

Chapter 8, “Recipes” (p. 193-234) includes many macrobiotic-style soy-related recipes and a special section titled “Tofu and Tempeh.” The chapter contains 13 tofu recipes, 7 miso recipes, and 4 tempeh recipes. The author received her degree in nutrition from the State University of New York. Address: Practicing nutritionist and health counselor, New York City.

3240. Shimoura, Michiko; Takahashi, Y.; Yoshimatsu, F.; Matsumoto, J.J. 1987. Kamasu sawara niku no misozuke shori ni okeru tekusuchaa to tanpakushitsu no henka [Changes in texture and proteins of wahoo (*Acanthocybium solanderi*) fish meat cured in miso]. *Kaseigaku Zasshi (J. of Home Economics of Japan)* 38(1):13-21. [11 ref. Jap; eng]

• **Summary:** Frozen wahoo fillets were cured in miso at 4°C for 28 days. The meat was very hard after 3 days of curing, but became tender after 21 days. Decomposition was attributed to the proteolytic enzymes of miso acting on the

fish meat proteins. Address: 1&3. Faculty of Domestic Sciences, Otsuma Women's Univ., Chiyoda-ku, Tokyo 102, Japan.

3241. Sonntag, Linda. 1987. *The little tofu book*. London: Judy Piatkus (Publishers) Ltd. 60 p. Illust. by Trevor Newton and Hanife Hassan. No index. 16 cm.

• **Summary:** Contents: What is tofu? Storing tofu. What to do with tofu. Tofu recipes. Dips and spreads. Tofu, the wonder health food. The food for the future. Tofu slimmers. Making your own tofu. The bonuses of making tofu: Go, okara, soya bean milk, yuba, whey. Tofu in Japan. Tofu in Indonesia. Tofu in China. Miso. Other titles in the series. Note: This book draws heavily on *The Book of Tofu* by Shurtleff and Aoyagi. Address: England.

3242. Yoshii, Hisao. 1987. Miso: Bean paste. In: *Traditional Foods and Their Processing in Asia*. Tokyo: NODAI Research Institute, Tokyo Univ. of Agriculture. vii + 235 p. See p. 74-81. [3 ref]
Address: Faculty of Agriculture, Tokyo Univ. of Agriculture, Tokyo, Japan.

3243. Zimmerman, Maureen Williams. 1987. *Sunset vegetarian favorites*. Menlo Park, California: Lane Publishing Co. 96 p. Originally published in 1983 as *International Vegetarian Cooking*.

• **Summary:** Written and compiled by the editors of *Sunset Books* and *Sunset Magazine*, this lacto-ovo vegetarian cookbook is different from a *Sunset* book by the same title published in 1981. It contains many recipes plus full-page color photos, and illustrations (line drawings) by H. Tom Kamifuji of various vegetables. The subtitle on the cover only reads: "Delicious recipes from around the world."

Chapter 1, titled "Vegetarian ways around the world," gives a good introduction to the subject.

Soy-related recipes include: Miso grilled mushrooms (Japan, p. 14-15). How long to simmer soybeans (p. 49). Homemade pasta—whole wheat & soy (p. 52). Golden tofu-cauliflower soup (Thailand, p. 34-35). Greens & tofu in peanut sauce (Thailand, p. 48). Stir fried tofu & vegetables (Vietnam, p. 50). Mandarin pancakes with spicy tofu filling (China, p. 70). Cornmeal soy crepes (p. 72-73). Address: Menlo Park, California. Phone: 415-321-3600.

3244. Brunthaler, Norbert. 1988. Re: Soyfoods made and sold by Sojvita. Letter to William Shurtleff at Soyfoods Center, Jan. 4. 1 p. Typed, with signature on letterhead. [Eng]

• **Summary:** "Thank you for your letter of Dec. 10." He gives the year and month that his company started to make and sell the following products: Tofu, Tofu marinated and baked, Tempeh, Sojanaise, Tofuburger, Tempeh vacuum

packed and stable, Tofu spread (4 kinds), Sojella (enriched soymilk), Soyoghurt with fruits, Natto.

"These are only our soy-products which we sell by ourselves or through distributors in Austria. (Furthermore we produce rice-wafers, seitan, gomasio, mochi.) We cannot say, which company is the largest in Austria, but we have the most different kinds of soyproducts. Our next competitor is: Sojarei in Baden and a smaller one is Tofurei in Wels. Furthermore there is only one Tempeh-producer in Vienna who sells tempeh and different cookies. These are all soy-producers in Austria. We hope we could help you with this information. With best regards. N.S.: Red miso and barley miso is in development since 1984." Address: Sojvita Produktions GmbH, Hauptplatz 1, Lichtenwoerth, Austria. Phone: 02622 / 75494.

3245. Miyazawa, Mitsuo. 1988. [Re: History of Sendai Miso Shoyu Co. Ltd.]. Letter to William Shurtleff at Soyfoods Center, Jan. 14. 2 p. [Jap; eng+]

• **Summary:** Although this company was founded in 1919, its roots go back to the late 1500s. In March 1593 (Bunroku 2) 3,000 soldiers of Idate Han (the former feudal domain in northeast Japan where Sendai is now located) went to Korea, led by Daté Masamuné (DAH-tay Mah-sah-MU-nay) in the army of Toyotomi Hideyoshi. It was found during the summer battles that the miso brought by the soldiers from most other Hans started to spoil; only that from Idate Han (Sendai) remained tasty, and it was shared with the other soldiers. From this time the fame of Sendai Miso began to spread throughout Japan.

During the Genroku Period (1688-1703) the miso makers in the Sendai area formed a trade group named Miso Nakama. "Nakama" means "colleague, fellow worker, comrade, or associate." They established rules and made miso under the motto "Examine the quality first." During the Kyoho Period (1716-1735) they started selling shoyu and the group changed its name to Miso Shoyu Nakama." Sasa Ju (Sasaki Jubei) joined this group in the year 1834 (Tempo 5) and worked to protect its quality and tradition. During the Taisho Period (1912-1916) the Japanese economy was strong and demand for miso and shoyu from the Sendai area increased. So in 1919 the members of the Miso Shoyu Nakama formed Sendai Miso Shoyu K.K., headed by a descendant of Sasaki Jubei with the same name. The current president of Sendai Miso Shoyu K.K. is the 8th generation named Sasaki Jubei.

Since the mid-1970s the company has exported quite a bit of its naturally fermented miso and shoyu to macrobiotic and natural foods companies in the USA and Europe. Address: Sendai Miso Shoyu Co. Ltd., Furujiro 1-5-1, Sendai 982, Japan.

3246. Van den Berg, H.; Dagnelie, P.C.; Staveren, W.A. van. 1988. Vitamin B-12 and seaweed. *Lancet* i(8579):242-43.

Jan. 30. [6 ref]

• **Summary:** “Neither in fermented soya products (tempeh, shoyu, tamari, rice miso, barley miso, tofu), nor in other fermented products (amasake rice, umeboshi prunes) did we find measurable B-12 (all below 0.02 micrograms per 100 g).” Tests done using both radioassay and *Lactobacillus leichmanii* showed that Spirulina and Nori (*Porphyra tenera*) were the two best vegetarian sources tested. But the B-12 in the nori does not appear to be available to the body. Its presence may be due to corrinoid-like B-12 analogues.

This study showed a tendency toward vitamin B-12 related anemia (not iron-related) in macrobiotic children who are generally vegan. A deficiency of vitamin B-12 in children can result in serious neurological damage. Address: 1. TNO-CIVO Toxicology and Nutrition Inst., 3700AJ Zeist, Netherlands; 2-3. Dep. of Human Nutrition, Agricultural Univ., Wageningen, Netherlands.

3247. Ohnishi, K. 1988. Miso jôzô ni okeru α -ka mai no riyô [Utilization of pre-gelatinized rice in the production of rice miso]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 83(1):30-36. [25 ref. Jap]
Address: Takeya-miso, Suwa, Nagano-ken 392, Japan.

3248. Ohnishi, K. 1988. [Utilization of pre-gelatinized rice in production of rice miso]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 83(1):30-36. [25 ref. Jap]*

3249. Shurtleff, William; Aoyagi, Akiko. comps. 1988. Marketing soyfoods—Labels, ads, posters, and other graphics: Miso and soy sauce. Lafayette, California: Soyfoods Center. 148 leaves. Illust. No index. 28 cm. Series: Marketing soyfoods.

• **Summary:** This book is a collection of black-and-white photocopies of materials ranging in date from 1975 to 1986. The books in this series, each a unique collection of graphic materials, are designed for a number of purposes: (1) To serve as a source of ideas, ingredients, inspiration, legal specifications, and basic guidelines for companies in the process of developing their own products, designing their own graphic materials, and conceiving their own marketing strategies. (2) To document the tremendous diversity of soyfoods products and the way that each is presented and marketed. (3) By arranging the materials in chronological sequence, to help document the development and history of new product categories and soyfood types, and with them the rise of the soyfoods industry and market in the Western World. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3250. Nihei, Takao. 1988. History of amazake, sake, shoyu, and miso in Hawaii (Interview). *SoyaScan Notes*. Feb. 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Phone interview followed by a letter dated Feb. 18. He has written a history of sake, miso, and shoyu in Hawaii and America (5 installments), which he will send. Sake was first made in Hawaii in 1908 by Honolulu Shuzo Seizo Gaisha; the brand was Takara Masamune. Mr. Nihei did research on shoyu and miso at the National Fermentation Lab (Jozo Shikenjo) in Japan with Dr. Nakano and knows our work. From there he got into sake. He doesn't know much about amazake but thinks that there are no publications on it and there was never a commercial amazake company in Hawaii. The reason for that is that since long ago everybody there has made amazake from sake lees, perhaps since 1908, and not from koji, though koji was sold before World War II. He moved to Hawaii in 1950 and many people were making amazake from sake lees at that time. They mix the sake lees with hot water, plus sugar and a little grated ginger. His wife's method is his favorite.

Recipe #1, Hawaiian Style Amazake from Glutinous Rice and Sake Lees: Cook 1 cup glutinous rice (incorrectly called “sweet rice” or “mochi rice”) with 3 cups water to make a porridge or gruel (*okayu*). Turn off heat and leave in covered pan for 10 minutes. When it is still fairly hot (50-55°C; 122-131°F), mix in 1 lb sake lees (sake kasu, which still contain some enzymes). Wrap the pot with towels or a blanket to keep the heat at about 130-140°F (this is important) and allow to incubate in a warm place for about 2-3 hours. When the mixture becomes soft, add 1 cup sugar and 3 cups hot water, then bring to a boil over low heat. To serve, mix 1 part of this base with 2 parts water; Enjoy hot or cold. Refrigerate leftovers in a sealed glass jar.

Recipe #2, Quick and Easy Hawaiian Style Amazake from Sake Lees (without Glutinous Rice). Mix 3 cups hot water with ¼ pound (about ¾ cup) sake lees. Let it stand for a while until the lees become soft. Heat on low heat, stirring gently until lumps dissolve. Stir in ½ to ¾ cup sugar and ¼ teaspoon salt. When it comes to a boil, add a little grated ginger juice immediately, and serve. Address: 422 Uhini Place, Honolulu, HI 96813. Phone: 808-537-1369.

3251. *Herald-Journal (Clarinda, Iowa)*. 1988. Iowa completes Japanese soybean market. Feb. 18. Also in *Herald-Patriot (Chariton, IA)*. Feb. 25. “Goal is Soybean Japanese Prefer.”

• **Summary:** Iowa farmers are trying to be more competitive in producing special soybeans for the Japanese. The Vinton and Pride soybeans, special varieties used in tofu, are large-seed, high protein. They have a yellow seed coat and a clear hilum. Other types of soybeans known as Prize and Iowasoy L5301 are used in preparing miso. In Iowa, out of 7,000 soybean farmers, only 100 farmers grow the special soybeans. There are no more than 100,000 acres in Iowa for producing special soybeans, which is a small amount. A

farmer takes some gamble because these special varieties of soybeans don't yield as much as regular soybeans. However, a farmer receives a premium for high quality special soybeans. The market is changing, becoming more specialized. To sell the special soybeans a farmer has to contract with one of the eight soybean exporters in Iowa. During the 1960s Japan received its food soybeans from the IOM, which stands for Indiana, Ohio, and Michigan.

3252. Belleme, John. 1988. Update on miso in America. How about amazake as a soymilk sweetener? (Interview). *SoyaScan Notes*. Feb. 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Mitoku (Mr. Kazama and Chris Dawson) is considering a joint venture with Sendai Miso Shoyu of a miso plant on the West Coast of the USA. This is still very tentative. They are also considering making amazake. But about 2 years ago Miyako Oriental Foods increased their miso production capacity. They can probably make over 1 million pounds a year now. It was about 600,000 lb/year. Fujiwara Brewing Co. in Okayama, which makes equipment for miso and soy sauce companies, supplied the equipment to Miyako. The company San-J finally used to build their tamari plant and supply the equipment was Fujiwara's competitor, Nagata. Steve Earle said this was the same company that had just helped expand the Miyako plant. According to the people at Ohsawa-America, Mr. Kitani, the Japanese man who makes Yamaki Shoyu, and Bob Kennedy, formerly of Chico-San are planning a miso plant in the USA, probably with automatic koji equipment.

John feels that sales of miso in America have slowed down and that if new companies enter the market, it will be oversupplied. At American Miso Co. his maximum capacity was about 400,000 lb/year. The volume hasn't changed much in the past few years. Christian Elwell at South River Miso Co. has a capacity for about 60,000 lb/year, which he hasn't reached. Both these are more expensive than Miyako (\$4.49 for American Miso white miso, Christian's is more, and Miyako's is about \$2.85/lb, or only 63% as much). He suggests: How about amazake as a sweetener for soymilk? It would replace barley malt and give the soymilk more body, kind of like a shake. Then you can put rice on the label. Great idea! Address: Route 5, Box 258, Rutherfordton, North Carolina 28139. Phone: 704-749-9537.

3253. Milbury, Peter. 1988. Chico-San, amazake, and rice syrup (Interview). *SoyaScan Notes*. Feb. 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Peter believes that the earliest recipe for amazake in a U.S. cookbook was in Cornelia Aihara's *The Chico-San Cookbook*. This was later reprinted as *The Macrobiotic Kitchen* by Japan Publications. The original book was a labor of love by Cornelia for Chico-San, edited

by Peter Milbury and Dave Schleiger. Cornelia has always taught using amazake as a sweetener, and she prefers it to rice syrup. She has a wonderful cake, sweetened with amazake and with an amazake frosting. She was a pioneer in introducing amazake to America.

Junsei Yamazaki is now selling his own miso. He is at Route 1, Box 1333, Orland, CA 95963. Phone: 916-865-5979. The product name is Junsei Amazake Miso.

Concerning the future of amazake: "I think it's hot. It's just got nowhere to go but explode. It's such a wonderful product, with so many variations. All the beverages are now dessert drinks. Someone should make an amazake counterpart to soymilk, sold in larger quantities, with a smoother consistency, less solids, and less sweetness. Chico-San is now working on an amazake powder with California Natural Products (CNP); mix with warm water and serve as a drink. Rice syrup also has great potential as a sweetener. Chico San's Yinnies, a malted sweetener, were the first product of their type in America. Sjon Welters of Nasoya is at least thinking about using amazake as a sweetener for soymilk. Sjon spent a week in the Chico-San rice syrup operation before it was shut down and moved to CNP. The amazake used for Rice Dream is much sweeter than a typical amazake. "I think Rice Dream is one of the most fantastic products I've ever tasted. Originally Chico-San was going to make the product for him. Then we shifted down to CNP. One company that might have interest in amazake is JGR Resources, Inc. Dr. Adam Lambert is Technical Director. P.O. Box 97, Haskell, New Jersey 07420. Phone: 201-835-7644. Their product is Koji-Converted Rice-O-Sweet Brown Rice Syrup. They are a wholly owned minority corporation, that took over a brewery.

The first attempt Peter ever heard of to package amazake in Tetra Pak was in Jan. 1985, just after Heinz took over Chico-San. Bob Kennedy and he set up a run with Real Fresh in Visalia. Real Fresh botched the homogenization. By this time Chico-San had a lock-tight exclusive contract with CNP to make rice syrup and amazake just for them, using their rice. Chico-San set up CNP in the rice syrup and amazake business and spent enormous amounts of time showing them how to do it. Before that, starting in 1972, Chico-San made its own rice syrup in Chico using not koji but a combination of malted brewer's barley and commercial enzymes from Miles Laboratories. At that time CNP would make the amazake for Robert Nissenbaum, but Chico-San would do the billing. This changed after Heinz took over and couldn't meet their commitment to the contract with CNP. So CNP got out of the contract and dealt directly with Nissenbaum.

Milbury and Belleme say Macromuse (Peggy Rosoff; 301-656-4313, Bethesda, Maryland Circ. 12,000) is much better for long in-depth articles than East West. Address:

Lundberg Farm, Box 369, Richvale, California 95974.
Phone: 916-882-4551.

3254. Kushi, Aveline. 1988. Early imported amazake and miso in America (Interview). *SoyaScan Notes*. Feb. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Aveline recalls that she first saw amazake in America in Los Angeles in about 1970. She bought some at the time. It was a white rice amazake imported from Japan, probably in a plastic bag. She came to America in 1951 and by 1952 recalls seeing Hatcho miso being imported to the East Coast from Japan by Japan Foods. Address: Brookline, Massachusetts.

3255. **Product Name:** The Wizard's Sizzle. Spicy Barbecue Sauce.

Manufacturer's Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer's Address: P.O. Box 3150, Union, NJ 07083. Phone: 201-964-8176.

Date of Introduction: 1988. February.

Ingredients: Tomatoes, cider vinegar, fruit juice concentrate, Barbados molasses, water, canola oil, cayenne pepper mash, shoyu soy sauce, miso, onion juice, garlic juice, The Wizard's magical blend of natural herbs and spices, sesame oil, sea salt, hickory smoke, seaweed extract.

Wt/Vol., Packaging, Price: 12 fluid oz (354 ml).

How Stored: Shelf stable.

New Product-Documentation: This was formerly Smoky Mountain Sizzlin', made by American Natural Foods and introduced in Sept. 1984. Label. 1988. 6 by 3 inches. Gummed glossy paper. Yellow, red purple, brown, black, and white. Illustration of a bearded wizard with hat, wand, and purple robe. Plus a dragon with fiery breath. "Makes any meal sizzle with sure-fire magic. Use your imagination and watch the magic make foods disappear. Contains nothing the least bit artificial or phony. Shake well and wake the dragon up. Wizard Baldour."

3256. **Product Name:** Premier Japan Natural Sesame Sauce. Gourmet Dip & Dressing.

Manufacturer's Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer's Address: 1115 Lousons Rd., P.O. Box 3150, Union, NJ 07083. Phone: 201-964-8176.

Date of Introduction: 1988. February.

Ingredients: Water, shoyu soy sauce, rice cooking wine (sake), sesame tahini, fruit juice concentrate, soy oil, rice vinegar, onion juice, toasted sesame oil, miso, arrowroot, sea salt, guar gum, mushroom & seaweed extract.

Wt/Vol., Packaging, Price: 8 oz jar.

How Stored: Shelf stable.

New Product-Documentation: Label. 1988. 6.5 by 3.5 inches. Glossy paper. Red, gold, orange, and black. Oval

silhouette of Kyoto pagoda against the sunset. "Gourmet International Cuisine. Nothing artificial. No MSG. Fruit Juice Sweetened. The Story of Premier Japan. Designed to introduce traditional Japanese cuisine to the world. "Japan's gourmet secret for bakes and broils. Use as a dressing for rice, vegetables and salads. Also great as a dip for chips and hors d'oeuvres." Chicken & tofu to perfection. A marvelous marinade too." Spot in Whole Foods. 1988. Feb. p. 58. Soya Newsletter. 1988. March/April. p. 8. These four new shoyu-based products are marinating- and dipping sauces, and dressings, part of the Premier Japan line of Gourmet Natural Products.

3257. **Product Name:** The Wizard's Hot Stuff. Spicy Hot Sauce.

Manufacturer's Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer's Address: P.O. Box 3150, Union, NJ 07083. Phone: 201-964-8176.

Date of Introduction: 1988. February.

Ingredients: Cider vinegar, fruit juice concentrate, water, red miso, African bird peppers, umeboshi plum vinegar, garlic juice, The Wizard's magical blend of natural herbs and spices, sea salt, seaweed extract.

Wt/Vol., Packaging, Price: 5 fluid oz (147 ml).

How Stored: Shelf stable.

New Product-Documentation: This was formerly Wizard Baldour's Hot Stuff made by Elf Works; American Natural Foods and introduced in 1981. Label. 1988. 5.5 by 2.5 inches. Gummed glossy paper. Yellow, red purple, brown, black, and white. Illustration of a bearded wizard with hat, wand, and purple robe. Plus a dragon with fiery breath. "Hot Stuff adds sure-fire magic to all your favorite foods. Use your imagination and watch the magic make foods disappear. Contains nothing the least bit artificial or phony. Shake well and wake the dragon up. Wizard Baldour."

3258. Elliott, James G. 1988. Consumer attitudes regarding soy products. In: L. McCann, ed. 1988. *Soybean Utilization Alternatives*. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 381-91. [3 ref]

• **Summary:** Discusses: Consumer awareness of soy foods. Consumers' awareness of manufacturers' use of soy protein. Consumer willingness to purchase meat products containing soy protein. People were asked, when you think of foods which are made from soybeans, what products come to mind? Unaided awareness of soyfoods among consumers was low, only 4 in 10 were able to name a specific soyfood on a top-of-the-mind basis. However, aided awareness was significantly higher. Soy sauce and soybean oil had the highest levels of aided awareness among consumers at 94% and 77% respectively. Tofu, soymilk, margarine, and soy nuts registered moderate levels of aided awareness at 45%,

38%, 38%, and 31% respectively. Tofutti came in next at 21% and miso came in last at 10%.

When asked if they had “ever tried” these products, of the eight soyfoods mentioned, soy sauce demonstrated the highest trial level at 75%. All other products “ever tried” were 20% or less. Respondents who had not tried a particular food product made from soybeans were asked if they would be willing to do so. Expressed willingness to try was in the 60% to 70% range. It was the highest for soybean oil, soy nuts, margarine, tofu and Tofutti.

65% of those surveyed responded positively when asked, “have you heard of soy protein being included in certain food products?” 35% were unaware. Among consumers who were aware that manufacturers use soy protein, 60% said that they were definitely using foods that contain soy protein, or believed that they were; 29% said they were not using them; and 11% didn’t know. When asked, “Does the fact that a food manufacturer uses soy protein in its products change your feeling about the company?,” 80% stated no difference; 8% stated that they felt better; and 12% said that they felt worse. Address: Manager of scientific communications, Protein Technologies International, St. Louis, Missouri.

3259. Golbitz, Peter. 1988. Whole bean soy products. In: L. McCann, ed. 1988. *Soybean Utilization Alternatives*. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 325-31.

• **Summary:** Discusses: Tofu. Soymilk. Yuba or soymilk film. Fresh green soybeans. Whole dry soybeans. Soynuts. Soy sprouts. Tempeh. Soy sauce. Miso. Address: Soyatech, Bar Harbor, Maine.

3260. Takeuchi, T. 1988. Mame miso seizô to hinshitsu tokusei [Manufacture and quality traits of soybean miso]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 83(2):105-11. [6 ref. Jap]

• **Summary:** Quality traits include aroma and flavor. Address: Faculty of Home Economics, Gifu Women’s College, Gifu, Japan.

3261. Wood, Rebecca T. 1988. All-American miso. *Bestways*. Feb. p. 27.

• **Summary:** Prior to the 1970’s, miso was an unknown word—and taste experience—to most Americans. Today this traditional Japanese food, is fast becoming an important staple for the health conscious. Address: Crestone, Colorado 81131.

3262. Kanai, Noritoshi. 1988. Miyako Oriental Foods, Mutual Trading Co., Rice Koji, Amazake, Natto, and Miso (Interview). *SoyaScan Notes*. March 4 and 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Mr. Kanai recalls that the brochure describing how to make miso and amazake using Cold Mountain Koji was printed in 1976, the same year the Miyako factory began. They immediately started to sell the koji, using the brochure. Miyako is owned 60% by Mutual Trading Co. and 40% by Yamajirushi Miso Co., a joint venture.

Mutual Trading Co. started to import Amazake from Japan to American in about 1968. He thinks they were the first company to do so. If that is correct, this would have been the first amazake sold commercially in the USA. The product was imported frozen in non-aseptic polyethylene bags. At the same time they imported frozen natto, and non-frozen miso and Hamanatto. Mutual Trading presently imports amazake in 6.3 oz (180 ml) cans. It is ready to drink. His amazake is made in Japan by Morinaga, the confectionery company, not the milk company. It is a real amazake, not a sake kasu type. Nishimoto also imports amazake in 6.3 oz tins; the brand is Imuraya. North American Food in San Francisco, a sister company (not a subsidiary) of Mutual Trading Co. Tokiwa in Los Angeles, Hosoda Brothers in San Francisco, and Central Boeki in Long Island, New York, probably do not import amazake. He thinks that total imports are about 1,000 cases a year. Mutual Trading imports about 200 cases a year (48 x 6.3 oz cans/case).

Miyako has recently reached its full capacity for making koji. So they are planning to expand by installing an automatic koji making machine. The machine has already been ordered from Nagata (preferred over their competitor Fujiwara) in Japan. The machine should be in Los Angeles in late April or early May, and start operation by June. He is thinking of adding barley miso and a new variety of rice miso. Now they use only half of the building’s floor space, so there is plenty of room for expansion. They plan to expand upward one level. Address: Los Angeles, California.

3263. Earle, Steve. 1988. Re: Answers to questions about history of San Jirushi. Letter to William Shurtleff at Soyfoods Center, March 7. 3 p. Includes a Sato family tree.

• **Summary:** No history per se of San-Jirushi has ever been written, however the Sato family has many records of historical interest. The original company, named Minato-ya (“Harbor Company”), was a trading house that traded up and down the rivers that empty into the Bay of Ise at Kuwana. Among the wares traded were salt, miso, and tamari. The miso and tamari were brewed in one of their warehouses (kura). Later this became Minato-ya’s principal business as the shipping trade moved north to Nagoya.

“There are indications that Minato-ya was already in operation at the beginning of the Edo period (1601), however it is not clear when it began producing miso and tamari as the earliest records were lost when the Minato-ya kuras were burned due to fire bombings in the Second World War...

“The company name was changed in 1909 from ‘Minato-ya’ to ‘Sato Shinnosuke Shoten’ and finally to ‘San-Jirushi Brewing Corporation’ in 1963.

“The original address was Ise-no-kuni, Kuwana-gun, Kuwana-cho Ooaza Senba.

“The original brand/trade name was Yamasan. The name and mark [three horizontal lines with a roof-like mountain over the top] symbolized Mount Tado (upriver just northwest of Kuwana) and the three rivers, Kiso, Ibi and Nagara...

“The mountain was dropped from the mark and the name changed to San-Jirushi in 1909. This name was officially registered in 1912.

“The original products were called ‘miso’ and ‘tamari’ (not ‘tamari-shoyu’). The original ingredients of Minato-ya’s miso and tamari were soybeans, water and salt. No wheat was used. There was also originally no *kosen* (roasted barley flour) used with the seed koji. This koji was called ‘tomo-koji’ and was made by obtaining koji-dama (half-fist sized balls of compressed, cooked soybeans) which were then hung in straw sacks over the rafters in the kura loft to incubate. In these days there were apparently tradesmen, much like the ‘tunjishi’ in sake brewing, who made a circuit of miso and tamari brewers, bringing with them tomo-koji. There is still one employee of San-Jirushi who can recall making koji by this method in the old San-Jirushi kura.

“San-Jirushi began using seed koji [koji starter] in 1933. Koji-ya Sanzaemon, the koji house that still supplies San Jirushi today, has been in operation continuously since the Muromachi period supplying seed koji for sake manufacture, however this technology was not applied to miso and shoyu manufacture until quite late (Kikkoman and the four major shoyu brand makers began using seed koji at about this same time).” Address: UN Park Building, 7th Floor, Ebisu-Nishi 1-19-6, Shibuya-ku, Tokyo 150, Japan. Phone: 03-780-5933.

3264. Ballard, Bob. 1988. History of Great Eastern Sun (Interview). *SoyaScan Notes*. March 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The company was founded in March 1982 by Barry Evans (who is now the sole owner and lives in Los Angeles). He may have been joined by Martin Roth and John Belleme. The original purpose was to be a distributor for the miso made by American Miso Company. But it soon decided to import Japanese macrobiotic products from Mitoku (the first order was placed in Jan. 1982) and later became a manufacturer. Address: 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730 or 704 252-3090.

3265. DeBona, Don. 1988. Re: History of The American Miso Co. Letter to Bob Carr at Cleveland East West Center, March 13. 6 p. Handwritten.

• **Summary:** “The American Miso Co. was begun in 1979 by Barry Evans, Sandy Pukel, Joe Carpenter, John Belleme, Michio Kushi, James Kenney, and several other partners. It was arranged for John Belleme and his wife to travel to Japan and study for 7-8 months with the Onozaki family of traditional miso makers. John Belleme returned and began making traditional miso for the then named Oak Feed Miso, Inc., previously called the Erewhon Miso Co., and presently the American Miso Co.

“Meanwhile, Barry Evans began a new company in order to distribute our miso. This company was, and still is, called The Great Eastern Sun Trading Co., located in nearby Asheville, North Carolina. Barry Evans eventually became the sole owner of the American Miso Co. also. I came to work for Great Eastern Sun in 1983. Prior to this I had worked for several years for Laurelbrook Foods, a large natural foods distributor in Maryland, and then on a Permaculture farm along the Maryland/Virginia border for two years growing organic winter wheat, barley, soybeans and summer produce according to the principles set forth in Masanobu Fukuoka’s classic, *The One Straw Revolution...* We still do some farming and quite a bit of gardening on our 100 acres here at American Miso Co., in the foothills of the Blue Ridge Escarpment. I met my wife at a macrobiotic study house in 1980.

“We arrived at American Miso Co. in February 1985 and I took over the position of miso maker after John Belleme’s departure in December 1985 [Note: Belleme was fired by Barry Evans.] I was trained to make miso by Akinori Takei, my Japanese teacher and friend, who had also studied with the Onozaki family in Japan. Takei-san remained with me for approximately another year; since then I have been on my own. We are a small enterprise and make approx. 250,000 lb of miso a year with only 3 employees and myself. We make all of our own koji (both barley and rice) by hand in a centuries-old fashion.” Address: Route 3, Box 541, Rutherfordton, North Carolina 28139.

3266. DeBona, Don. 1988. Developments at American Miso Co. since 1985 (Interview). *SoyaScan Notes*. March 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Don left his job as general manager at Great Eastern Sun and began to work at American Miso Co. (AMC) in February 1985. He took over management of the company in December 1985 after John Belleme left. It was a difficult transition, as Belleme and Barry Evans (an absentee owner) did not get along well. Since then, production of miso has roughly doubled, from 9 to 20 large miso vats. His miso teacher, Akinori Takei, stayed until October 1986. Since then Don has run the company. Not much of their miso is used any more in second generation products; they used to sell some mellow white and red miso to Nasoya and Simply Natural. Now 95-98% is sold for kitchen use in plastic tubs. The tubs replaced plastic bags 2

years ago. He also sells in bulk: 35 or 50 lb. He has always used all natural, organic ingredients, which makes his miso about twice as expensive as Cold Mountain. So they lost all their sales to food processors. But total volume has increased due to good sales work. His best-sellers are mellow white miso and traditional country (long-term) barley miso, followed by mellow barley, traditional red rice miso, and sweet white miso. He has ordered his koji starter through Mitoku for the last few years. Now he hopes to buy direct from Kojiya Sansanaemon in Aichi-ken. Don has studied macrobiotics for 12 years. AMC originally had 6 owners; Barry Evans now owns about 95%. Barry originally paid for John Belleme to study miso in Japan. Address: Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3267. *Essen und Trinken (Hamburg, W. Germany)*. 1988. Tofu-Diaet [Tofu diet]. 3:112-14, 116, 118, 120, 122, 124, 126, 128-30, 132. March. [Ger]

• **Summary:** A spectacular article preceded by a 1-page praiseful editorial on tofu titled "The Frog Becomes a Prince: Tofu Reveals Charm," by Angelika Jahr, the head editor of "Eating and Drinking." The first two-thirds of the article is in color, consisting mostly for large color photos of tofu dishes, with calorie counts; the last third is the recipes. There are also brief descriptions of miso, shoyu, and gomasio [gomashio] as typical Asian seasonings. Address: Postfach 30 20 40, 2000 Hamburg 36. Phone: 040 41 18(1).

3268. Filling a wooden vat of miso at American Miso Company (Photograph). 1988.

• **Summary:** This 4 by 6 inch color photo, dated March 1988, shows three workers (men) by a wooden vat of miso at the American Miso Co. in North Carolina. All are dressed in rugged yellow vinyl aprons and light shirts. One is standing on the floor, with his left arm held up against the ladder. The second is standing on the ladder. The third, Don DeBona, is hunkering down atop the vat.

3269. **Product Name:** Homestyle Ravioli [Tempeh Marinara, Tofu with Spinach, or Cheese Italiano].

Manufacturer's Name: Homestyle Foods (Formerly Sonoma Specialty Foods).

Manufacturer's Address: 2317 Bluebell Dr., Santa Rosa, CA 95401. Phone: 707-525-8822.

Date of Introduction: 1988. March.

Ingredients: Tempeh: Whole wheat durum and semolina flours, water, tempeh, tomatoes, onion, soy oil, garlic, miso, honey, natural herbs and spices. Tofu: Whole wheat durum and semolina flours, water, Homestyle Tofu Cottage Salad, Spinach, whole wheat bread crumbs, herbs, garlic and spices.

Wt/Vol., Packaging, Price: 14 oz 48 ravioli.

How Stored: Frozen.

New Product–Documentation: Interview with Dennis Hughes. 1988. Feb. 15. This product will be out shortly. Sales to local stores of all products are about \$165,000, which is about half of the company's total sales. Of the \$165,000 roughly 1/3 is products made by Homestyle; 2/3 is complementary products (mostly soyfoods) made by other companies. Roughly 3/4 of their total products are soyfoods. The company started distributing other manufacturer's soyfoods in about August 1985. Before that (7 years ago) they started to distribute a local pasta and gourmet sauce.

Label. 1988. March. Paperboard box. 10.5 by 7.5 by 3/4 inches. Red, green, and black on white. Front panel has a red, black, and green drawing of a plate of ravioli with a wine glass and salad. "No eggs. All natural. No artificial ingredients or preservatives. Non-dairy. Cholesterol free."

Leaflet from World Vegetarian Day in San Francisco. 1990. Oct. 6. Cheese Italiano is a new flavor in the ravioli line. It contains cheese but no eggs.

Talk with David Burns of Homestyle. 1990. Oct. 9. This product was introduced in about May or June of 1988. The name of the manufacturing side of the company changed from Sonoma Specialty Foods to Homestyle Foods in Oct. 1987.

3270. Hondo, Satoshi; Yasuhira, Hitomi. 1988. Shuseibun bunseki-hô ni yoru shihan miso no kaiseiki [Application of principal component analysis method to the evaluation of miso on the market]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 67-73. [6 ref. Jap; eng]

• **Summary:** Principal component analysis and multiple regression analysis were applied separately to the evaluation of Japanese light yellow and red miso, sold at retail stores.

3271. Hondo, Satoshi; Yasuhira, Hitomi. 1988. Taipu no kotonaru tane kôji-kin ni yoru miso no shijô. III. Tane kôji-kin to miso hinshitsu no kankei [Fermentation of miso using various koji molds. III. Effect of koji mold on the quality of miso]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 14-19. [14 ref. Jap; eng]

• **Summary:** Koji variants used to produce rice miso, barley miso, soybean miso, sake, shochu, soy sauce, etc. (*Aspergillus oryzae* and *A. Sojiae*) were evaluated, as regards such attributes as growth rate, fermentation products, enzymic activity and sensory quality.

3272. Imai, Manabu; Osawa, Y.; Nakamura, M.; Yasuhira, H. 1988. Chakushoku o yokusei-suru koen-sei nyûsan-kin no kensaku. II. [Selection and use of decolorizing strains of *Pediococcus halophilus* (in miso production). II.]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 37-41. [3 ref. Jap; eng]

3273. Ito, Kimio; Yasuhira, Hitomi. 1988. Kônôdo shokuen, gurukoosu sonzaika ni okeru *Bacillus subtilis* no dôtai [Behavior of *Bacillus subtilis* at high concentrations of NaCl and/or dextrose (in miso)]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 25-32. [16 ref. Jap; eng]

• **Summary:** Behavior of *Bacillus subtilis* at high NaCl and/or dextrose concentrate was examined, to evaluate the hygiene of miso. Growth, germination and sporulation were completely inhibited by 20% NaCl alone, 10% NaCl/20% dextrose or 15% NaCl/10% dextrose. Critical water activity for growth was 0.88.

3274. Leneman, Leah. 1988. Leaders of the soya revolution. *Vegan (The) (England)*. Spring. p. 20-21. [7 ref]

• **Summary:** The author, "herself an established authority on culinary applications of the soya bean, looks at the work of William Shurtleff and Akiko Aoyagi, the unsung heroes of the soya revolution." "It is possible that the books they have written which are not known to the general public may have had an ever greater influence than those which are—books like Tofu & Soymilk Production... Their books have provided the wherewithal for eager young entrepreneurs to move confidently into soya foods production, and the growth rate in this industry has been quite phenomenal, not only in the USA but on the continent and in Great Britain as well." Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

3275. Lubbe, James. comp. 1988. Abbreviated history of the Bountiful Bean Plant, Madison, Wisconsin. Bountiful Bean, 2049½ Atwood Ave., Madison, WI 53704. 23 p. Unpublished manuscript. [4 ref]

• **Summary:** The company was founded in 1978. 1. History table by year showing accounts, products, equipment, number of people, wages, other. 2. Newsletter and newspaper ads and articles. 3. Brochures, product announcements & job application descriptions. 4. Product labels.

Ad. circa 1983-84. Bountiful Bean Soyfood Deli. Macrobiotic dietary principles. Offers: fresh tofu, tofu pies, tabooli, toasted tofu, nori rolls, 4 soymilk flavors, 4 varieties of bulk miso, millet / tofu pudding, nutburger sandwiches, tempeh books, mini-tours of plant, spicy tofu, more! And: lowest soyfood prices in town, free samples and recipe sheets, managed by the workers. low-cost carry-out foods. 903 Williamson St. 251-0595. from: 7-6 Sun-Fri.; 7-4 Mon.; 10-4 Sat.

Update talk with Deborah Bachmann and Elizabeth Hanson. 1991. Nov. 1 and 11. In March 1990 Bountiful Bean Soyfoods moved from Madison, Wisconsin, to 620 Main St., Ridgeway, Wisconsin. Richard Kraemer and Elizabeth Hanson began to produce soyfoods during the last week in June, renting from the cooperative, then they

purchased the business on 21 Aug. 1991. Richard and Elizabeth are married with a son, are in their late 40s, and come from Oseola, Wisconsin; he is a carpenter (and was a pastor) and she a nutritionist. They are both very enthusiastic about tofu and the business. The co-op has now been changed to a private business. They work full time and they have three employees—1 full time and 2 part time. They are thinking of re-launching tempeh and soy yogurt. The cooperative got what they felt was a good price for the business. People who worked more than 6,000 hours (Chris Burant [8 years], Deborah [almost 10 years], and a woman named Solie) each got a large chunk. Another 11 people who had worked in the past were also given part of the money. The smallest amount of money distributed was \$250.00. Deborah and James Lubbe are no longer with the company. Bountiful Bean Soyfoods now makes tofu, Herb Tofu, plain or vanilla soy milk, Tasty Tofu, Hummus with Tofu (and garbanzo beans), and Taboolie with Tofu (salad, which also contains bulgar). They have discontinued tempeh and soy yogurt.

Update: Talk with Roger Bindl. 1993. April 15. Richard Kraemer would like to sell Bountiful Bean in Ridgeway and Roger is considering buying it. 85% of the company's sales are in Madison, Wisconsin. Address: Madison, Wisconsin.

3276. Osawa, Yoshiaki; Ishizawa, Hiroaki; Yasuhira, Hitomi. 1988. Ekusutoruuda shori daizu ni yoru miso no shijô. II. [Miso production from extrusion cooked soybeans. II.]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 7-13. [8 ref. Jap; eng]

• **Summary:** Soybean flour was cooked by boiling, steaming or twin screw extrusion and used, in conjunction with modified koji or appropriate isolated enzymes, in miso production. The modified koji had enhanced enzyme activity. Miso, koji and cooked soybean nutritional and sensory attributes were evaluated. Address: 1&3. Shinshu-Miso Kenkyusho, 469-6 Nakagosho, Nagano-shi 380, Japan; 2. Nagano Prefectural Research Inst. of Rural Industry.

3277. Osawa, Yoshikai; Yasuhira, Hitomi. 1988. Chakushoku o yokusei-suru koen-sei nyûsan-kin no kensaku. I. [Selection and use of decolorizing strains of *Pediococcus halophilus* (in miso production). I.]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 33-36. [2 ref. Jap; eng]

• **Summary:** These bacteria belong to the family Lactobacillaceae.

3278. Sato, Masashi; Yasuhira, Hitomi. 1988. Kôn jukusei miso ni tsuite [Studies on miso fermented at high temperature]. *Shinshu Miso Kenkyusho Kenkyu Hokoku*

(*Report of the Shinshu-Miso Research Inst.*) No. 29. p. 20-24. [2 ref. Jap; eng]

• **Summary:** Miso containing 50% koji and 0-6% NaCl was fermented at 47, 50 and 53°C and evaluated for pH, microbial flora, acidity, color, sugar concentrate, free amino acid levels, etc. Higher temperature favoured acidity development due to bacterial action. Color of miso fermented for 3 days at 50°C was equivalent to that of miso fermented at 30°C for 30 days, but free amino acid concentrate in the former was lower than that in the latter. Fermenting 3% NaCl miso at 50°C for 3-5 days, followed by 30°C for 10-12 days, produced an acceptable miso.

3279. Sode, Akio; Nakamura, M.; Takeda, S.; Ito, K.; Imai, M.; Yasuhira, H. 1988. Kôji no kôso kassei to miso no hinshitsu [The relationship between koji enzymic activity and miso quality]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 74-76. [Jap; eng]

3280. South River Miso Co. Inc. 1988. A gift from the gods: Lasting health, longevity, happiness (Brochure). South River Farm, Conway, MA 01341. 8 panels.

• **Summary:** "Wood-fired handmade miso since 1979." Describes the company's various miso products. "Since 1979, we have produced close to 500,000 pounds of live, organic miso in our small shop. We are grateful to the many people who, over the years, have supported us, one teaspoonful at a time."

Photos show: (1) Noboru Muramoto (1920-1995). (2) Christian Elwell. (3) The Elwell family: Christian, Gaella, Anni, and Isaiah. (4) Stephen Jannetta scooping steamed grain from the cauldron. (5) The miso shop and the Elwell's house in the winter, decked with snow at evening; white smoke rises from four chimneys. Superb photo-by Will Elwell! (6) Six jars of different types of miso. Note: Talk with Robin Cole of South River Miso Co. 1999. May 17. This brochure was published in 1988. Address: South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

3281. Yokota, Y.; Yasuhira, H. 1988. Miso no kokeibun ryûshi ni tsuite. II. [Studies on solid particles in miso. II.]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 29. p. 42-47. [7 ref. Jap; eng]*

• **Summary:** Effects of solid particle size distribution and level in soybean miso on sensory quality of miso soup were examined. Particles less than 170 mesh sieve size had most influence on soup attributes.

3282. Yokota, Yoshiko; Taguchi, T.; Nakamura, M.; et al. 1988. Shihan miso no bunseki kekka ni tsuite [Analytical results of miso on the market]. *Shinshu Miso Kenkyusho*

Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.) No. 29. p. 48-57. [3 ref. Jap; eng]

• **Summary:** The 25th study meeting of miso on the market was held. 189 miso samples of various types sold at retail stores were evaluated for sensory quality; 120 of these were analyzed for physicochemical characteristics. Total sugar concentration averaged 17.5%. Rate of protein hydrolysis was related to NaCl and sugar concentration, and affected miso texture. Moisture, nitrogen, pH, acidity and color were also examined.

3283. Layton, Lyndsey. 1988. County's health food industry is still strong... despite some producer setbacks. *Recorder (Greenfield, Massachusetts)*. April 29.

• **Summary:** Tempeh Works attempts to borrow \$500,000 for future expansion of the company's plant. The tempeh company is just pulling out of a three-year slump period of heavy losses to enjoy a 40% annual growth rate. It would like to double the size of its Fairview Street plant from 6,000 square feet to 12,000 square feet. But the company's recent shaky past, combined with the Tomsun/Country Dairy experiences, have made it tough to win confidence from lenders. Tomsun will stay in operation despite the fact the 11-year-old company filed for protection earlier this month under Chapter 11 of the U.S. bankruptcy code. Last week, Tomsun secured a \$150,000 loan from the Springfield based Bank of Western Massachusetts to pay some of its debts and keep the operation going. Tomsun executives blame the company's troubles on recent challenges in its northeast tofu market by two tofu makers from outside the region. Currently, Tomsun has 50% of that market.

Tofu has become a commodity where the person who can turn out large amounts can sell it the cheapest. In 1982, Tomsun was the 3rd largest tofu maker in the nation; it has now dropped to 4th place. South River Miso Co. produces about 300,000 lb of miso each year in 5 to 8 different varieties. Annual sales hover around \$40,000. Tempeh Works has only one serious national competitor that is based in Boulder, Colorado.

3284. **Product Name:** International Mustard Oriental Miso [Mellow].

Manufacturer's Name: Edward & Sons Trading Co. (Importer). Made in Japan.

Manufacturer's Address: 1115 Lousons Rd., P.O. Box 3150, Union, NJ 07083. Phone: 201-964-8176.

Date of Introduction: 1988. April.

Ingredients: Stoneground mustard seeds, vinegar, organic mellow barley miso (organic soybeans, organic barley, water and sea salt), natural herbs, spices and sea salt.

Wt/Vol., Packaging, Price: 8 oz jar.

How Stored: Shelf stable.

New Product-Documentation: Label. 1988. 2.75 by 2.5 inches. Wider at bottom than top. One label on front and

one on back. Parchment and black on red. On back: "Oriental Miso Mustard. Mellow, rich, and full-bodied, this delicious condiment derives its savory magic from exclusive Oriental ingredients. It brings your foods a zesty flair, while it enhances even delicate flavors. Powerful yet subtle. An Oriental art." Note: This product is closely related to Naturally Preferred Miso Mustard, formerly made by American Natural Foods, launched Sept. 1984. *Soya Newsletter*. 1988. March/April. p. 8. May/June. p. 8. This spicy mustard containing miso is one of three flavored mustards that they sell.

3285. Product Name: Organic Rice Miso, and Organic Brown Rice Miso.

Manufacturer's Name: Junsei Yamazaki.

Manufacturer's Address: Route 1, Box 1333, Orland, CA 95963. Phone: 916-865-5979.

Date of Introduction: 1988. April.

Ingredients: Brown rice: Organically grown soybeans, organic brown rice, well water, sea salt.

Wt/Vol., Packaging, Price: Bulk. 15 lb costs \$72.00 incl. shipping.

How Stored: Shelf stable.

New Product–Documentation: Yamazaki. 1987. *The Junsei Yamazaki Miso and Umeboshi Story*. 6 p. Talk with Kazuko Yamazaki. 2001. April 20. Miso pioneer Junsei Yamazaki, her husband, died last year. She is still selling the miso he made but not making any new miso. The company name is now Yamazaki Miso Co. The county changed the address to: 4192 County Road S., Orland, CA 95963. She sells the miso through Gold Mine Natural Foods in California and the Grain and Sakt Society (distributor).

3286. Nikkuni, Sayuki; Okada, N.; Itoh, H. 1988. Effect of soybean cooking temperature on the texture and protein digestibility of miso. *J. of Food Science* 53(2):445-49. March/April. [28 ref. Eng]
Address: National Food Research Inst., Ministry of Agriculture, Forestry & Fisheries, Tsukuba, Ibaraki 305, Japan.

3287. Pecjak, Marinka. 1988. *Soja v kulinariki [Soybeans in the kitchen]*. Ljubljana, Yugoslavia: Feniks. 138 p. Illust. Plus 16 pages of color plates showing recipes. 21 x 30 cm. [Slv]

• **Summary:** Features 300 recipes that use soybeans and soyfoods. Contents: Introduction: In the beginning there was the soybean, almost anything can be made from soya (a diagram shows many food and non-food products), soya is concentrated, soybeans in cuisine, how to use these recipes. Whole soybeans (p. 17): Recipes for coffee, different kinds of spreads, salads, soups, green soybeans with rice, dips with whole soybeans, soybeans with mushrooms, patties,

soybean roast, sausages made of whole soybeans, stuffed duck, stuffed trout.

Soybean flakes and textured proteins (p. 40): Spread, party balls, filled bread, soups, pancakes, Australian pie, Buckwheat with flakes, flakes in mushroomy sauce, baked potatoes, stuffed cabbage leaves, chilled stuffed tomatoes, stuffed roasted peppers, stuffed eggplant.

Soy milk and dairylike products (p. 74): Various spreads, soups and salads with herbs, pancakes, baked potatoes, baked noodles, soy pudding, soy milk ice cream, avocado milk. Soy flour and semolina (p. 111): Soy noodles, pasta, pancakes, fish balls, soy bread.

Soy sprouts (p. 122): Soups, salads, sprouts with potatoes, chicken with sprouts and wine, pork with sprouts. Soy sauce and other forms of fermented soybeans (p. 128): Chart showing fermented soy products (incl. miso, tempeh, sufu, natto), salads, soups, chicken with sprouts and soy sauce, meat with fermented black soybeans, roast cutlets, Hoisin dip.

3288. Shurtleff, William; Aoyagi, Akiko. comps. 1988. *Bibliography of miso and soybean chiang, from 5th century B.C. to 1988: With 1250+ references*. Lafayette, California: Soyfoods Center. 118 p. Subject and country index. Partially annotated. Printed April. 28 cm. [1254 ref]
• **Summary:** The most comprehensive bibliography on the subject. Contains all known commercial products. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3289. Wollner, Joel. 1988. Soy-based cheeses—Concerns for the consumer. Can a traditional product be patented. *Soya Newsletter (Bar Harbor, Maine)*. March/April. p. 2.

• **Summary:** In this letter to the editor, the writer is concerned about two issues raised in the article titled "Soy Cheese Market" (*Soya Newsletter*, Jan/Feb. 1988). He wonders to what extent the present success of soy cheese in the natural foods marketplace is based on consumers' lack of awareness that casein is a dairy product. His own informal survey, conducted shortly after *Soya Kaas* was first introduced and already finding widespread acceptance, found very few consumers who knew that casein is derived from milk. "In fact, over 90% thought *Soya Kaas* was strictly vegetarian, containing no milk-derived ingredients."

He is also shocked that Simply Natural has patented a product (named *Soyalite*) made by fermenting fresh tofu in miso and discovered by accident. This process "is well known and practiced by thousands of people all over the United States, and has been since the late 1970's. I first learned of 'miso-pickled tofu' (as we called it) in 1978, while manager at Erewhon Natural Foods retail store in Boston [Massachusetts]. One of our employees had learned the process while studying with Noburo Muramoto, a teacher of Oriental food-crafting in Escondido, California.

Her miso-pickled tofu was a big hit among the Erewhon staff, and we began selling it ready-to-eat in the store and published the recipe in our weekly consumer newsletter. Soon after, miso-pickled tofu became a favorite dish among Boston's diverse natural foods community, and found a place in the menus of local natural foods restaurants." Address: Director, Mitoku USA Inc., New York.

3290. Pirello, Christina Hayes. 1988. Brief history of Simply Natural, Inc. (Interview). *SoyaScan Notes*. May 11 and June 6. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In December 1984 Robert Pirello started Simply Natural, a natural foods vegetarian catering company. In 1984 Christina had sold her design company in Florida and moved to Philadelphia, where she worked as a freelance designer. Her mother had died recently and she had been diagnosed as having cancer. She was a vegetarian when she met Robert, a macro, who introduced her to the macrobiotic diet. Christina joined Robert's company while recovering from cancer. She left the advertising field completely to concentrate on getting well and running Simply Natural.

One of the catering company's first products was tofu cheese, made by wrapping a firm cake of tofu in cheesecloth, embedding it in sweet white miso, and allowing it to ferment at a controlled temperature for several days. This product was made using the traditional Japanese process for *Tofu no Misozuké* (Tofu Pickled in Miso), which they learned from *The Book of Tofu* (page 110) by Shurtleff and Aoyagi. These firm little bricks, served as a cheese with crackers, became their showcase item. (Note: A similar product, called Tofurin, had been developed by Nov. 1983 by Manna in the Netherlands). But they also made many other tofu dishes such as various types of stuffed agé (tofu pouches), tofu dips, quiches, stuffed loaves, pates. You name it, they did it. They purchased their tofu from a company named Fresh Tofu in Easton, Pennsylvania.

In December 1984 a group for whom they were planning to cater a Christmas party requested a non-dairy cream cheese dip. Robert tried pureeing their tofu cheese in a blender and discovered a revolutionary new product—A non-dairy tofu-based cream cheese. To this they could add flavors, such as garlic powder, onions & chives, or herbs. This soft tofu cheese, served as a non-dairy party dip, became their second showcase product. In the spring of 1985, Cynthia Schwartz, a friend who owned Center Foods, a leading natural/health food store in Philadelphia, asked if she could try to sell their soft tofu cheese. Bearing the label Simply Natural Soft Tofu Cheese, their first commercial product sold very well. Soon they were selling it in several stores, delivering it out of the back of the car. Within 4 months, they had distributors in Pennsylvania competing with one another to sell the product. Finally in October

1985 they signed an 6-months exclusive distribution agreement with Jerry Schwartz and Earthy Organics, a Delaware Valley natural foods distributor. Sales grew rapidly and by year's end other major East Coast distributors were clamoring for the product. Jerry kindly let go of his exclusive and Soft Tofu Cheese was soon being carried by Cornucopia (Rhode Island, from Dec. 1985), Stow Mills (Vermont, Dec. 1985), and Tree of Life (Florida, Jan. 1986). In January 1986 Jerry Schwartz introduced them to their first West Coast Broker, Roberta Fleischer, of California. Distribution began there in March. Now sales began to skyrocket. Robert and Christina soon realized that they were in the wrong business. In May 1986 they dropped the catering business and transformed it into a tofu product development and marketing company. But problems also began to grow. As the warm weather of spring came, the Soft Tofu Cheese, made by people with a limited knowledge of microbiology and plant sanitation and now sold throughout the East Coast, began to spoil. Sales plummeted. By hiring food specialists took and obtaining help from Dr. H.L. Wang of the USDA Northern Regional Research Center at Peoria, Illinois, they were able, largely by trial and error to finally get the problem under control.

In August 1986 they moved from their plant in Philadelphia into a larger facility in Norma, New Jersey. The plant's owner, Bill Schroeder, wanted to buy into their company. So they incorporated, he let them use the plant rent free, and he invested a little capital, which they used the funds to pay off past debts incurred because of the spoilage problems. The next challenge was to develop and manufacture a line of second-generation tofu products using their Soft Tofu Cheese. Continuing to buy their tofu from Fresh Tofu, they launched Antonio's Simply Natural Tofu Pasta (Oct. 1986, fresh pasta products stuffed with their Soft Tofu Cheese) and a line of Creamy Miso Dressings (Dec. 1986, made with the sweet white miso in which the tofu had been ripened). In October 1986 they started advertising the new line in *Vegetarian Times*. In October 1987 they were granted a patent on the process for their Soft Tofu Cheese, and in April 1988 a second patent on the end product. Also in October they repositioned and repackaged their product line to cross over into mainstream markets. Soft Tofu Cheese was renamed Soft Soyalite and Antonio's Pasta was renamed Pasta Lite. Christina and Robert were married on 31 December 1987.

In mid-1988 Nasoya Foods in Leominster, Massachusetts, began tests on making and pasteurizing Simply Natural's Soft Soyalite. In early 1987 they had discussed the possibility of a merger with Nasoya, but they were not as interested in this as Nasoya was, in part because Nasoya could not solve key pasteurization and product flow problems. They are now negotiating their first real outside financing with Leo Blank, who would like to buy Bill Schroeder's stock, and give them substantial capital. They

will soon be closing their plant in Norma, New Jersey. Christina and Robert will be out of manufacturing, able to focus their full attention on marketing and product development. Their pasta products are now made at Mays Landing, south New Jersey and their miso dressings by Alpha-Pak in San Pedro, California (using both Cold Mountain Miso and miso recycled from the Soyalite). The future looks very bright.

Richard Rose. 1988. May 13. Adds: He was told by Wally Rogers and Tim Huang that in the late 1970s The Soy Plant in Ann Arbor, Michigan, developed a "Tofu Cream Cheese," similar to Simply Natural's original firm Tofu Cheese (unblended, in a block) and sold it in their deli. A guy from West Virginia showed them how to make it. Christina confirms this: A tall, thin bearded man [not Steve Fiering] tasted their Soyalite at Anaheim in April 1988. He said that he or someone he knew had sold a similar product in a firm brick form. But he was never able to develop a good flavor and the product never sold well [See 1988 interview with Steve Fiering]. July 28 update: Nasoya appears to have solved the pasteurization and hot-pack problem. Christina enjoys working with Nasoya, a company with very similar principles and beliefs about food.

Update: 1998 Sept. 20. Christina Pirello now has a cooking and food show on PBS-TV. Her latest book is titled "Cooking the Whole Foods Way." Address: P.O. Box 295 (Evelyn & Gershel Aves.), Norma, New Jersey 08347. Phone: 609-691-5866.

3291. Belleme, John. 1988. The great Japanese foods face-off: Are natural brands a better buy? *East West*. May. p. 26, 28-35.

• **Summary:** Contents: Introduction. Shiitake mushrooms. Wakame (sea vegetable). Udon. Toasted sesame oil. Complex fermented foods: Rice miso, rice vinegar. Sea salt. The Oriental foods industry in the USA dwarfs the Japanese natural foods industry. Annual sales of JFC International Inc. [affiliate of Kikkoman] alone, about \$180 million, is about ten times that of the entire Japanese natural foods industry in the United States. Oriental foods sell for about half the price of natural foods. Mitoku's special quality miso is made by Takamichi Onozaki of Yaita, Japan. Eden Foods' miso is made by Toshi Shiroozu of Fukuoka, Japan. Also discusses rice vinegar quality.

Note: This article is a thinly disguised advertorial for Mitoku products.

3292. Bruce, Gene. 1988. The myth of vegetarian vitamin B-12. *East West*. May. p. 44-55. Summarized by Judy Brown in *Soya Newsletter*. 1988. May/June. p. 7. [4 ref]

• **Summary:** Although the requirement for B-12 is the lowest of all vitamins and the body can store a supply to last many years, alarming deficiencies of vitamin B-12 have been found in vegetarian children leading to serious

physical and mental retardation, and neurological damage. The effects begin with numbness and tingling of the hands and feet. Although numerous studies have shown fermented foods made in traditional societies to have significant B-12, when these foods are made under sanitary conditions in industrialized countries, the B-12 is generally lost. Recent studies suggest the presence of a false B-12 or B-12 analogue that some laboratory tests (such as the microbiological assay using *Lactobacillus leichmanii*) have mistaken for the real thing. Bonny Specker, PhD at the Univ. of Cincinnati, Ohio, and J. Gorstin at Vanderbilt Univ. in Nashville, Tennessee have studied B-12 levels in tempeh, miso, and tamari. Only negligible to trace amounts were found. Significant amounts were found in sea vegetables and spirulina. Specker analyzed blood serum and urine samples of 169 macrobiotic adults and children. Very low levels of B-12 were found. At the Agricultural Univ. of Wageningen in the Netherlands, Peter Dagnelie was undertaking a similar project, checking the blood of 50 macrobiotic children. He found deficiencies of vitamins B-12, D, and B-2, plus protein, calcium, iron and calories.

U.S. tempeh makers, when asked to recheck their tempeh, found that it presently contained no B-12. Most are taking claims about vitamin B-12 off their labels after conducting their own tests and obtaining similar results. According to Dr. Keith Steinkraus, the most probable explanation for the loss of B-12 in U.S. tempeh is improved sanitation and the fact that the B-12 producing bacterium cannot compete with the abundant mold in properly inoculated tempeh.

Good non-flesh sources of B-12 are milk (whole or nonfat, 0.9 micrograms/8 oz), cheese (0.9 micrograms/3 oz), and egg (0.6 micrograms/large egg). In conclusion, lacto-ovo vegetarians are probably getting enough B-12. Strict vegetarians (vegans) are advised to take a B-12 supplement. Without further research concerning B-12-analogues in sea vegetables and microalgae, there are no reliable vegetable sources of B-12. Address: Boston, Massachusetts.

3293. Cutler, Blayne. 1988. Move over, miso. *American Demographics* 10(5):56. May. *

• **Summary:** The youth market and food consumption in Japan.

3294. **Product Name:** Mindi's Miso Salad Dressing.

Manufacturer's Name: Natural Pacific.

Manufacturer's Address: P.O. Box 4352, Hilo, Island of Hawaii, HI 96720. Phone: 808-935-3220.

Date of Introduction: 1988. May.

Ingredients: Soybean oil, water, brown rice miso (soybeans, brown rice, water), rice vinegar, onion, sesame seeds, sesame oil, garlic powder, honey, herbs & spices.

Wt/Vol., Packaging, Price: ½ pint (8 oz), pint, and half gallon.

How Stored: Refrigerated.

New Product–Documentation: Talk with Ty Katibah. 1989. Nov. 22. This product was launched in April or May of 1988. It is doing pretty well. Some is sold at The Real Food Company in San Francisco. Label. 1989, Dec. Received. 2.5 by 2.75 inches. Rounded top. Self adhesive. Red and blue on white. Illustration of sun over mountains. “Free from preservatives and artificial additives.” Address is now P.O. Box 11001, Hilo, Hawai’i 96721. Phone 808-935-3220. Note says they began producing in Oct. 1988.

3295. Ontario Soya-bean Growers’ Marketing Board. 1988. Report on export market development mission of the Ontario soybean industry, March 19th–April 3rd, 1988. Chatham, Ontario, Canada. 23 p. May. 28 cm. Spiral bound. [Eng]

• **Summary:** This report was prepared by Owen Dobbyn, John Cunningham, Maurice Waddick, and Fred Brandenburg of OSGMB. Contents: Japan. The Japanese soybean market. Visits: Japan Miso Co-operative Industrial Assoc. (M. Iida, chairman), Japan Packaged Tofu Assoc. (H. Kijima, Exec. Secy.), Federation of Japan Natto Manufacturers Cooperative Society (Mr. Ohse), Takano Foods Co. Ltd. (E. Takano, president, uses 7,000 to 8,000 tonnes of soybeans annually to make natto), Home Foods Co. Ltd (Home Shokuhin, Y. Murai, managing director, has 160 employees and 3 tofu factories that use 300 tonnes of soybeans/month; owned by Wako Shokuryo, the #1 wholesaler of soybeans in Japan), Japan Oilseed Processors Assoc. (JOPA; H. Higashimori, managing director). Japan Oil and Fat Importers & Exporters Assoc. (JOFIEA; I. Shimizu, exec. director), Canadian Embassy, Tokyo.

Hong Kong. Soybean imports. Visits: The Hong Kong Soya-Bean Products Co. Ltd. (makers of Vitasoy soymilk), Amoy Industries (International) Ltd.

Malaysia. Soybean imports 1984, 1985, 1986. Visits: Ace Canning (owned by Lam Soon). Yeo Hiap Seng (Malaysia) Berhad (soymilk), Cheong Chuan (Hup Kee) Sdn. Bhd. (traditional fermented soysauce), Sin Yong Huat Enterprises Sdn. Bhd. (soybean importers), Syarikat Perniagaan Cheon Fatt (tofu manufacturer).

Singapore. Soybean imports (1983–1986). Visits: Sin Seng Lee Trading Co. (Pte.) Ltd. (claims to import 60% of soybeans to Singapore). Conclusions for each country. Recommendations for future action. Future export development missions. Accomplishments. Competition.

In Japan, 842,000 tonnes soybeans are used to make foods, as follows (in tonnes, p. 1): Tofu 456,000, miso 180,000, natto 90,000, dried-frozen tofu 30,000, boiled soybeans 23,000, soybean powder 10,000, soymilk, 7,000, soysauce 5,000, other 41,000. The suppliers of these edible soybeans are (in tonnes): USA 400,000, China 280,000, Japanese domestic 280,000, Canada 24,000. Total Japanese soybean imports: 5,000,000 tonnes. Of this 4,036,000

tonnes (81%) are used for crushing, 842,000 tonnes for food, and 70,000 tonnes for feed (not crushed). The Japanese market for soybeans is very large for both crushing and food use, but is not growing. The beans for crushing come mostly from the USA and South America.

Preferred characteristics of soybeans for each type of soyfood are given. For example, for miso: Low oil, high protein, high sugar, white hilum. For tofu: High sugars (glucose, sucrose), moisture content 10–12.5%, new crop preferred to old, protein 40%, oil 19–20%, hilum color is not very important but white is preferred, varietal consistency; preferred varieties are Beeson, Amsoy, Corsoy. Natto: Most important is small size, 5.5 mm or less, clean beans free of foreign material, high sugar content (saccharose, stachyose, which bacillus needs to work), less oil, must absorb water well. Soymilk: Good flavor, low moisture (10%), low percentage of splits (too high can cause rancidity), low oil, high protein.

In Japan, vegetable oil consumption has increased 2.5 times in the past 20 years to 45.17 gm/capita/day in 1986. Soyoil and canola oil together account for 85% of production. Canola is replacing soybean oil. If the oil market is strong, the 30 Japanese crushers crush more canola, but if protein is strong they crush more soybeans. U.S. soybeans have too much foreign material; new contracts have a penalty for > 2% FM.

In Hong Kong, 6,000,000 cases of Vitasoy brand soymilk are produced annually. The company uses 2,500 tonnes/year of soybeans, 80% of which are grown in Canada. It uses 100 to 200 tonnes of organic soybeans for Vitasoy exported to U.S. health food stores. Using 15 Tetra Pak machines, production takes place 24 hours/day (3 shifts), 6 days a week. Contacts: Patrick Cheung (marketing manager), and Raymond Yuen (commercial manager).

Amoy Industries, the largest maker of soy sauce in this part of the world, produces 6,000 tonnes/year. The company was established 80 years ago in Amoy, eastern China, moved to Hong Kong in 1949; 50% was purchased by Pillsbury in 1983. Uses 2 containers of soybeans/week, 100% from Ontario for the past 5 years.

Malaysia soybean imports rose from 174,400 tonnes in 1984 to 255,200 tonnes in 1986. The main suppliers in 1986 were China (56.2% of total), Vietnam (15.8%), and Argentina (14.3%). Ace Canning uses ton tonnes/month of soybeans (presently all from China) to make soymilk. They have 7 Tetra Pak machines. Yeo Hiap Seng (Malaysia) is the largest soymilk producer in Malaysia, making 25,000 liters/year using 9 Tetra Pak machines. They use 1,250 tonnes of soybeans (80 containers) per year, all Canadian.

In Singapore, soybean imports rose from 28,287 tonnes in 1983 to 41,571 tonnes in 1986. In 1986, some 66% came from Canada, 16.6% from China, and the rest from others.

The major competition for food quality soybeans in these four countries at present comes from China. The

Chinese have improved their soybean quality and appear to be actively seeking to increase their market share. In the long run, however, China may choose to reduce its soybean exports in order to increase meat consumption in China. This could lead to new market opportunities for Canada in these four countries. Address: P.O. Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

3296. Wood, Rebecca T. 1988. Miso—The super food. *Health Foods Business*. May. p. 91.

• **Summary:** A brief introduction, with a recipe for Watercress miso soup.

3297. Maeda, Toshiie. 1988. Mura okoshi—Tenpe sonjuku [Revitalizing a village—the tempeh village school. I.]. *Toyo Shinpo (Soyfoods News)*. June 1. [Jap; eng+]

• **Summary:** The author, a representative of the school, wrote a book titled *Homeland of Miso (Miso no Furusato)*. He discussed the fact that the use of miso mainly in miso soup presents a big problem. The first solution to the problem is to use miso in thick ketchup-like sauces. The second is to return to the non-salted fermented foods such as Japanese natto, Nepalese kinema, Indonesian tempeh, and Chinese soy nuggets (shi), which are the ancestors of miso. He emphasized tempeh, which he feels is a wonderful food that can be used in various ways, and is nutritious and healthy. He explained that tempeh is becoming popular in the USA and Europe, and concluded that tempeh alone can be used to start a food industry.

“Because of this book, I received a visit from 2 people from the “Vitalizing Village Committee” of Kasuga-cho, Hyogo-gun, Hyogo-ken. They asked me to give a lecture on tempeh, for they wanted to consider whether tempeh could be used to help vitalize the village. I accepted the offer, but realized I needed more information on the subject. So I contacted Murata sensei, professor emeritus at Osaka Shiritsu Daigaku, who played a key role in organizing the first international Asian Symposium on Non-Salted Soybean Fermentation in Japan. She and others at the university sent me an encouraging letter, four articles on tempeh, and information on tempeh cookery from the university.

“In late August 1987 I used these material to give a 40 minute lecture on tempeh followed by 20 minutes of questions. It was decided to have a follow-up meeting for tempeh tasting. Through Dr. Murata’s introduction I received 2 kg of free tempeh from a maker in Aichi-ken. The sampling was a big success and was written up in the newspaper in a big way. The local Hyogo prefecture high school food processing department started to experiment with tempeh, and a women’s group, the Kasuga-cho Commerce and Industry Group, began to experiment with tempeh cookery. At the end of Sept. 1987 on of the teachers at the high school succeeded in making tempeh, which made the news. Then they started to make second

generation tempeh products, such as confections and breads. At their local school festival in October 1987 he presented the products and gained a good reputation.”

3298. Belleme, John. 1988. Tamari: Reborn in the U.S.A. [San-J International begins production in America]. *East West*. June. p. 14, 16-18.

• **Summary:** In 1804, almost half a century before Commodore Perry’s ships forced open Japan’s ports to American trade, the Sato family’s fleet of small boats began ferrying their homemade tamari and other goods up the Kiso, Ibi, and Nagara Rivers. From the port city of Kuwana in the Bay of Ise on the Pacific Coast, the Satos received goods from larger ships and delivered them to communities upriver. Takayoshi Sato is currently the president of San-J International, the remnant company, almost eighty years since the Satos closed their maritime business. Faced with the loss of livelihood, the Satos turned to making tamari and soybean miso on a large scale in 1909.

With the dollar at an all-time low against the Japanese yen, and 100% of all natural shoyu and tamari sold in the U.S. being imported from Japan, the opening of the San-J International tamari plant could not be more timely. American importers of Japanese foods have seen a 50% increase in the price of shoyu and tamari in the past eighteen months. There are just a few companies in Japan still making genuine tamari. San-Jirushi at Kuwana is the largest, producing roughly half of the country’s annual production of 6,000 kiloliters (1,500,000 gallons).

William Shurtleff first proposed exporting San-J tamari to the U.S. in 1977. Shurtleff gave a sample of San-J tamari to the president of Mitoku, which supplied Erewhon with Japanese foods. Shortly thereafter, Erewhon began importing San-J tamari in five gallon tins. Next John McLaughlin, a Richmond businessman, tasted San-J tamari and was impressed enough to go to Japan and talk to the Sato brothers. The meeting led to the founding of San-J International in December 1978, a Japanese-American joint venture to market San-J tamari and eventually build the Richmond plant.

Today, industrial giants such as Stouffer’s and Campbell’s use San-J tamari exclusively in all their frozen food lines. San-J makes the point in their ads: “One teaspoon of tamari—which contains just a pinch of salt—is the seasoning equivalent of a full tablespoon of salt. Tamari seasons with protein, not sodium.” In the manufacture of tamari, the mixture of koji and brine, called moromi, is left to ferment for about six months. Tamari is pasteurized (2% ethyl alcohol is added to prevent the growth of yeasts and molds). The Richmond plant can make about 1 million gallons of tamari and tamari shoyu (tamari with 20% wheat added) a year, about two times the current annual sales of the imported product.

The Richmond process will differ from that used to make tamari in Kuwana. First, in Japan, San-J tamari is aged for at least 12 months at room temperature. In Richmond, fermentation is accelerated to approximately 6 months by heating the fermentation vats with electric coils. Second, the San-J tamari from Japan is aged in old cedar vats while the Richmond plant is using fiberglass vats lined with epoxy resin. Every major importer of natural Japanese foods has expressed interest in bottling San-J tamari in their private label. However, only Eden Foods Clinton, Michigan, has negotiated a contract with San-J.

3299. Cooper, Jack. 1988. Miso: The mother's touch. *Palate Pleasers of Japan (Los Angeles, Calif.)* 6:31-37. June.

• **Summary:** The "mountain made" miso commercial turned a small, local miso manufacturer in the Japan Alps, Miyasaka Jozo Co., Ltd., into the second largest miso producer in all of Japan. To Japanese everywhere, the "chop, chop, chop" sounds of mom dicing tofu and scallions in the kitchen, mixed with the savory, pungent fragrance of hot miso broth and the clean, sweet smell of steaming rice are as much a symbol of the dawning of the day as the aroma of fresh coffee and the sizzling sounds of bacon and eggs are to Americans. William Shurtleff and Akiko Aoyagi explain [the bewildering 'vintages' of miso] in their massive volume, *The Book of Miso*. All traditional miso contains salt and soybeans to which a mold culture, or "friendly agent," usually *Aspergillus oryzae*, has been added.

A 1965 study conducted by Dr. Takeshi Hirayama at Japan's prestigious National Cancer Center, people who eat miso soup daily are 32% less likely to develop cancer than those who never eat miso soup. Undiluted, miso contains on average about 12% salt, six times the salt content of cheddar cheese. Most miso sold in America is imported and sold under Japanese brand names like Maruman, Marukome, Shinshu-ichi, Yamabuki, Hanamaruki, etc. One reason for this may be Japan's stringent new laws requiring producers to list all ingredients and additives (mainly MSG, artificial coloring and preservatives), making the natural products more attractive to America's health-conscious consumers.

The Japanese National Miso Association estimates that there are over 2500 miso manufacturers in Japan, many of which are small, family-owned operations. Color photos show: (1) Miko-chan, the little kneeling girl who is the Miyazaka Jozo logo. (2) Three types and colors of miso in white bowls, next to an iris. (3) The historic old Shinshu Ichi miso and shoyu plant. (4) A bowl of white miso soup with crab and tofu. (5) An assortment of traditional miso dishes. (6) The ultra-modern computerized control panel, motorized conveyors, and the modern packaging facility at the Miyazaka Jozo factory (3 small photos). (7) A shop in Japan retailing Japanese miso in traditional small wooden kegs. (8) Five views of the South River Miso Co., Conway, Massachusetts (including an exterior view of the home and

miso shop, Christian Elwell at work in the temperature-controlled koji room).

Note: According to *The Book of Miso*, by Shurtleff & Aoyagi (1976, p. 257; based on 1974 statistics) *Mayasaka Jozo (Shinshu Ichi)* is Japan's largest miso factory. The company's Tokyo factory produces about 15,000 tons/year; the Nagano and Yamanashi plants produce 9,300 tons and 3,300 tons respectively. All make Shinshu-type light-yellow miso. As of 1983, the Tokyo factory also made freeze-dried miso. Address: Editor, Palate Pleasers.

3300. Fujinuma, Kenji; Saito, K.; Nakazato, M.; Kikuchi, Y.; Ibe, A.; Nishima, T. 1988. Shokuhin-chû no gurichirurichin-san no bunseki-hô [Determination of glycyrrhizic acid in foods]. *Shokuhin Eiseigaku Zasshi (J. of the Food Hygienic Society of Japan)* 29(3):210-15. [9 ref. Jap; eng]

• **Summary:** High performance liquid chromatography was used to determine the glycyrrhizic acid (GA) content of Japanese soy sauce and miso. In a survey of commercial foods, GA was detected at levels of 2 to 224 micrograms/gm in 16 out of 56 samples.

Glycyrrhizin is $C_{42}H_{62}O_{16}$. Glucoside contained in *Glycyrrhiza glabra* L. at the level of 6-14%, with strong sweetness, which is hydrolyzed with acid into glucuronic acid and glycyrrhetic acid ($C_{30}H_{46}O_4$). Address: Tokyo Metropolitan Research Lab. of Public Health, 3-24-1 Hyakunin-cho, Shinjuku-ku, Osaka, Japan.

3301. **Product Name:** [Hanamaruki Miso with Added Bonito Flakes and Dashi].

Foreign Name: Hanamaruki Katsuo-Tenka Miso.

Manufacturer's Name: Hanamaruki Foods (America) Inc.

Manufacturer's Address: 390 Fifth Ave., Suite 900, New York, NY 10018.

Date of Introduction: 1988. June

Ingredients: Incl. miso, bonito flakes.

Wt/Vol., Packaging, Price: 1 kg plastic tub.

How Stored: Shelf stable.

New Product-Documentation: Ad in Palate Pleasers.

1988. Vol 6. June. p. 33. "Miso. A Health Secret to Savor."

3302. Kingma, Sharyn. 1988. New study released on consumer attitudes about soy proteins. *Soya Newsletter (Bar Harbor, Maine)*. May/June. p. 3, 14-15.

• **Summary:** Protein Technologies International, a subsidiary of Ralston Purina, St. Louis, Missouri, has recently released the results of a new study which evaluates current consumer attitudes related to soy protein, nutrition, dietary habits, and knowledge of dietary fiber. The 1988 Consumer Attitudes Monitor was undertaken to determine if there had been any significant changes in consumer attitudes since their first study was done in 1985.

One of the major differences between the earlier study (see Ralston Purina 1985 and Elliott 1988) and the current one is that the 1985 study contained specific questions related to soyfoods. But the 1988 survey also probed some interesting areas. For details, see the study itself.

Copies of the 1988 Consumer Attitudes Monitor are available through Jean Kuster, Protein Technologies International, Checkerboard Square, St. Louis, Missouri, 63164 or call 800-325-7108.

3303. **Product Name:** [Maruman Miso].

Foreign Name: Maruman Miso.

Manufacturer's Name: Maruman Jozo Co. Ltd.

(Importer). Made in Japan.

Manufacturer's Address: USA

Date of Introduction: 1988. June

Wt/Vol., Packaging, Price: Tubs and plastic bags.

How Stored: Shelf stable.

New Product–Documentation: Ad in *Palate Pleasers*.

1988. Vol 6. June. p. 33. "Natural Goodness. Miso." The product is distributed in the USA by Oriental Trading Co., South San Francisco, CA 94080; Daiei Trading Co., Inc., Woodside, New York; and Crown Trading Co. Ltd., Kobe, Hyogo prefecture 651, Japan.

3304. Nihei, Takao. 1988. [The history of shoyu in Hawaii. (Food series, part XII)]. *Kokiku (Honolulu, Hawaii)*. June. p. 32. [Jap; Eng]

• **Summary:** "Yo o sutete yama ni iru tomo miso, shoyu, sake no kayoiji nakute kanawaji." "Forsaking all worldly things, still, one can't do without these: Miso, shoyu, and sake." As in the ancient waka poem written by Shokusanjin (during the Edo period), no matter where the Japanese went, miso and shoyu were necessities of life. Hawaii's first miso and shoyu were recorded in Meiji Gannen (1868), the year of the first Japanese immigrants' arrival. Ikuma Yonekichi, who came on the ship "Scioto" (Saioto-go), noted in his diary, "Yokohama departure. Provisions of rice, miso, shoyu."

In 1887, as the Japanese immigrant population increased, Japanese goods began to be imported, but there were many instances where miso and shoyu were insufficient. In Hawaii, shoyu was manufactured earlier than sake by Shimada Jihachi in 1891, but he gave it up due to financial difficulties. Later, Yamagami Nobuyuki, who came from San Francisco, California, started a shoyu factory which prospered. With the advent of World War II, imported goods from Japan were cut off, which gave rise to the start of miso and shoyu companies here. Barbeque shoyu is Hawaii's own discovery. The locally made miso and shoyu are less salty than the Japanese products.

3305. Peluso, Michael R. 1988. The nutritional value of soy. *Health World (Burlingame, California)* 2(4):26-28. May/

June.

• **Summary:** This introductory article discusses whole soybeans, soy flour, soy protein products (isolates, spun fibers, TVP), soy milk, soy cheese (tofu), tempeh, miso, and soy sauce. Table I shows the composition of most of these is given. The author is especially interested in soy oil as a good source of vitamin E and of the essential fatty acids, linoleic and alpha linolenic acids. He is critical of the hydrogenation process. Table II gives a nutritive comparison of soy oil and selected food fats. Table III gives a nutritive comparison of soy foods and selected animal foods. Address: P.O. Box 606, Occidental, California 95465.

3306. Shurtleff, William; Aoyagi, Akiko. 1988. *Das Tofu-Buch: Herstellung, Verwendung, Ernahrungswert, Rezepte* [The book of tofu: Preparation, uses, nutritional value, recipes]. Munich, West Germany: Goldmann Verlag. 384 p. Illust. by Akiko Aoyagi Shurtleff. Index. 18 cm. [Ger]

• **Summary:** A pocket book edition of the original 1980 German edition of *The Book of Tofu*. Contains 300 recipes. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

3307. Udesky, James. 1988. *The book of soba*. Tokyo and New York: Kodansha International. 166 p. Foreword by William Shurtleff. Illust. Index. 27 cm. [50* ref]

• **Summary:** Contents. Foreword. Introduction. I. Making soba. Homemade soba noodles. Broth. Noodle dishes. Country cooking. Groat cooking. Variations and desserts. Ingredients. II. About soba. Nutrition. Buckwheat: From seed to table. History. III. Appendices. The soba dining experience. Selected soba restaurants in Japan. Oriental, natural, and specialty food stores in the United States and Canada. Bibliography.

Soy-related recipes include: Deep-fried tofu pouches in "Fox Soba" (kitsune soba). White miso in broiled soba dumplings with miso sauce. Soba noodles in miso stew. Cold soba noodles with natto and sesame. Natto in soba pasty. Soy-Soba noodles (with raw whole soybeans). Soy sauce is used in many recipes.

The excellent "Ingredients" section (p. 91-98), gives definitions of several soyfoods, including miso, natto, okara, soy sauce, tofu, and tofu-thin deep-fried (abura-age, usu-age). The definition is especially good: "Natto: This rich soybean product with a cheeselike flavor is still underestimated, unappreciated, and misunderstood, mainly because the sticky 'threads' resulting from its special fermentation process are strong and stubborn, making it pretty tricky for beginners to eat. Natto can be made easily at home with soy beans, 'natto spore' (now available at major health-food dealers on both coasts), a pot, and a box... If allowed to sit too long on store shelves, the beans become overripe. Although you cannot check the quality until you open up the package at home, the best natto should have a

light, tannish color and still be moist and a little puffy. Too dark a color indicates overripening and a correspondingly bitter taste. To remedy this situation somewhat, stir the beans together with chopsticks or a spoon and combine with chopped onions, wasabi horseradish, and soy sauce. Since this food is the result of bacterial action, no preservative can be used. Thus, natto should be eaten as soon as possible.”

Mr. Udesky had a chance to prepare homemade soy sauce while living with Mr. Noboru Muramoto (author of *Healing Ourselves*) from 1971 to 1975.

For a complementary review, see Jean Pearce. 1991. Nov. 10. *Japan Times*.

Letter from James Udesky. 1997. April 21. The hardcover edition of *The Book of Soba* has now sold 12,000 copies in Japan and abroad, and 3,000 copies of a new soft-cover pocketbook edition (246 p.; 18.2 cm) was published by Kodansha International in Dec. 1995. An article on soba titled “The Art of Noodles,” by Udesky appeared in *Japan Quarterly* (April-June 1997, p. 32-42; it contains a large color photo of him rolling out soba dough). Udesky is living in Tokyo, has lived in Japan (except for a 3-month break in 1988) since 1988, married a Japanese woman in 1990, for the last 2 years has worked for a medical equipment importer and taught English part-time at Dentsu Inc. to survive financially, has established a company named Udesky Communications, and continues his practice of making traditional Japanese soba. He has plans for a new book titled “Basic Techniques of Udon Making.” Address: Heim R1 #103, Meguro Honcho 6-18-3, Meguro-ku, Tokyo 152, Japan. Or: The Soba Center, P.O. Box 72, Winnetka, Illinois 60093-0072.

3308. *Toyo Shinpo (Soyfoods News)*. 1988. Okara peesuto de shokupan. Kōso shori de seihin o kaihatsu [The National Vegetable Protein Association is making bread with an okara paste, developed from a specially-treated enzyme]. July 21. p. 3. [Jap; eng+]

• **Summary:** Mr. Ryoji Sekiguchi is president of Zenkoku Shokubutsu Tanpaku Kyodo Kumiai located at Sendagi-2-48-8, Bunkyo-ku, Tokyo, Japan. For the past ten years, the National Vegetable Protein Association has been conducting research with okara and has developed an okara paste made by treating regular okara with a special enzyme. This paste can be used in noodles, mayonnaise, miso, ketchup, croquettes, hamburgers, confectionery, tofu, ice cream, etc. One of the products that can be made from this paste is bread. It has 2% less water than a regular loaf and contains 20% okara paste. It stays fresh for twice as long as a regular loaf of bread. The okara paste has the following characteristics: It has no taste or smell, it is low in calories and has some protein, it has an improved texture over plain okara because of the action of the enzyme, it has vegetable fiber, and it is a health food.

3309. Bubny, Paul. 1988. Venerable soybean sprouts new uses. *Health Foods Business* 34(7):72, 74, 76, 108. July.

• **Summary:** Lonnie Stromnes, national sales manager of White Wave Soyfoods in Boulder, Colorado, reports that White Wave recently “upscaled” the packaging on its tempeh products; the new graphics depict tempeh in use, so that customers do not have to bring a thorough knowledge of the food into the store with them. Mitoku-USA, based in Albany, New York, imports some 20 varieties of miso. At least one manufacturer, the Asheville, North Carolina-based Great Eastern Sun, saw its miso sales increase by 20% last year. Bruce Sturgeon, the company’s vice president, said Great Eastern Sun’s volume on miso alone was \$400,000 in 1987. Shoyu and tamari are frequently aimed at the gourmet market as well as the natural foods / specialty foods market. Owner Dale Kamibayshi of Alfalfa’s Market in Boulder, Colorado said, “I think many people are still intimidated by (soyfood’s) preparation.” To help overcome the intimidation factor, Alfalfa’s has scheduled a soyfood tasting fair for July 16; the first such fair which the store has devoted to soy.

Gary Barat, chairman of Legume, Inc. said, “I see the natural foods and gourmet markets coming together,” said Barat. “And the smart marketers are realizing that.” People who shop specialty stores have both eyes turned toward quality. Soy companies are increasingly making use of organically grown soybeans. There is also a trend toward using specific soybeans for specific products, a sign of a maturing industry. The trend is more prevalent in the U.S. than in Far East Asia. Westbrae, for example, uses Vinton beans for its Westsoy soy beverage. As the currency in Japan remains strong against the dollar, you’re going to see more and more (soy) products produced in America. Also there will be greater growth in so-called “second-generation” soy products—dairy analogs with soymilk, soy cheese, soy ice cream and soy yogurt. Address: Associate Editor.

3310. Fertilis. 1988. Prijlist. 1 Juli 1988. Milieu vriendelijke levensmiddelen [Price list. 1 July 1988. Environmentally friendly foods]. Koolhaaspark, 3864 PW Nijkerkerveen, Netherlands. 49 p. 30 cm. [Dut]

• **Summary:** Contains products from: Dr. Vogel (p. 20). Huegli (mostly bouillon, p. 20). Japanese soy products (shoyu, tamari, may types of miso, nigari, kuzu, wheat gluten, mochi, p. 30-33). Fertilis soy products (p. 34). Yakso (tofu, tempeh, soy sauce, p. 34). Witte Wonder (tofu, seitan, p. 35). Orido (amesake, p. 35). Liza (rice drink, p. 36). Living Foods (soya drink, p. 36). Provamel (9 soy drinks and 6 soy desserts [puddings], p. 36). Jonathan (1 bottled soy drink, p. 36), Lima (shoyu, tamari, soymilk), Eden (no soy, p. 37). Address: Nijkerkerveen, Netherlands. Phone: 03495-72844.

3311. Kotsch, Ronald E. 1988. *Macrobiotics beyond food: A guide to health and well-being*. Tokyo and New York: Japan Publications, Inc. 242 p. Index. 22 cm. [10 ref]

• **Summary:** Contents: Foreword. Introduction. 1. The heart of the macrobiotic artichoke. 2. Edible shampoo, organic undershorts, and other necessities. 3. Feasting with the senses. 4. Secrets of the laughing Buddha. 5. Mind does matter. 6. Life is with others. 7. Twinkle, twinkle little star. 8. Into the arms of the infinite. 9. Illness and healing. Conclusion. Bibliography.

Page 48 states that soybeans are an important part of the “standard Macrobiotic diet.” A Macrobiotic person who wants to reduce or give up smoking might want to “Reduce consumption of pressure-cooked rice, miso, and other contractive or salty foods.” Address: Ph.D., Hingham, Massachusetts.

3312. Nihei, Takao. 1988. [The history of Japanese sake in Hawaii. (Food series, part XIII)]. *Kokiku (Honolulu, Hawaii)*. July. p. 32. [Jap; Eng]

• **Summary:** The first Japanese immigrants who made a mark in Hawaii were the “Gannenmono” who crossed the ocean on the ship “Scioto” (Saioto-go) in 1868. Miso and shoyu had been loaded on that boat, but there is no record of any sake. Later on, due to a shortage of labor in the sugarcane fields, Hawaii’s largest industry, immigrants from Japan were brought in as a result of a contract between the Hawaiian Kingdom and the Japanese Government. On Feb. 8, 1885, the Japanese immigrants arrived in Hawaii on the ship “City of Tokio.” On this trip, Japanese sake had been put on board. Ten barrels of sake were offered as a gift to King Kalakaua. Sake began to be imported from 1888 on, increasing in volume each year.

3313. Hymowitz, Ted. 1988. Early Swedish work with soy sauce in Canton, China (Interview). *SoyaScan Notes*. Aug. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ted learned that there was a Swedish colony in Canton in the period 1750 to 1760. Perhaps they knew something about the Bowen-Flint [Samuel Bowen and James Flint] affair, so he examined early Swedish literature, though he can’t read Swedish. He found a document on methods of preparing Chinese soy by M. de Groupens. Berkeley or Harvard might have this document. The earliest Europeans to refer to the soybean were Carletti (1597), Saris (1613), and Fernández Navarrete (1665); Ted discovered all of these early references. There must be many other early references in travel logs, but it takes so much time to read them. He will cite this in a forthcoming article on new crops.

Ted will send me an article from *The Philosophical Magazine* (1804) by M. de Grubbens titled “Method of preparing Chinese soy.” He also has on one of his note cards the story of a man visiting Peking in 1655; the man

mentions miso and tofu. Address: Dep. of Agronomy, Univ. of Illinois, Urbana, IL.

3314. Bailey, Simon. 1988. *Soya-based products*. *Natural Choice*. Aug. 15.

• **Summary:** “The food of the future. The soya bean is a protein-packed food which is increasingly used as a dairy or food substitute in today’s search for a healthier diet.” Discusses soya milk, dairy free desserts, tofu, tofu-based foods, soya flour, soya sprouts, tempeh, soya sauce, miso, and high-tech soya foods including TVP and soya protein isolates. Address: 138 Randolph Ave., London W9 1PG, England. Phone: 01-289-7364.

3315. Pirello, Robert J. 1988. Tofu cheese product and process of preparation. *U.S. Patent* 4,765,995. Aug. 23. 4 p. Application filed 16 Sept. 1987. [9 ref]

• **Summary:** Soybean curd is manufactured from a firm, relatively non-porous tofu brick by coating the brick with a thin mellow white miso coating, fermenting the coated brick, removing the miso, steaming, and whipping. The low-fat, low-cholesterol end product has a soft, creamy, water-separation resistant, spreadable texture. Address: 620 Christian St., Apt. 2C, Philadelphia, Pennsylvania 19147.

3316. **Product Name:** Clearspring Sendai Genmai Miso, and Hagoromo Mugi Miso.

Manufacturer’s Name: Clearspring Natural Grocer (Importer). Made in Japan.

Manufacturer’s Address: 196 Old St., London EC1V 9BP, England. Phone: 01-250 1708.

Date of Introduction: 1988. August.

How Stored: Shelf stable.

New Product–Documentation: Simon Bailey. 1988. *Natural Choice*. Aug. 15. “Soya-Based Products.” A photo shows the Label. CSP form filled out by Simon Bailey. 1988. Sept. 28. Gives date of introduction as 1984 under the present label. Formerly sold under the Sunwheel label (1974).

3317. Klaper, Michael. 1988. *Vegan nutrition: Pure and simple*. 2nd ed. P.O. Box 959, Felton, CA 95018-0959. Or 8563 Empire Grade, Santa Cruz, CA 95060. iii + 72 p. Illust. 27 cm. [137* ref]

• **Summary:** An excellent, highly readable introduction to the subject by a physician. The Acknowledgments page (p. 69) reads like a “Who’s Who” of vegetarianism in the USA in 1988. Dr. Klaper gives special thanks to “Cynthia Pararo Klaper, for her indispensable editing suggestions, tireless efforts, and loving support.” Soyfoods (especially tofu, soymilk, and tempeh) are mentioned and discussed throughout this book. Soy-related recipes include: Tofu yogurt. Bran muffins (with soymilk). Tofu omelette. Tofu

tahini dressing. Blond miso dressing. Tofu eggless salad. Miso soup. Hot miso dressing. Tofu cutlets. Tofu loaf.

Note: Dr. Klaper is a graduate of the Univ. of Illinois College of Medicine, with post-graduate training and experience in surgery, anesthesia, obstetrics, and general practice. Since 1972 his emphasis has been on applied nutrition. Until recently his practice was in central Florida. Address: Felton, California. Phone: 408-423-6643.

3318. Mandoe, Bonnie. 1988. Soyfoods: The perfect pair [Tofu and miso]. *Bestways*. Aug. p. 12-13.

• **Summary:** Contains 7 recipes, each using tofu and miso. Address: Hawaii.

3319. McSweeney, Daniel. 1988. Consumer survey 1988. *Whole Foods*. Aug. p. 27-28, 30, 32, 34.

• **Summary:** Natural/organic food purchases. Percentage of respondents who purchased a type of product during the past year: 1988 all/1987 all (1988 women / 1988 men). NA means "Not Available." The following are ranked in descending order of the percentage of consumers buying the product in 1988: Tofu: 63.5/83.4% (55.6/63.5%); Tamari 55.6% / NA (57.8/50.0%); Soy sauce 47.6%/NA (46.7%/50%); Miso 41.8/69.7% (42.2/38.9%); Tempeh 30.2/NA (35.6/16.7%); Soymilk 28.6%/54.5% (31.1/22.2%). Note the sharp declines between 1987 and 1988 for soymilk - 47.6%, miso -40%, tofu -24%. All soyfood products for which there are statistics for both years declined, a serious trend.

Note: The "1986 and 1987 surveys statistics were generated through a reader questionnaire in East West magazine. The 1988 Consumer Survey was handed out to shoppers at 13 different retail stores throughout the country. Due to this variance in the survey base, some statistical discrepancies may have resulted."

3320. *Nutrition News (Riverside, California)*. 1988. Soy: King of the mountain. 11(8):1-4. Aug. [1 ref]

• **Summary:** An overview and introduction to soyfoods nutrition, tofu, tempeh, miso, shoyu and tamari, and soymilk. Note: This magazine was formerly located in Pomona, California.

3321. Schnell, Hannelore. 1988. Kleine Bohne, ganz gross [Small bean, very big]. *Natur (Munich, West Germany)*. Aug. p. 75-83. [3 ref. Ger]

• **Summary:** Discusses soymilk, tofu, soy sauce, miso, tempeh, Soyastern, Svadesha Tofurei, Alpro, and DE-VAUGE. Concludes with a detailed discussion of newly recognized potential dangers with HVP products. Vegetable seasonings made by companies such as Maggi may contain carcinogenic chloropropanols, such as dichloro propanol. Maximum limits on these are now being established.

3322. *Soya Newsletter (Bar Harbor, Maine)*. 1988. U.S. soyfoods production to use 62 million pounds of soybeans in 1988. July/Aug. p. 10.

• **Summary:** This figure was the result of a recently soyfoods industry survey conducted by Soyatech, Inc. The soyfoods included in this projection are tofu, soymilk, tempeh, soy sauce, miso, and soynuts. When asked how they expected their demand for soybeans to grow over the next 5 years, 4.8% of soyfoods manufacturers surveyed expected it to remain the same, 52.4% expected it to grow slowly, 42.9% expected it to grow considerably, and none expected it to decrease.

3323. Sturgeon, Bruce. 1988. Early history of Great Eastern Sun, Oak Feed Miso, Inc., and American Miso Co. (Interview). *SoyaScan Notes*. Sept. 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bruce is looking at documents from the company archives. Great Eastern Sun was founded in March 1982 by Barry Evans. He was the only principal/owner at the time. American Miso Co. was founded in March 1979 as the Oak Feed Miso, Inc. The principals were Sandy Pukel, John Belleme, and Barry Evans, but it is not clear who owned how much stock. It started doing business in 1981 as the American Miso Co. and officially became The American Miso Co. by law in May 1982. The principals of the American Miso Co. were John Belleme and Barry Evans. Sandy Pukel was somehow bought out and left and joined Oak Feed Co.; It seems to have become his. Barry Evans may have been the original president of Oak Feed Co. It was a store, probably a restaurant, and an import and distribution company. Barry and John went on to do the miso company. Great Eastern Sun was founded as a way to market and distribute the miso. They also became an importer and distributor of Mitoku products at about that same time. Don DeBona was the first or second company president, after Marty Roth. Today Barry owns all the stock of both American Miso and GES. Barry treasures his privacy. Bob Ballard and Bruce run GES. Even they do not know Barry's address or phone number. He checks in about once a quarter to see how things are going.

Ah Soy now has about 5% of the U.S. soymilk market, and is trying desperately to hang onto that. The competition is fierce, but they have many loyal consumers. Their 6 oz size is still their best seller, even after introduction of the quart, and even with a price increase last Feb. to above \$1.00. Sales are up compared with last year.

In 1984 Bruce was in Boulder, Colorado as a buyer for Pearl Street Market. They had been buying from GES at that time for about a year. Oak Feed came to Pearl Street Market with imports to sell. Address: 92 Macintosh Rd., Asheville, North Carolina 28806. Phone: 808-438-4730 or 704 252-3090.

3324. Fass, Bill. 1988. Brief history of Macrobiotic Wholesale Co. of Asheville, North Carolina (Interview). *SoyaScan Notes*. Sept. 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This company was originally founded by Great Eastern Sun. In 1986 GES sold it to Kurt Schmitz; it was then located at 503 Haywood Rd. in Asheville. Schmitz in turn sold it to Bill Fass in August 1986. The company does not import. They distribute only macrobiotic products. Some 90% of the products they sell are imported from Japan, and 90% of these they buy from Great Eastern Sun, the importer. They also buy a few imported products from Eden Foods. Soyfood products they distribute include miso, shoyu, tamari, and koji. Address: 799 Old Leicester Hwy., Asheville, North Carolina 28806. Phone: 800-438-4730 or 704-252-1221.

3325. *Japan Times*. 1988. Miso shows promise as treatment for radiation: Researchers say soybeans flush isotopes from rats' organs, muscles. Sept. 27. p. 3. [Eng]

• **Summary:** "A team studying atomic bomb radioactivity has found that miso—a traditional Japanese condiment—is effective in helping remove radioactive elements from the body and controlling inflammation of organs caused by radioactivity, it was reported recently."

"This is the first time its effectiveness has been proven scientifically, according to a study team at Hiroshima University's medical research center on atomic bomb radioactivity."

"The experiment was conducted on male and female rats 4 weeks after birth. They were divided into 2 groups, one group fed with feed mixed with dried red miso and the other fed with regular feed. After a week, radioisotopes of iodine-131 and cesium-134 were injected into the stomachs of the rats.

"Both isotopes are secondary radioactive elements, which are produced in such cases as nuclear reactor accidents. The iodine-131 isotope is absorbed in the thyroid gland and mostly remains there. The cesium-134 isotope is accumulated in muscles and the intestines.

"Researchers measured the amounts of the isotopes left in such places as the blood and thyroid gland 3, 6, 12, and 34 hours after the injection. They found there were no differences between the groups of rats in the amount of isotopes in the thyroid gland. But there was only half the amount of iodine-131 in the blood of the group fed with miso compared to the other group, 3 and 6 hours after the experiment. The effect of the miso was also seen in the kidneys, liver, and spleen. Although there was no difference in the amount of cesium in such places as the blood, a high amount of cesium was removed from the muscles of the group fed with miso, the researchers said.

"In another experiment, rats from both groups were exposed to half a lethal dose of radiation to test the effect of

miso on victims of a nuclear explosion. Although more than 80% of the rats from both groups died within one week of the exposure, the inflammation of organs usually seen in cases of exposure to radiation was less for the miso-fed rats. This showed that miso stimulates the body's circulatory and metabolic system, the researchers said.

"In a book called 'Food and Predispositions,' Dr. Shinichiro Akizuki of St. Francisco Hospital in Nagasaki says the reason why doctors who attended to atomic bomb victims showed no after effects of the bomb is that they drank miso soup with seaweed. After the nuclear reactor accident in Chernobyl [on 26 April 1986 in the Ukrainian SSR], a translation of the book was popular in Europe, causing a rush of European countries to import miso from Japan. This prompted a miso research group... to ask Ito's team to study the relationship of miso and radioactivity.

"Akihiro Sawada of Hiroshima University said... the results may also involve the effect of seaweed, which contains iodine, and that further research on how miso helps excretion of radioactive particles is necessary." Address: Tokyo.

3326. Elliot, Rose. 1988. *The complete vegetarian cuisine*. New York, NY: Pantheon Books. 352 p. First American edition. With many lovely full-page color photos. Index. 28 cm.

• **Summary:** Visually, this is a beautiful book. The author makes minimal use of soybeans or soyfoods in her vegetarian cookbooks. She has apparently not learned that very few cultures that use soya as a traditional part of their diet use either soybeans as such or soy flour. In "Learning to love the soybean" (p. 16) she notes: "Soybeans and soy flour are rich sources of nutrients, but, in my opinion, so difficult to make palatable! However sprouted soybeans are delicious and make an excellent crunchy addition to salads, stir-fries, and sandwiches... Creamy soy milk (p. 106) and tofu (p. 108), which can both be made at home, are other palatable ways to eat soy."

Pages 38-39 contain a marvelous 2-page spread color photo of 30 different leguminous seeds (including soybean and soy flour), each with a brief description, followed by a longer description on pages 40-41. The section titled "Soybean *Glycine max*" states: "Soybeans have a strong flavor and need powerful condiments, such as curry, tomato and garlic, to make them taste good. I think they're nicest when sprouted (p. 207) and added to salads and stir-fries.

"Many products, such as miso, soy sauce, tempeh, soy milk and tofu, are made from soybeans and are described in other sections of this book.

"Soy flour is high in protein and low in starch, so it cannot be used to make a normal white sauce, although it can be stirred into savory sauces and gravies to add bulk and nutrients and is sometimes added to flour as a dough improver, in the proportion 8 parts flour to 1 part soy flour."

Pages 104-05 contain another 2-page spread color photo of dairy and nondairy ingredients, with a brief description of each, including tempeh, seitan, dried deep-fried tofu, aromatic dried tofu [probably five-spice pressed tofu = *wu-hsiang toufukan*], smoked tofu, firm tofu, soft tofu, textured vegetable protein (chunks or chopped), soy milk, and soy cream. A longer explanation is given on pages 106-06. The author does not like the strong soybean flavor or stodgy texture of tempeh. Page 108 gives a brief description of how to make tofu, and has a sidebar titled “Ideas for using tofu and vegetarian protein foods.” A good but brief description of soy sauce is given on p. 184, and a poor description of “How to make soy milk” (with added vanilla, honey, and oil) is given on page 280.

Soy-related recipes include: Miso soup with bean curd (p. 133; a variation includes wakame). Vegan ice cream (uses soy milk instead of dairy milk, p. 280). Thus, only 1 recipe in the 352-page book uses tofu and none use tempeh.

Originally published in Great Britain as *Rose Elliot's Vegetarian Cookery* by William Collins Sons & Co. Ltd., London and Glasgow. “Rose Elliot, a vegetarian since the age of three, is one of England's most popular cookbook authors. Her many best-selling books include *Vegetarian Cooking from Around the World*, *The Festive Vegetarian*, and *The Vegetarian Mother and Baby*. An active food consultant, she has appeared often on television and radio in Britain. She lives in Hampshire, England.” She was born and educated in England. Address: Hampshire, England.

3327. Product Name: Ricewich (Rice Cracker Sandwich Alternative) [Toasted Sesame, or Italian Vegetable].

Manufacturer's Name: Glenn Foods.

Manufacturer's Address: Offices: 99 Central Ave., Woodmere, NY 11598. Shipping: 112 Hudson St., Copiague, NY 11726. Phone: 516-374-0135.

Date of Introduction: 1988. September.

Ingredients: In both flavors: Whole brown rice, sulfite-free vegetables, sea vegetables, organic red miso, herbs.

Wt/Vol., Packaging, Price: 1.75 oz package, 18 per a case.

How Stored: Shelf stable.

New Product–Documentation: Talk with Glenn Foods. 1989. Feb. 28. Of their 14 Ricewich products, two flavors contain miso. These were launched in about Sept. 1988.

3328. Lordez, Marie-Française. 1988. Du soja dans notre assiette? [Some soya in our plate?]. *Revue Laitiere Francaise* No. 477. p. 52-53. Sept. [Fre]

• **Summary:** Soyfoods discussed include tofu, soymilk, and miso. Manufacturers include Cacoja, Société Soy (Soyeux brand), Lima Foods, Sojadoc, Innoval (Sojalpe brand), Maho (Tofu Kiss), Celia group, Triballat (Sojasun brand). A photo shows many soymilk products, the majority bearing the Provamel brand, made by Alpro in Belgium. Address: Ingénieur en Agriculture, IGIA, France.

3329. Ohsawa America. 1988. Macrobiotic foods catalog [Mail order]. P.O. Box 3608, Chico, CA 95927. 36 p. Sept. • **Summary:** Includes imported (from Japan) soy sauce, miso, miso condiments, koji, and nigari [a tofu coagulant]. Address: Chico, California. Phone: 800-647-2929.

3330. Duchesne, Paul. 1988. Development of the Brown Rice & Tofu Sandwich, and early history of Wildwood Natural Foods (Interview). *SoyaScan Notes*. Oct. 8 and Aug. 16, 1989. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Paul Duchesne developed the world's first “Fried Rice & Tofu Sandwich” in Fairfax, California. Duchesne's sandwich was one of America's early second generation tofu products. He deliberately called it a sandwich, even though it was made in a chapati, to make it sound more American. Today there are a surprisingly large number of U.S. companies making a Brown Rice & Tofu Sandwich. Duchesne started 3 of these companies and gave the basic recipe and production methods to the people who started most of the others. All descendants of the original BRTS have also been made in a chapati.

In late October or early November 1977, Duchesne sold the first 200 of them to participants at a macrobiotic seminar led by Michio Kushi in Marin County. Donna Gayle helped him make them. They were very popular; the key secret ingredient was a miso-sesame butter spread which Paul had learned of from George Ohsawa's book *Zen Cookery* (Miso Spread #203).

In Jan. 1978 he started making these sandwiches at the Sleeping Lady Cafe (a co-op started in about 1975 in Fairfax, Marin County) and selling them at the Good Earth Natural Food Store in Fairfax. He bought his tofu, made by Quong Hop & Co. off the shelf at the Good Earth. In Feb. 1978 he began to distribute them to many natural food stores throughout Marin County.

While in California in 1978 Duchesne gave his recipe and production techniques to Roy Steevensz in Los Angeles. Roy was making Fried Rice & Tofu Sandwiches by May 1978 on a big table in his living room. He continued until about 1984. Roy is now claiming that he created the idea. Paul and others were bringing Roy to the Bay Area as a macrobiotic teacher in 1977. Originally Roy was making seitan in Los Angeles.

In September 1978 Paul went to Boston to study macrobiotics, so he gave his Fairfax sandwich business (which still had no name) to Chris Smith. A month later, in October 1978, Chris stopped frying the brown rice and renamed the product, coining the now-famous name “Brown Rice & Tofu Sandwich.” At the same time he named his business Wildwood Natural Foods. In late 1978 Chris Smith taught Joe Nixdorff, who started the company City Samurai in Berkeley and made the Samurai Hero from

1978-1982. In Boston, Duchesne lived in The Garvey House, a macrobiotic study house. There he started to make his brown rice and tofu sandwiches. The operation soon grew into a business, which he named Rice House. He also taught his process to Marty Roth and Barbara Svenning Garvey Roth, who lived in the Garvey house; several years later Marty and Barbara moved to Santa Fe, New Mexico, where they started a business making the BRTS. Later Barbara made it near Asheville, North Carolina. Marty and Barbara in turn taught the sandwich to Jeff Fairhall, who started Essential Foods in Seattle and built it into a thriving business.

In May 1979 Duchesne and Chris Smith traded places and companies. Thus Chris took over Rice House in Boston, making the transition without missing a day of production and delivery to Brookline, Cambridge, and Boston. He renamed the product Brown Rice & Tofu Sandwich. Chris ran the company until 1981, when he sold it. It is still in operation and named Rice House. Paul left Boston for California, and took over the company he had started originally (now named Wildwood) in Fairfax.

In Oct. 1979 Bill Bramblett (a monied rock musician and part owner of the Sleeping Lady co-op) approached Duchesne and proposed that he invest in the company and expand the sandwich business, including distribution to Sacramento. The company was making only about 100 sandwiches a day at the time. Duchesne declined, saying he wanted to build a traditional, cauldron-style tofu shop around the sandwich operation—an idea that he had conceived while in Boston. Bill said he couldn't afford that so Paul found two more people with money to invest. In May 1980 Duchesne, a sole proprietor, incorporated Wildwood. He gifted shares to Bill Bramblett, Paul Orbuch, and Frank Rosenmayr. They they invested money so that of the 4 people so that ended up owning 25% of the stock. In Sept. 1980 the company moved out of The Sleeping Lady and down the road to 139 Bolinas Rd. They set up a tofu shop and started to make their own tofu. Duchesne's business plan showed that the operation would open in July. Instead opening was delayed until September 1980, which was the slower rainy season.

In late 1980 Richard Leviton visited Duchesne and Wildwood. In the Winter (Feb.) 1981 issue of *Soyfoods* magazine, in an article titled "Putting tofu in the lunch boxes of America" (p. 61), Leviton gave a detailed description of the shop: "which appears to fulfill the dreams of many soyfoods proprietors by combining both light tofu manufacture with light sandwich production in a clean, efficient, and industrious little shop. Mr. Duchesne designed his shop as a tofu showcase with broad wall-to-wall front windows so that passers-by may glimpse tofu production during the days. Wildwood produces a line of eight packaged vegetarian sandwiches including Brown Rice and

Tofu Sandwich (with vegetables in a whole wheat bun), Tofu Vegetable Salad,..."

In late 1980 the business was operating in the red. Bramblett, Orbuch, and Rosenmayr attributed the delay to poor management and in Dec. they, controlling the board of directors, demoted Duchesne (who was working long hours) from general manager to president and sales manager, with a salary cut. There were bad feelings. The board then acted as general manager and met each Tuesday night. There were frequent conflicts between Duchesne and the other three. They wanted to expand faster than did Duchesne. By Feb. 1981 the business was operating at a profit. In Dec. 1981 Duchesne proposed that Wildwood start a distribution company (which he would head) to distribute products made by Wildwood and others. The other three disliked the idea, so a week later Duchesne quit (but kept all his Wildwood stock), bought a big new refrigerated truck, and in January 1982 started his own natural foods distribution company named Cauldron Express; it distributed products made by companies other than Wildwood—such as Brightsong Tofu, Pacific Tempeh, and Grain Dance Seitan. The Wildwood owners felt that Duchesne was competing with them so they repeatedly made life difficult for him, and they were a major factor in his bankruptcy 9 months later in September. (Later, Wildwood got into the business of distributing products made by other companies—with a fervor.) In April 1983 in bankruptcy court, Duchesne signed a covenant not to compete with Wildwood for 5 years and sold all his stock and rights to the other three; he ended up getting \$5,000.

In about 1981, at the heyday of the brown rice and tofu sandwich, there were 5 companies in the San Francisco Bay area making 1,000 of them each day. Then the California Health Department began to wake up. When they realized that tofu was a perishable protein food that should be refrigerated, they decreed that all BRTSs be taken off the front counter of stores and sold out of the refrigerator. Sales dropped.

In Oct. 1988, after 5 long years, Duchesne returned to the soyfoods business making a BRTS and doing business as Bert's Place (Best Ever Rice & Tofu Sandwich). Wildwood challenged him for breach of the non-compete clause. The earlier agreement was not clearly written and The judge basically favored Duchesne in the arbitration. He had to rename his company to Paul's Place, which ended up in March 1989 as Paul's Organic Food Works. In early 1989 Duchesne developed a chronology of events relating to Wildwood's history, a chart showing the progeny of the original Fried Rice & Tofu Sandwich, and a collection of labels for these progeny.

Articles on Wildwood have been published in the *Pacific Sun* (16-22 Jan. 1981, Food & Drink Section by Linda Xiques, pronounced Zirksus), *Independent Journal* (San Rafael; about 1985-87), *The Fax* (Fairfax, Jan. or Feb.

1986, written by Lisa Alpine, who wrote an earlier article about Wildwood in about 1983-84). Duchesne has been married for 24 years to a nurse; they have 2 children. Address: Fairfax, California. Phone: 415-453-2360.

3331. Livingston, Joan. 1988. Making miso: Natural methods for a natural food. *Daily Hampshire Gazette* (Northampton, Massachusetts). Oct. 21.

• **Summary:** About Christian and Gaella Elwell and their South River Miso Co. The couple became interested in miso during their stay in Boston in the 1970s; there was no unpasteurized miso available in the USA at the time. After studying miso making in California with Mr. Muramoto, they purchased 64 acres that spread up from the rich bottom land of the South River in Conway, Massachusetts. Then they bought the Ohio Miso Co. Describes the commercial production process and gives 5 miso recipes. Photos show: (1) Apprentice Caroline Wurts and Christian Elwell cool rice that will become koji. (2) Christian pours rice into wooden koji crib. (3) Gaella and Christian inoculate rice in crib. (4) Isaiah and Christian Elwell, with koji crib in foreground. (5) Miso aging in cypress vats.

3332. **Product Name:** Paul's New and Original Brown Rice Tofu Sandwich [Basic, Raw Onion & Radish, or Half Size with Arame].

Manufacturer's Name: Bert's Place. Renamed Paul's Place. Renamed Paul's Organic Food Works in March 1989.

Manufacturer's Address: P.O. Box 431, Fairfax, CA 94930. Phone: 415-453-2360.

Date of Introduction: 1988. October.

Ingredients: Basic: Short grain brown rice*, spring water, nigari tofu*, sprouted wheat tortilla*, toasted tahini, barley miso*, green onions* or leeks*, carrots*, seasonal green*, lettuce*, clover sprouts*, shoyu*, sesame oil*, garlic*, ginger*, apple cider vinegar, unrefined sea salt, spices. * = Organically grown per Cal. Health Code Sec. 26569.11.

Wt/Vol., Packaging, Price: 12 oz. The basic and onion retail for \$3.75, the half size retails for \$2.10 (8/89, northern California).

How Stored: Refrigerated.

New Product–Documentation: Label sent by Paul Duchesne. 1989 Aug. 11. 5.5 by 2 inches. Black on pink, red, or blue paper. "12 happy ounces (6 ounces for arame). For the best taste, remove from refrigeration one hour before eating. To eat: Open bag–Tilt sandwich in bag–fold bag down." Illustration of animated product, with smiling face on tortilla, arms, and legs. On the back of each is a statement, which is changed every 2 weeks. For example: "Smile. Its great exercise for both of us." "The means are the ends. Sonia Johnson." "Mind is body is mind is body. Blumlein." Talk with Paul Duchesne. 1989. Aug. 16. The basic was his first new product introduced in Oct. 1988, the Raw Onion & Radish (the radish used to be daikon) in

November, and the half size in Dec. 1988. They were developed with the help of Barbara Svenning Garvey. The new and original is now different: The tofu is marinated and a seasonal green (usually kale or collards) is added. The rice is cooked in spring water. These changes are voluntary. Paul is now making and selling about 360 brown rice and tofu sandwiches a week.

3333. *East West*. 1988. East West presents: Best & worst awards. 3rd annual. 100% natural. Oct. p. 65-72.

• **Summary:** Best Natural Soy Sauce: Lima Nama Shoyu from Ohsawa-Japan, imported by Ohsawa America of Chico, California. Twice brewed, lower in salt, and aged four years. "It is unique among shoyus, with exceptional smoothness and flavor."

Better Than It Sounds Award: "Tofu chocolate? Yes, Barat Bars by Legume Inc. of Montville, New Jersey, use tofu instead of dairy and no hydrogenated or fractionated palm kernel oil. Carob candies move over!"

Best Tasting Flavored Soy Drinks: "The Westbrae Malted won this contest going away. Creamy, thick, and delicious, they are more of a dessert than a drink. Some devotees eat them frozen."

Least Healthful Line of Soy Drinks: "The Westbrae Malted. The flip side of their great taste is their almost 400 calories and 15 grams of fat per 8 ounces."

Most Healthful Line of Soy Drinks: Edensoy. They are the only producers making a totally oil-free drink.

Worst Tasting Flavored Soy Drinks: "Vitasoy from San Francisco, Calif., seem to have few fans and finished last in our blind taste test."

Most Questionable Beverage Label Claim: "3 grams of fat per 6 ounces of Carob and Chocolate Ah Soy, by Great Eastern Sun of Enka, North Carolina. These soymilks are rich and creamy, yet 3 grams is a lower fat content than even Edensoys, made without oil. How is that possible guys?"

That's Progress? Award: "Mori-Nu Tofu by Morinaga Nutritional Foods of Los Angeles. Aseptic Tetrapacked tofu that has indefinite shelf life and can be shipped anywhere. Good for backpackers maybe but can't compare to fresh and local."

Best Fake Hot Dog: SoyBoy Tofu Not Dogs by Northern Soy of Rochester, N.Y. "Nice smoky flavor and smooth texture, almost as good as the real thing."

Worst Fake Hot Dog: Tofu Pups of Lightlife Foods of Greenfield, Massachusetts. "Dry and crumbly on the inside, with a lack of distinctive flavor. Won't fool anybody at the neighborhood cookout."

Best Tamari: San-J Traditionally Brewed Tamari from San-J International of Colonial Heights, Virginia. "No one else even came close. Question: Will they be able to retain their appeal when the first U.S.-brewed batch hits the shelves?"

3334. Karta, Susani K. 1988. Market trends in the development of traditional soyfood. Paper presented at the ASEAN Food Conference '88: Food Science and Technology in Industrial Development. 18 p. Held 24-26 Oct. 1988 at Bangkok, Thailand.

• **Summary:** Contents: Introduction. Traditional soyfood. Market situation and trends. Indonesia. Singapore. Malaysia. Thailand. Constraints in the market development of soyfood (in each of the above 4 nations). Major trends in the development of traditional soyfoods. Marketing strategy of soyfood. Tables: 1. Traditional non-fermented soyfood products. 2. Nutritional composition of traditional non-fermented soyfoods. 3. Description and uses of traditional fermented soyfood products. 4. Nutritional composition of traditional fermented soyfoods.

5. 1987 estimated consumption of soybeans as foods in the Far East [total and per capita in East Asia]. China, 1,062 million population, 7,325,000 tonnes, 6.9 kg/capita. Japan, 122 million population, 1,141,000 tonnes, 9.3 kg/capita. South Korea, 42.1 million population, 330,000 tonnes, 7.8 kg/capita. Taiwan, 19.6 million population, 260,000 tonnes, 13.3 kg/capita.

6. Southeast Asia soybean consumption for food. From 1983 to 1989 the increase in 1,000 metric tons was: Indonesia 927 to 1,600. Singapore 14 to 26. Malaysia 32 to 70. Thailand 40 to 150. Philippines 9 to 24. Total 1,022 to 1,870 (increase of 82.9% in 7 years).

7. Per capita soybean consumption for food in Southeast Asia. From 1983 to 1989 the increase in kg/person was: Indonesia 6.0 to 8.8. Singapore 5.6 to 10.5. Malaysia 2.1 to 3.7. Thailand 0.8 to 2.6. Philippines 0.2 to 0.5. Average total: 3.8 to 5.9 (increase of 55.3% in 7 years).

8. 1987 estimated consumption of soybeans as foods in Southeast Asia [total and per capita]. Indonesia, 175 million population, 1,575,000 tonnes, 9.0 kg/capita. Thailand, 53.6 million population, 118,000 tonnes, 2.2 kg/capita. Malaysia, 16.1 million population, 55,000 tonnes, 3.4 kg/capita. Singapore, 2.6 million population, 20,000 tonnes, 7.7 kg/capita. Philippines, 61.5 million population, 18,000 tonnes, 0.3 kg/capita.

9. Indonesian soybean production, imports, and consumption as food (in tonnes). From 1983 to 1989, production rose from 536,000 to 1,250,000, imports decreased from 391,000 to 350,000, and the amount consumed as food increased from 927,000 to 1,600,000. About 50% of the soybeans used for foods in Indonesia go to make tempeh, and 40% are used to make tofu.

10. Singapore soybean consumption as food. From 1983 to 1989 the amount increased from 14,000 tonnes to 26,000 tonnes. Most of these soybeans are used to make tofu and soymilk. 11. Malaysia soybean imports and consumption as food (in tonnes). From 1983 to 1989, production rose from 182,000 to 440,000, and the amount consumed as food

increased from 32,000 to 70,000. 12. Thailand soybean production, and consumption as food (in tonnes). From 1983 to 1989, production rose from 113,000 to 490,000, and the amount consumed as food increased from 40,000 to 150,000. Only in 1988 were soybeans imported—40,000 tonnes. This growth of soyfood consumption is due partially to the Government of Thailand's interest in promoting the awareness and utilization of soyfood products. The Thailand Agricultural Extension Service program and other institutions have been actively advocating of soyfoods into the food industry and the human diet, especially in rural areas. The government controls soybean imports by issuing licenses.

In summary: The soybeans with the highest per capita soybean consumption for soyfoods are: Taiwan 13.3 kg, Japan 9.3 kg, Indonesia 9.0 kg, Singapore 7.7 kg, South Korea 7.3 kg, and China 6.9 kg. The greatest potential for growth lies in China, where it is very common to find markets running out of soyfoods early in the morning. There is also great potential for growth in Malaysia, Thailand, and the Philippines. Address: American Soybean Assoc., 541 Orchard Rd., #11-03 Liat Towers, Singapore 0923, Republic of Singapore.

3335. Katzen, Mollie. 1988. Still life with menu: Fifty new meatless menus with original art. Berkeley, California: Ten Speed Press. 350 p. Illust. Index. 29 cm. *

• **Summary:** Contains 17 tofu and 7 miso recipes, no tempeh. Many color illustrations throughout.

3336. Shurtleff, William; Aoyagi, Akiko. 1988. Das Miso-Buch: Hersetzung, Sorten, Kochen mit Miso, Rezepte [The book of miso: Production, varieties, cooking with miso, recipes]. Munich, West Germany: Goldmann Verlag GmbH. 414 p. Oct. Illust. by Akiko Aoyagi Shurtleff. Index. 23 cm. Pocket book edition. [Ger]

• **Summary:** A pocket book edition of the original 1980 German edition of *The Book of Miso*. Contains 350 recipes.

Contents: Foreword. What is miso? Part I. Varieties, preparation, and production of miso. Part II. Cooking with miso (recipes). Glossary. Acknowledgments. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

3337. Bolduc, Bill. 1988. Re: Early history of Eden Foods, Inc. to 1973. Part I. Letter to William Shurtleff at Soyfoods Center, Nov. 5. 2 p. Revised 4 Dec. 1991 by Bill Bolduc, Ron Teegarden, and James Silver.

• **Summary:** The following account is based on hours of discussion between Bill Bolduc, the Redmonds, and the Silvers between 1988 and 1991. Bill is not familiar with the details of the history of the food co-op in Ann Arbor prior to 1969. But Ronnie Teegarden says that in about July 1967 he and Gloria Dunn started a loosely-organized food buying

co-op—which had no name—in Ann Arbor, Michigan. Within a few weeks, a number of their friends and acquaintances (a group of eclectic pathfinders, students, graduates, macrobiotics, dropouts, musicians) informally joined the group. These included Tim Redmond, Mark and Nancy Retzloff, Linda Succop, Iona Teegarden, and Bob Thorson. From time to time, they collectively ordered macrobiotic staples from Erewhon in Boston using the Erewhon catalog. When the foods arrived, the food co-op members got together and divided them up at the Teegarden-Leabu General Store, located a half flight below street level at 209 South State Street, below the Herb David Guitar Studio in Ann Arbor. Run by Ronnie Teegarden, with help from Gloria, this store's main business was selling local art, second hand clothes and records, etc.

Bill Bolduc and Judy Succop [Linda Succop's sister], were married in June 1969 in Ann Arbor. They were not yet members of the co-op at that time. A few days later, they went to Berkeley for the summer. When they returned to Ann Arbor at the end of that summer, they lived in Saline, Michigan, 12 miles outside of town with Mark & Nancy Retzloff, Linda Succop, and Tim Redmond. Bill, who wasn't working or going to college, was trying to figure out what to do next. By September 1969, Bill and Judy Bolduc joined the food co-op. They also joined the Zen Macrobiotic Supper Club; all of its members were also members of the food co-op.

In the fall of 1969 the Teegarden-Leabu second-hand store looked like it was about to close, which would leave the food co-op without a home. The group (especially Ronnie) convinced Bill Bolduc to take charge of the food co-op and find it a permanent home, which he did.

On 4 Nov. 1969 Bill Bolduc incorporated Eden Organic Foods, Inc. as a non-profit corporation in the state of Michigan. The name "Eden," which stood for Environmental Defense Energy Network, was coined at this time by Bob Thorson during a discussion between, Bill Bolduc, and Gloria Dunn at a coffee shop. Thus, the term "Eden" was first used in connection with this co-op or business in Nov. 1969.

Eden was born under a good star. The date Nov. 4 was carefully chosen to be astrologically propitious. At the time, Bill was an intense student of astrology with Michael Erlewine—who is now world famous in the field, and the owner of Circle Books, an astrological publishing company. In 1970 Michael also designed the Eden logo of the 4 sprouts in a circle. Eventually Michael became one of Bill Bolduc's students in macrobiotics.

Bill was president of Eden Organic Foods and his wife Judy (who was working as a secretary at the University of Michigan School of Music) was secretary. Bolduc used \$200 of his own money to rent a converted apartment above the bicycle store at 514 East William St. in Ann Arbor, near campus. People from the community loaned \$1,500 to help

stock the co-op store and buy an 8-inch Meadows stone mill to grind flour.

The question arises: When was Eden Foods established? Bill Bolduc and Tim Redmond believe that the founding should be dated from Nov. 1969, when the company was first named; before Nov. 1969 the food co-op was not even a business. It was dead and had disappeared for about a month until Bill resurrected it by placing an order to Erewhon using his own money.

Eden Organic Foods first began selling soyfoods commercially in November 1969, starting with their first order from Erewhon in Boston. They would buy "tamari" (actually shoyu) and miso (kome = rice, mugi = barley, and Hacho varieties) in bulk from Erewhon (which imported them from Japan). At their store, Linda Succop (Bill's wife's sister) would repackage the products, putting the shoyu into bottles and the miso into plastic bags. They were labeled using plain white pressure-sensitive gummed labels with a rubber stamp. One stamp contained the name and ingredients for each product, and another, that was stamped below it, gave the company name and address. They wrote in the weight or volume by hand. Also at William St. a tiny Meadows Mill was used to grind grains and seeds into flour. Continued. Address: ELI Research Corp., 660 Northland Blvd., Suite 28, Cincinnati, Ohio 45240. Phone: 513-851-0330 or 513-751-9090.

3338. Bolduc, Bill. 1988. Re: Early history of Eden Foods, Inc. to 1973. Part II. Letter to William Shurtleff at Soyfoods Center, Nov. 5. 2 p. Revised 4 Dec. 1991 by Bill Bolduc, Ron Teegarden, and James Silver.

• **Summary:** In Sept. 1970 the fledgling company had an offer to move into a newly-redecorated mini-mall [at 211 South State St.] on the main street of campus. New personnel and financing would be needed. Bolduc called Tim Redmond, who had been studying and working at the Sanae macrobiotic restaurant in Boston, to ask for help. Tim returned to Ann Arbor and joined Bolduc in the expansion effort. To raise money for the move, the two approached Tim Redmond's father, who said he would help finance the expansion only if the business was reorganized as a for-profit corporation with Tim having equal ownership. They agreed and in about Oct. 1970 Eden was reorganized as a for-profit corporation with Bolduc and Redmond each owning 50%. At that time the partners shortened the company name to Eden Foods Inc. Bolduc and Redmond then borrowed a 4-figure sum from Tim's dad, had the new store remodeled, and entered the big time. After the new store was opened and running, Redmond returned to Boston and the Sanae restaurant, where he completed his studies. But with this move they fell from the graces of the political co-ops. In November 1970 they did a "Brown rice, seaweed, and dirty hot dog" Bob Dylan commercial on a local radio station; it was a big hit. They bought a 15-inch

Meadows Mill and a rotary-drum roaster, then milled flour and baked granola in the back of the store.

In 1970 Bill had located Tom Vreeland, an organic farmer in Ypsilanti, Michigan. An Eden Foods Wholesale Pricelist dated 26 July 1971 shows that the Eden store at 211 South State St. was wholesaling soybeans, soft wheat, corn, and rye, all grown organically in Michigan. Eden was also selling organic flours that they ground from these grains.

In the spring of 1971, after realizing they were the only “natural food” store in the area, and having some other “health food” store owners in Detroit express an interest in carrying more food, they decided to wholesale foods out of the back of their retail store at 211 South State Street. Bill flew to Boston to meet Tim Redmond. They visited Erewhon (they wanted to convince Erewhon to let Eden be their distributor at lower prices), then Bill flew to Arrowhead Mills in Deaf Smith County, Texas, to make arrangements buying in bulk at wholesale prices. In the summer of 1971 they ordered their first 20-foot trailer load of organic foods from Arrowhead Mills, and ran an ad in *East West Journal*. Soon they started to distribute their foods to 4-5 accounts in Detroit. They bought a 1964 16-foot green Dodge van and a dry weight weigher/dumper machine. Their two main brands were Arrowhead Mills and Erewhon, but soon they developed the Eden brand with printed labels, onto which they would rubber-stamp the product name (such as bottled tamari and packaged miso). Soon they added other brands: Celestial Seasonings, After the Fall, Timbercrest, etc.

The wholesale operation quickly outgrew the back of the retail store, so they borrowed more money and rented a 5,000 square foot Quonset hut (resembling an airplane hanger) down on Main Street by the Huron River. Tim Redmond, Mark Retzloff, and Bill Bolduc ran the wholesale operation. Retzloff later co-founded Alfalfa’s, a natural foods supermarket chain based in Boulder, Colorado.

In October 1971 Bolduc hired Michael Potter, who was living in Detroit, to run the store. Just before this, Potter had managed a natural foods store named Joyous Revival in nearby Birmingham, Michigan. Prior to this time, the company had been owned by Bill and Judy Bolduc (50%) and by Timothy Redmond (50%). Potter was given 13.5% of the stock and the other principals’ share reduced proportionally.

In the late summer or fall of 1973 the Bolducs sold their shares back to the corporation, which then gave a portion of these to Tim Redmond and Michael Potter so that these two men now owned 51% and 49% respectively.

The Bolducs then left Ann Arbor, moving to Cincinnati, then to Illinois, then back to Ann Arbor. Bill is certain that when he left Eden Foods, the company was not importing any products from Japan. He would guess that it was not until about 1975 that Eden started to import a line of foods

from Japan. Their first supplier in Japan was Muso Shokuhin, a leading macrobiotic and natural foods exporter in Osaka. Initially, all of their imported products were required to bear the Erewhon brand. Imported soyfoods included miso and shoyu. Sales hit \$175,000 in 1973.

Note: Eden was the first of the many macrobiotic distributors based on the Erewhon model to open in America. Others that soon followed included Food for Life in Chicago (1970), Janus in Seattle, Washington (1972 Jan.), Essene in Philadelphia (by 1971 Feb.), Laurelbrook in Maryland (1971 Aug. 23), Ceres in Colorado Springs (by 1973), and The Well in San Jose, California (1973). Address: ELI Research Corp., 660 Northland Blvd., Suite 28, Cincinnati, Ohio 45240. Phone: 513-851-0330 or 513-751-9090.

3339. Sheraton, Mimi. 1988. Cookbooks to give thanks for: An autumn harvest of American standards, Asian flavors and universal inspiration. *Time* Nov. 28.

• **Summary:** *An Ocean of Flavor* (Morrow, \$20.95) is by Elizabeth Andoh, an American who married a Japanese and has spent many years in Japan studying the country’s food and culture. This fine guide shows how to enhance the flavor of seafood without destroying it. “Fried soft-shell crabs in a spicy sauce, cold poached tilefish with mustard-miso sauce and fiddlehead ferns, and a careful, simple tempura recipe are among the enticements.”

Another new Asian food book is *Asian Ingredients* (Morrow; \$22.95) by Bruce Cost. It includes a discussion of the “soy sauces that so many chefs are now using to accent European dishes.”

3340. Belleme, Jan. 1988. Fabulous finger foods. *East West*. Nov. p. 32, 34, 36-39.

• **Summary:** Includes recipes for: Tempeh Salad Tea Sandwiches. Walnut-Miso Dip. Deep-Fried Tempeh with Tofu-Mustard Topping. Address: Rutherfordton, North Carolina.

3341. **Product Name:** [Organic Barley Miso, Rice Miso, White-Mellow Rice Miso, Organic Rice Miso with Herbs, Organic Oat-Yellow Pea Miso, Organic Barley-Yellow Pea Miso, Organic Rice Koji, Organic Barley Koji].

Foreign Name: Bio Kornmiso, Rismiso, Ljus Rismiso, Bio Ört Miso, Bio Havre-•rtmiso, Bio Korn-•rtmiso, Bio Ris Koji, Bio Korn Koji.

Manufacturer’s Name: Timoteus Kojiprodukter HB (Handelsbolag).

Manufacturer’s Address: Härvstgård, 19 063 Örsundsbro, Sweden. Phone: 0171-65106.

Date of Introduction: 1988. November.

New Product–Documentation: Talk with Ted Nordquist. 1990. Nov. 23. The miso company, originally named Malvabo (which see, 1979) has always been owned by Tim

Ohlund, never by Aros. From the beginning, Tim made the koji at home in Malvabo near Örsundsbro, then cooked the soybeans and mixed and ground them with the koji and salt at Aros. He fermented the miso in the basement of Aros in 30-50 liter ceramic crocks. Initially Tim operated without a company name and sold the miso directly to stores and individual customers. Then in late 1988 he started a company named Timoteus, which makes and sells two products: miso and koji. Tim is now employed by Ted, manufacturing and delivering tofu, but Tim still makes miso; he does not make tempeh.

Letter and Labels for all of the above products from Tim Ohlund, owner of Timoteus Kojiprodukter HB. 1991. May 14. In Dec. 1986 he started to produce miso on a larger scale in anticipation of registering his company. In Nov. 1988 he first registered the company at the local registrar's office as Timoteus Kojiprodukter Handelsbolag (HB), Härvestagård, 19 063 Örsundsbro, Sweden. Phone: 0171-65106. He first sold miso (rice miso and barley miso) commercially in Nov. 1988. The largest amount of miso he has ever sold in one year is about 1,000 kg. He has never made any other fermented soyfoods commercially, but he has made tempeh for home use. Tim tried to register Timoteus as a trademark at the patent and trademark office. A preliminary check indicated that the trademark would probably be granted, so Tim started printing labels. After waiting nearly 2 years for bureaucratic processing, he was informed that he could not register it as a trademark. Hoechst, a big Swiss multinational company, already had a registered product with a similar name (Timote), and it was also a grain-based foodstuff. Now Tim may have to change the name Timoteus and reprint all his labels, or remain small and lay low. Present status: Timoteus makes about 800 kg/month of all kinds of miso plus 5-6 kg/week of dried koji. The 3 best-selling products are rice miso, barley miso, and white-mellow rice miso, each selling 30 kg/week. Timoteus is owned equally by Tim and his wife Annalena; Tim is the sole worker. The business uses about 7 square meters of storage space at Aros Sojaprodukter, and uses the production facilities once a month. Sales last year were 28,000 Skr.

Tim has been working at a natural food store for the past 4 years; the ownership changed 4 times in those 4 years and each new owner was worse than the one before, losing idealism and becoming more of a pill shop. So Tim quit last year and Ted Nordquist got him to return to working at the Aros tofu factory again. Now Ted has sold half of his company and will be moving tofu production to the south of Sweden to make it more efficient. When Ted sells that building, Tim will have no place to make miso that is inexpensive enough. Miso sales are too small and weak to allow for any even moderate investments at this time. There are several places where he could make miso inexpensively but they both require that he move, which he does not want

to do. So Tim is out of a job, with a family and 3 kids to support, and with the natural foods sector in Sweden apparently decreasing in size. Tim hopes to get a student loan to return to Uppsala University to study economics and ecology.

Labels sent by Tim Ohlund. 1991. May 14. Each is 2.5 by 1.5 inches. Self adhesive. One has black letters on glossy white paper. Another has black letters on light golden brown, with the company name, address, phone, and a striking logo, showing a stylized person kneeling and receiving light from heaven in an uplifted vessel. Talk with Tim Ohlund. 2001. April 21. He stopped making miso commercially in about 1990 when Ted Nordquist moved his tofu factory. But he still makes miso on a home scale for his family and friends.

3342. *Loveland Reporter-Herald (Colorado)*. 1988. Miso works as flavoring substitute. Dec. 28.

• **Summary:** "Miso, a fermented seasoning made from a legume or grain plus salt, water and a bacterial culture. Is a good flavoring substitute for meat and meat broth, says Karen Wilken, Colorado State University Cooperative Extension food science and human nutrition specialist... Miso can be used as a substitute for bouillon or meat stock in soups, gravies or stews. It also can be used like soy sauce or Worcestershire sauce in sauces, dips and dressings.

"Because it is relatively low in sodium it can serve as a seasoning in moderate salt level diets."

3343. American Miso Co. 1988. Our two new misos!: The American Miso story (Ad). *Vegetarian Times*. Dec. p. 40.

• **Summary:** This one-third page vertical black-and-white ad begins: "Miso Master is proud to announce two new misos: Brown Rice Miso and Sweet Barley." Near the top of the ad is a logo of bound sheaves of grain. Near the bottom of the ad is the Miso Master logo, an illustration showing the head and shoulders of a Japanese miso master, with a knotted headband, in front of a large wooden vat of miso. Below "Miso Master is produced by the American Miso Co. for Great Eastern Sun." Address: Rutherfordton, North Carolina.

3344. Brown, Judy. 1988. The joy of soy: Nutrition for the '80s. *Body, Mind & Spirit*. Nov/Dec. p. 30-32.

• **Summary:** Contents (Soyfoods, nutrition, and a healthy diet). Tofu. Tempeh. Miso. Natto. Okara. Soy cheese & soy yogurt. Soy flour & grits. Soymilk. Soy sauce. Resources: Eden Foods, Fantastic Foods, Inc., Lumen Foods Corp., San-J International. Vitasoy (U.S.A.) Inc., Westbrae Natural Foods (Downey, California). Address: President, In Good Taste, 5923 John Adams Dr., Camp Springs, Maryland 20748.

3345. Dagnelie, Pieter C. 1988. Nutritional status and growth of children on macrobiotic diets: a population-based study. PhD dissertation, Dep. of Human Nutrition, Wageningen Agricultural University, the Netherlands. 144 p. [Eng]*
Address: Dep. of Human Nutrition, P.O. Box 8129, Wageningen Agricultural Univ., 6700 EV Wageningen, the Netherlands.
3346. Golbitz, Peter. 1988. Soyfoods sales projected to reach \$750 million by 1990. *Soya Newsletter (Bar Harbor, Maine)*. Sept/Dec. p. 1, 6.
• **Summary:** The estimated retail value of soyfoods in the USA in 1988 was \$682 million. The various soyfoods had the following market shares: soy sauce 67.3% (est. \$460 million retail store valuation), tofu 11.3% (est. \$77 million), second generation products 9.5%, soymilk 5.3%, miso 4.1%, soynuts 1.7%, tempeh 0.8%.
All of the 1980 figures used in this study for comparisons and growth rates were taken, without permission, from *Soyfoods Industry & Market: Directory and Databook* by Shurtleff & Aoyagi. Address: Soyatech, Bar Harbor, Maine.
3347. Harayama, Fuminori; Yasuhira, Hitomi. 1988. *Aspergillus-zoku to Rhizopus-zoku no daizu tanpaku bunkai sayô no hikaku* [Comparison of hydrolytic action on soybean protein by the genus *Aspergillus* and *Rhizopus*]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 83(12):828-33. Reprinted in Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.). No. 30. p. 94-99. [19 ref. Jap; eng]
• **Summary:** Changes in protein during manufacture of miso and fermented soybeans using fungi of the genera *Aspergillus* and *Rhizopus* were examined by SDS-polyacrylamide gel electrophoresis. The protease activity, especially of *Rhizopus*, was largely inactivated by ethanol in salt-free miso containing 5% ethanol. *Aspergillus* hydrolyzed soybean protein to products of low molecular weight, whereas *Rhizopus* only slightly hydrolyzed it, leaving mostly middle and high molecular weight substances. Address: The Shinshu-Miso Research Inst., 469-6 Nakagoshô, Nagano City, Japan 380.
3348. Kikuchi, S. 1988. [Packaging and cold chain distribution of raw, unpasteurized miso]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 83(12):797-99. [Jap]*
3349. Lamont, Heather. 1988. The gourmet vegan. London: Victor Gollancz Ltd. 153 p. Index. 20 cm.
• **Summary:** This unillustrated vegan cookbook makes relatively little use of soyfoods, although it does use tofu (4 recipes), miso (3), and soya milk (in Soya Pudding). The author, a nurse by profession, has won three recipe competitions. Address: Quorn, Leicestershire, England.
3350. Beddows, C.G. 1988. The old fashioned way with soya. *Food Science & Technology Today* 2(1):12-15. [6 ref]*
• **Summary:** The following soybean products are described briefly: soymilk, bean curd, tofu, tempeh, natto, sufu, miso, shoyu, and yuba. Protein yields are given for a range of plant crops versus milk and beef, e.g. soybeans 3500 kg/ha/annum versus 75 kg/ha/annum for beef. Recipes are included for miso cream cheese dip and deep fried tofu and miso soup. The marked rise in consumption of soybean products in the USA in recent years is noted. Address: Dep. of Applied Sciences, Leeds Polytechnic, Leeds LS1 3HE, England.
3351. Hu, J.; Zhang, S.; Jia, E.; Wang, Q.; Liu, S.; et al. 1988. Diet and cancer of the stomach: A case-control study in China. *International J. of Cancer* 41:331-35. *
• **Summary:** In this case-control study, consumption of miso soup or miso was associated with increased risk of stomach cancer, but the association was not significant upon multivariate analysis.
3352. Ko Swan Djien. 1988. Recollection of tempeh. *Onko Chishin* No. 25. p. 42-48. [11 ref. Eng]
• **Summary:** A brief review of the author's involvement in fundamental tempeh studies. During the late 1950s the author taught Technical Microbiology at the Bandung Inst. of Technology in Indonesia. In 1960 he was granted a sabbatical to study antibiotics and related fermentation processes at the Northern Regional Research Center (Peoria, Illinois) under Dr. Clifford W. Hesseltine. "Dr. Hesseltine's background was in conventional liquid agitated pure culture fermentation. But when Ko arrived, he had just finished his first experiments with a solid substrate fermentation process of an Asian soybean food, by studying aspects of miso fermentation with Dr. K. Shibasaki of Tohoku Univ. Dr. Hesseltine became utterly fascinated with the use of solid substrates and the application of pure mixed cultures in miso fermentation. This made him curious to know more about other non-Western fermented foods which were still unknown to many people in the Western world. During our first conversation, Dr. Hesseltine asked me cautiously, whether I was familiar with an Indonesian food which was made by fermentation of soybeans with a certain mould species. I immediately assumed that he had 'tempe' in mind. Since tempe is a regular ingredient in the Indonesian menu, it was not difficult for me to tell him about the culinary aspects of tempe. However, knowledge of the microbiological aspects was minimal, because basic background information was not yet available.

“Instead of discussing the latest developments of fermentation technology which was the purpose of my visit to the U.S.A., Dr. Hesseltine and I theorized about tempe fermentation and we became more and more fascinated by the still unknown aspects. We soon agreed that it might be more interesting to study fundamental principles of tempe fermentation during my period of practical training rather than starting a study of one of the many detailed aspects of a modern fermentation process. At that time we could not foresee that this decision was a contribution to sparking a wave of research activities with world wide interest.”

This research by Ko and Hesseltine led to the discovery that *Rhizopus oligosporus* was the principal species of mold used for traditional tempeh fermentation in Indonesia. This led to development of a pure-culture tempeh starter/inoculum. “An important aspect during these studies was the unexpected publicity given by the Indonesian press. It aroused curiosity and was a great stimulus to other universities and research institutes to study various aspects of tempe fermentation.”

In 1968 the author joined the Agricultural University, Wageningen, Netherlands, where his research showed that *R. oligosporus* does not produce aflatoxins, and actually inhibits their production. A photo shows Ir. Ko Swan Djien. Address: Bandung Inst. of Technology, Indonesia, and Agricultural Univ., Wageningen, Netherlands.

3353. Product Name: Red Shell Japanese Miso Dressing.
Manufacturer’s Name: Red Shell Food (Importer-Distributor). Made in Japan.
Manufacturer’s Address: Rowland Hts., CA 91748.
Date of Introduction: 1988.
Wt/Vol., Packaging, Price: 12 fluid oz jar retails for \$1.79.
How Stored: Shelf stable; refrigerate after opening.
New Product–Documentation: On sale at Yaohan department store in Los Angeles. 1988. Oct. 23.

3354. Sojarei Ebner-Prosl. 1988. Tofu aus der Sojarei [Tofu from the Sojarei (Leaflet)]. Baden bei Wien, Austria. 6 panels. [Ger]

• **Summary:** This full-color orange and red leaflet explains that the company makes and sells many fresh soy products, mostly tofu and tofu products, but also tempeh and soy sprouts. They sell tamari, shoyu, miso, gomashio (sesame salt), many types of vegetables, flakes, and legumes. They also have a soya recipe brochure and a tofu cookbook.

This young family-run business, founded in 1984, focuses on fresh soyfoods of the best quality—pure and natural. Sojarei tofu is described as the culinary wonder child in unpretentious clothes, but with many talents. Tofu is sold in slices, diced, or in strips. It can be pressed or pureed. There are color photos of the two owners and their wives, of tofu, and of 5 tofu dishes. Address: Augasse 2, A-2500

Baden bei Wien (near Vienna), Austria. Phone: 02252/85101.

3355. Product Name: Chick Pea Miso.
Manufacturer’s Name: South River Miso Co. Inc.
Manufacturer’s Address: South River Farm, Conway, MA 01341.
Date of Introduction: 1988.
Ingredients: In 3/92: Deep well water, organically grown brown rice and chick peas*, and unrefined sea salt. * = Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.
Wt/Vol., Packaging, Price: 1 lb plastic tub.
How Stored: Refrigerated.
New Product–Documentation: Product with Label sent by Christian Elwell. 1992. March 13. 1 lb beige plastic tub with black and brown text. “Unpasteurized. Please refrigerate. Vintage. Winter 1987.” This miso contains no soybeans. There is a statement about traditional miso making signed by Christian and Gaella Elwell, a recipe for everyday miso soup, and an illustration of a silhouette of a mother handing a bowl of soup to her son seated across the table. Letter from Christian Elwell. 1992. May 28. This product was introduced in 1988.

Talk with Christian Elwell. 1996. Sept. 7. Concerning the origins of chick pea miso. From January to April 1978 Christian and his wife, Gaella, lived and studied with Noboru Muramoto at Asunaro Eastern Studies Institute in Glenn Ellen, California. Christian recalls that Mr. Muramoto taught that miso can be made from a combination of any grain plus any beans, but he does not recall Mr. Muramoto ever making or specifically mentioning chick pea miso—but he could well have had some going there.” Mr. Muramoto did make miso with peanuts—and many other unorthodox ingredients. Christian still makes and sells his Chick Pea Miso—but American Miso Co. made this product commercially before Christian did. A macrobiotic counselor and licensed nutritionist, Lino Stanchich (who is from Yugoslavia, was a friend of Muramoto’s, and now lives in West New York, New Jersey 07093), feels that chick peas are very good for Americans because of the “doctrine of signatures,” where the chick pea is associated with the heart. This doctrine says that plant parts which appear like human organs are associated.

3356. Tsutsumi, C.; Ebine, H. 1988. Miso no eiyô seibun bunseki-hô [A method for analyzing the nutrients in miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 36(2):53-75. [9 ref. Jap]*

• **Summary:** Discusses a method for analyzing the proximate composition, minerals, vitamins, alcohol, energy content, etc. Address: 1. National Food Research Inst., Tsukuba, Ibaraki-ken, Japan 305; 2. Central Miso Research Institute, Tokyo, Japan.

3357. Yoneyama, T.; Baba, S. 1988. [Evaluation of Japanese soybean cultivars for rice-miso production. IV.]. *Research Report of the Nagano State Laboratory of Food and Technology* No. 16. p. 16-19. [3 ref. Jap]*

Address: Nagano State Lab. of Food Technology, Kurita, Nagano-shi, Japan.

3358. Anderson, Eugene N. 1988. *The food of China*. New Haven, Connecticut: Yale University Press. xvi + 313 p. Index. 24 cm. [380 ref]

• **Summary:** Contents: Preface. Acknowledgments. Chronology of food and agriculture in China. 1. The natural environment. 2. Prehistory and the dawn of civilization. 3. The crucial millennium: Chou through Han. 4. Food from the West: Medieval China. 5. Definitive shaping of the food system: Sung and the conquest dynasties. 6. Involution: Late imperial China. 7. The climax of traditional agriculture. 8. Chinese foodstuffs today. 9. Some basic cooking strategies. 10. Regions and locales. 11. Traditional medicinal values of food. 12. Food in Society. Appendix: Dinner at the Ngs.

Soybeans and soyfoods are mentioned as follows: North China is the native home of the soybean (p. 3). Soybeans seem to have been introduced to China in about 1000 B.C., but they were not popularized until the early Eastern Chou period (Ho 1975). Called, *shu*, they “seem to have come from the Jung people, northern and northeastern neighbors of the Chinese, who may have been Tungusic or Altaic, and were perhaps related to or descended from the Hungshan.” Domesticated soybeans are descended from wild soybeans (p. 29).

Fan Sheng-chih wrote an agricultural manual in the first century B.C.; it survives in extensive fragments quoted in later agricultural works. This manual mentions the “Nine Staples”: wheat, barley, millet, glutinous millet, spiked millet, soybeans, rice, hemp, and small beans (*Vigna* spp.) (p. 50).

The art of fermenting soybeans was perfected sometime in the late Chou period, or perhaps even as late as the very early Han. Thereafter, Han texts devote much space to salt-preserved soybeans, called *tou shih* (or *shih*), the *tausi* of modern Cantonese cooking. *Chiang*, fermented sauce, was made from beans, but also from meat and elm products (p. 51).

During the late Southern Sung, Wu Tzu-mu coined the famous phrase: “the things that people cannot do without every day are firewood, rice, oil, salt, soybean sauce, vinegar, and tea” (Freeman 1977, p. 151). By the Sung, *chiang* had come to refer unequivocally to soy sauce; as late as the T’ang, it would probably have been understood, at least in literary contexts, to refer to a variety of fermented foods (p. 82).

Bean curd or *tou fu* (Japanese tofu) was first mentioned in the early Sung; its invention was attributed to Liu An of the Han Dynasty, “but this is preposterous.” In fact, tofu “was invented in the late T’ang or early Sung—possibly by Taoists and/or people from the Huainan region, who then ascribed it, out of a sort of respect, to Liu An, the Taoist prince of Huainan (B.W.-C. Young, pers comm). Buddhists quickly took over the food as a good substitute for meat and for dairy foods...”

Also discusses: Vegetarian cooking (p. 66, 86, 118, 150, 196, 204, 249). Vegetarianism came to China with Buddhism during the T’ang dynasty. Fish farming (p. 103, 129). Note: Eugene Newton Anderson was born in 1941. Address: Dep. of Anthropology, Univ. of California, Riverside, CA 92521.

3359. Cost, Bruce. 1988. *Asian ingredients: Buying and cooking the staple foods of China, Japan and Southwest Asia*. New York, NY: William Morrow & Co. 333 p. Illust. Index. 26 cm. [39 ref]

• **Summary:** Soy related: Soybean sprouts and recipe (p. 86). Beans, incl. soybeans (p. 146-50). Asian “dairy” (p. 186-87): The soybean and the coconut (incl. bean curd, doufu-nao, fermented bean curd / fu-ru, molded bean curd / chou dou-fu, dried bean curd / dou-fu gan, and bean curd skin [yuba]). Soybean milk.

Soybean sauces, condiments and pastes (p. 195-210): Salted and fermented black beans with recipes for “Roast chicken with black beans stuffed under the skin,” and “Soft-shell crabs with ginger, lemon, and black beans” (“Fermented black beans, often flavored with bits of ginger and sometimes orange peel, are usually sold in 8-ounce plastic bags.” Acceptable brands: Mee Chun or Koon Chun Sauce Factory. “Earthier and probably more classic are the Yang Jiang Preserved Beans (with ginger) from Kwangtung, China), bean sauce (other names: Yellow bean sauce, brown beans sauce, bean paste, jiang; two types are with the beans whole or ground), hot bean sauce / paste with recipe, hoisin sauce, sweet bean sauce (made with soybeans, Taiwan), soy sauce (Chinese, Japanese, tamari; Highly recommended light soy sauce: Pearl River Bridge. Highly recommended dark: Pearl River Bridge Mushroom Soy, flavored with straw mushrooms), Java’s ketjap and other soy sauces miso with recipe, yellow miso (*Shinshu miso*), white miso (*shiro miso*, *Kyoto shiro miso*, sweet white miso), red miso (*aka miso*), Hatcho miso [soybean miso], barley miso (*mugi miso*), fermented bean curd (white or red; also called preserved bean curd, bean cheese, doufu-ru or fu-ru {Mandarin}, fu yu {Cantonese}) with two recipes).

Concerning ketjap (p. 206): Tomato ketchup, although it may seem to be of Asian origin, may or may not come from a family of Asian pickled products. But the word “ketchup” is clearly of Asian origin. [Note: The modern Indonesian word for soy sauce is *kecap* / *ketjap* / *kechap*.] “It comes

from the Malay *kechap*, which apparently derives from the *kôe-chiap* of a southern Chinese dialect (Amoy); both of these refer to the kind of briny liquid preserves that include fish and soy sauces." Throughout most of Southeast Asia, fish sauces are the standard condiment, in Indonesia (incl. Java) soy sauce is more widely used. Sweet Indonesian soy sauce (*ketjap manis*), which is very widely used, is traditionally sweetened with palm syrup and seasoned with garlic, star anise, salam leaves, and galangal.

Also discusses: Seaweed (p. 165-70): Kelp (*Laminaria*), laver (*Porphyra*), wakame, dashi, hair vegetable / black moss / hairlike vegetable (China; *Gracilaria verrucosa*), agar-agar. Monosodium glutamate (p. 247)

Bruce Cost was born in 1945. A photo and brief biography appears on the inside rear dust jacket. Address: [San Francisco, California].

3360. Goetz, Rolf; Queissert, Peter. 1988. Einfach anders essen: Unser Naturkost-Kochbuch [Simply eat differently: Our natural-foods cookbook]. Schaafheim, West Germany: Pala-Verlag. 156 p. Index. [10 ref. Ger]

• **Summary:** Contains recipes using miso, seitan, tamari, tempeh, and tofu. Address: Germany.

3361. Hesseltine, C.W. 1988. Transfer of food fermentation technology. In: M.F. Moyal, ed. 1988. Diet and Life Style. New Technology. John Libbey Eurotext Ltd. See p. 159-65. [10 ref]

• **Summary:** Describes examples of successful transfer of new technology, especially with Oriental fermented foods, such as tempeh, miso, and sufu. Address: 5407 Isabell, Peoria, Illinois 61614.

3362. Kaysing, Bill. 1988. Bill Kaysing's freedom encyclopedia. Instant Improvement Inc., 1160 Park Ave., New York, NY 10128. 295 p. See p. 87-94. [1 soy ref]

• **Summary:** The dust jacket of this book states, under the title: "Freedom from junk food. Freedom from supermarket rip-offs. Freedom from slavery to doctors and landlords. Freedom from food-induced sickness and premature aging." The book has sold very well. In the chapter titled "Eating better for less," there is a section on soybeans (p. 87-94). It discusses cooked soybeans, soy grits, soy flour, soy protein (isolate), soy sprouts, soy coffee, miso, Tofutti, soy milk, and tofu, with the greatest praise reserved for tofu. A number of recipes are included. On page 94, two panels from the Soyfoods Center (Lafayette, California) catalog of publications are reproduced. They describe the center and the many virtues of soyfoods. Below is a caption: "This organization is bringing a new era in good food to the United States. Write for their handsome brochure, listing books and other data."

3363. Kurz, Marey. 1988. Soja in der Vollwertkueche: Rat und Rezept-Ideen zum Kochen und Backen mit allen Soja-Varianten: Bohnen, Mehl, Milch, Sauce, Tofu und Miso. Das erste komplette Soja-Kochbuch [Soya in whole-foods cookery: Advice and recipe ideas for cooking and baking with all the varieties of soya: Beans, flour, milk, sauce, tofu and miso. The first complete soya cookbook]. Munich, West Germany: Graefe und Unzer GmbH. 102 p. Illust. Index. 20 cm. [11 ref. Ger]

• **Summary:** The copyright (but not the title page) page says that this is a 3rd edition, however the ISBN is unchanged from the 1984 edition. Address: West Germany.

3364. Lautensach, Hermann; Dege, Katherine; Dege, Eckhart. 1988. Korea: A geography based on the author's travels and literature. Translated from the German. Supplemented with a thoroughly revised and expanded index. And edited by Katherine and Eckhart Dege. Berlin, Heidelberg, New York, London, Paris, Tokyo: Springer-Verlag. xvii + 598 p. See p. 160, 180-81. Illust. Maps (some color). 26 cm. [936* ref]

• **Summary:** With 42 photographs, 95 diagrams, 46 tables and a [larger color] map." This classic was first published 40 years ago (a few months before the end of World War II) and the field work was done 50 years ago, when Japan still ruled Korea and all place names were Japanese; these names have all been updated.

Chapter 6, titled "The anthropogeographical character of ancient Korea" (p. 149+) contains extensive information about agriculture and food. Page 160: In wealthier sites, the farm buildings enclose a courtyard, to which an entrance gate gives access (Fig. 37c, p. 158). Some enclosures are so complete that a square courtyard results. "In some corner or other of the courtyard stand the huge brown earthenware jars, in which soy sauce (Jap. *shoyu*, Kor. *kanjang*) is prepared and stored."

Page 180: In East Asia, after cereal grains, pulses / legumes are the next most important crop. In Korea, by far the most important is the soybean (Kor. *k'ong*), which makes few demands on the soil. Korea's climate is ideal for soybeans (Tanaka 1931, p. 18); it is even better than Manchuria's climate, because of the large amount of precipitation during the summer. Today, soybeans are an indispensable part of the various dry-field crop rotations. After planting of the paddies has finished, soybeans are planted on the ridges too; there they grow extremely well without being fertilized. Soybeans are grown throughout Korea, but least in the Kaema upland because of the warmth they require. In northern Korea, on dry fields, they are planted between the end of March and beginning of May. Toward the south, planting is delayed until the end of June. They are generally harvested in October, except in Chejudo, where they are not harvested until early November. Soybeans are the crop that is left standing the longest, and

they are not harvested until their leaves have turned brown and started to fall.

Soybeans are used as a very nutritious food for both humans and horses. Also, cooked soybeans are used as a fertilizer for the rice paddies. "Above all, though, the hot brown soy sauce, which is never lacking on any Korean or Japanese table, is made of them, using salt and pepper and a process of fermentation. Bean curd (Kor. *tubu*, Jap. *tofu*) and soybean paste (Kor. *toenjang*, Jap. *miso*) are also made of them."

Adzuki beans, cotton and hemp are discussed on p. 181. Hermann Lautensach lived 1886-1971. This book was first published in 1945 in German. Address: Prof., Dr.

3365. Leneman, Leah. 1988. *Soya foods cookery*. London and New York: Routledge & Kegan Paul. ix + 145 p. Illust. Index. 20 cm.

• **Summary:** Contents: Introduction. Recipes—1. Soya milk: Soya milk, soya yogurt, soft cheese [made from soya yogurt], and mayonnaise, soya milk skin (yuba). 2. Tofu: Tofu, frozen and dried-frozen tofu, smoked tofu. 3. Tempeh. 4. Miso. 5. Combi-dishes: Tofu and miso, tempeh and tofu.

An introduction to the subject, with more than 100 recipes. Almost half the book is devoted to tofu and tofu recipes. The author, born in the USA, has lived in Britain for more than 20 years. She was once assistant editor of *The Vegetarian*, and also worked at Cranks Restaurant (on Marshall St. in London W1). Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

3366. Philippine Council for Agriculture, Forestry and Natural Resources Research and Development. 1988. *Mga Gamit ng UTAW Bilang Pagkain* [The uses of soybeans as food]. Diliman, Quezon City, Philippines. 46 p. Illust. DA/ATI-PCARRD Farm Primer No. 3. Series of 1988. AC-R4-P-S-V-2-88. [3 ref. Tag]

• **Summary:** Part 1 (p. 1-20) of this Tagalog-language booklet, which contains many illustrations (line drawings), is titled "Soybean Products." It describes how to make basic soyfoods, such as soybean ketchup (*Ketsup na utaw*), soy coffee (*Kapeng utaw*), pastillas, soymilk curds (taho), tokwa (tofu), polboron (a confection usually made with powdered milk, but in this case using soybean powder), soymilk, soy flour (harinang utaw; note that utaw is word for soybean in Tagalog), tao-si (soy nuggets), soy sauce (toyo), and miso.

Part 2 (p. 25-45) titled "Soybean Recipes," includes chicken with miso, tofu with miso, tofu with mushroom soup, soymilk custard, fried meat (pork; Baboy), fried meat with miso, bamboo shoots with miso, baguio beans with miso, fried tofu with sweet & sour soy sauce, miso with noodle soup, chicken soup with tofu, and fried tofu with vegetable sauce. Address: Philippines.

3367. Quigley, Delia; Pitchford, Polly. 1988. *Starting over: Learning to cook with natural foods*. Summertown, Tennessee: The Book Publishing Co. 144 p. Illust. Index. 23 x 15 cm.

• **Summary:** The index to this natural foods, vegetarian (but not vegan) cookbook contains listings for 15 tofu recipes, 7 miso recipes, and 6 tempeh recipes, plus an incorrect definition of "tamari." The book uses a round yin-yang (*t'ai chi*) symbol to mark recipes that "qualify as macrobiotic." The authors have a Florida television show named "The Granary Gourmet." Address: Florida.

3368. Wood, Rebecca T. 1988. *The whole foods encyclopedia: A shopper's guide*. New York, NY: Prentice Hall Press. xv + 218 p. [200* ref]

• **Summary:** This book is mistitled. It should be titled "Rebecca Wood's Macrobiotic Views on Natural Foods." The parts on quinoa, teff, amaranth, and many macrobiotic foods provide good information. There is extensive information on soyfoods, all from a macrobiotic viewpoint, but with many errors or undocumented controversial assertions never seen before in the literature, such as the following: "Cold Tofu. Foods that are cooling, like tofu, tend to reduce the fire in the lower organs. This explains why tofu was eaten by Buddhist monks to abate their sexual desires. This is not a prescription against tofu. Well-cooked tofu is less cooling. For optimum health, we need a balance of warming as well as cooling foods. However, if you are feeling cold, or if it is a cold day, or if you have strenuous activities planned, then you may opt for salmon over tofu."

Foods mentioned are whole soybeans (yellow and black), fresh green soybeans, miso, natto, tofu, tempeh, TVP (textured soy flour), soy cheeses and ice creams, soy protein isolate, soymilk, soy nuts, soy oil, soy sauce, and soy yogurt.

Note: This is the earliest English-language document seen (Feb. 2005) that contains the term "cooling food." Address: P.O. Box 30, Crestone, Colorado 81131. Phone: 303 (or 719) -256-4939.

3369. *Theses on soybeans and soyfoods: Dissertation Abstracts (Database search report)*. 1989. 234 p. Jan. 20. 28 cm. Unpublished manuscript. [1106 ref]

• **Summary:** The Dissertation Abstracts database contains virtually every American PhD dissertation accepted at an accredited institution since 1861. A search yielded 1,106 theses on soybeans and soyfoods not including records with the terms pathogen*, Disease*, weeds, or insect* in the title or abstract. * = truncated term.

It contained the following number of theses on soyfoods: Soymilk 9-14, tofu 6, tempeh 6, miso 4, soy sauce 3, and natto 2.

The most valuable records for us are in the subject categories Food Science & Technology; Health Sciences,

Nutrition; and Economics, Agricultural. Other subject categories include: Agriculture (Agronomy, Animal Culture & Nutrition, General, Plant Culture, Plant Physiology); Biochemistry; Botany; Chemistry (Agricultural and Biological, Analytical); Engineering, Chemical; Entomology.

A count of the records in which we were interested by state where the thesis was written shows the following: Illinois 128, Iowa 68, Indiana 37, New York 30, Missouri 28, Michigan 26, Minnesota 25, and Ohio 17.

3370. Belleme, John. 1989. The imperial sauce: Rich, dark, and subtle, Japan's traditionally made shoyu is an outstanding and versatile seasoning. *East West*. Jan. p. 72-77. [2 ref]

• **Summary:** Westerners indiscriminately sprinkle soy sauce on everything from beef to popcorn. Almost half of the 60 million dollars spent annually by Americans on soy sauce goes for a product that is not even fermented. Kame, La Choy, and Chun King brands for example, are the result of a 1-day chemical process. The ingredients are soy extract, alcohol, sugar, salt, food coloring, and preservatives. Nearly all other soy sauce sold in the U.S.—such as Kikkoman, Yamasa, Marukin, Higashi-Marukin, and Maruten—is made from chemically processed soy meal by a high-tech, accelerated method and temperature-controlled fermentation, and it usually contains sodium benzoate as a preservative.

Traditional shoyu products reach U.S. consumers in a roundabout way. For example, Muso buys traditional shoyu from the Marushima Brewing Co. of Shoda Shima, Japan, and exports it to Eden Foods, which sells it to American consumers under the Eden label. Ohsawa Japan buys from the Yamaki Brewing Co. of Tokyo, and sells to Ohsawa America, which bottles and sells it under the Lima label. The largest producer of traditional shoyu is the Sendai Shoyu and Miso Co. of Sendai, Japan. Sendai makes Johsen Shoyu, which is exported by Mitoku and is bottled in the U.S. under different brand names, including Westbrae, Tree of Life, Emperor's Kitchen, Mitoku-Johsen, and Mitoku Macrobiotic.

The author notes that, "My 8 years of miso-making in Japan and at American Miso Co. have taught me that miso aged in wood is superior to that aged in plastic... although Sendai shoyu and Miso Company started making high tech shoyu in 1950, Sasaki insisted that his company also continue to make traditional shoyu." Although at times Sasaki's pet project seemed a financial disaster, in 1970 he received a phone call from a Tokyo businessman, Akiyoshi Kazama. Kazama, a friend of macrobiotic teacher Michio Kushi, was looking for a supply of traditional shoyu for Kushi's students. When Sasaki showed Kazama his 12 2,000 gallon cedar casks of naturally aging whole soybean shoyu a few days later, Kazama knew his search was over.

Kazama shipped Johsen Shoyu to the U.S. in 5 gallon wooden buckets at first.

Jubei Sasaki has passed away, but his 12 casks of traditional shoyu have grown to 100 and his son continues the whole soybean shoyu tradition.

4 recipes are given. Address: P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

3371. Sojarei Ebner-Prosl. 1989. Preisliste [Price list]. Augasse 2, A-2500 Baden bei Wien, Austria. 10 p. Manufacturer's catalog. [Ger]

• **Summary:** The company has two catalog/price lists: one (green) for food processors and one (yellow) for retail stores. Products made by the company have been marked by the author with an "S." In the front of each catalog is an organic certificate. The retail catalog contains 20 fresh products, 3 books, and 30 non-fresh products. Fresh products made by the company include Tofu Natur, Tofu Mariniert, Tofu Geräuchert, Tofu Pastete Siddhartha, Tofu Pastete Toscana, Tofu-Burger, Soja-Getreide-Laibchen, Gruenkern Laibchen, Dinkel Laibchen, Reis-Laibchen, Weizengluten Laibchen, Weizengluten, Badener Bratwuerstchen, Badener Grillwuerstchen, Brotaufstrich "Rusticana", Brotaufstrich "Holzknecht." Fresh products sold but not made by the company include soy tempeh, marinated tempeh, and soy sprouts. The company sells 3 recipe books: (1) Their own recipe book *Wichtig für Ernährungsbewusste* (Important for understanding of nutrition); (2) *Tofu: Essen mit Zukunft* (Tofu: Eating with the future) by Brigitte Vogenreiter and Clemens Kuby, and (3) *Schlank mit Tofu* (Slim with tofu; 117 recipes) by A.W. Dänzer.

The company also sells many non-fresh products including yellow soybeans (organically grown), soya flakes (*Sojaflocken*, not defatted), whole soy flour, tamari, shoyu, barley miso, Hatcho miso, brown rice miso, soba (buckwheat) miso, nigari, Bonsoy soyadrink (natural and cacao), Pinoccio Soybean coffee, and soynuts.

In the catalog for food processors, for example, the regular tofu, marinated tofu, and smoked tofu are each sold in 1 kg, 30 kg, 60 kg, 100 kg, and 200 kg amounts. Address: Baden (near Vienna), Austria.

3372. Wood, Rebecca Theurer. 1989. Quinoa the supergrain. New York, NY: Kodansha International USA/Ltd. 190 p. [51 ref]

• **Summary:** Quinoa (pronounced KEEN-wa; scientific name *Chenopodium quinoa* Willd.) originated in the Peruvian Andes. The protein content of quinoa seeds ranges from 7.5% to 22.1%. The two men most responsible for creating a quinoa market in the USA are Stephen Gorad and Don McKinley of the Quinoa Corporation in Boulder, Colorado.

Note: *Webster's Dictionary* defines quinoa (derived from Spanish, via the Quechua *quinua*; the term was first used in 1625) as "a pigweed (*Chenopodium quinoa*) of the high Andes whose seeds are ground and widely used as food in Peru."

Chapter 8, "All about cooking quinoa," contains many recipes. A number of these use soyfoods, especially natural soy sauce or tamari (p. 65), tofu (p. 80, 84, 110), miso (p. 98), soymilk (p. 106, 164), tempeh (p. 125). Address: Crestone, Colorado.

3373. Inoue, Kojiro; Sugarman, Carole. 1989. I made at least 1,000 pieces of sushi a day. Now I have sushi elbow. *Washington Post*. Feb. 26. p. 122.

• **Summary:** The moving and humorous story of Mr. Inoue, age 45, (as skillfully told by Carole Sugarman), who survived the ten-year process of becoming a sushi chef in Japan, then came to America determined to introduce Americans to sushi and raw fish.

After working in sushi restaurants in Japan for 8 years (and getting married) he heard that Japanese restaurants were getting popular in the United States. In 1971 he came to the USA to run a small (5-stool) sushi bar at Sakura Palace in Silver Spring, Maryland. Sushi wasn't yet popular in America and the customers were surprised that anyone would eat raw fish, squid, octopus, eel, etc. They were also scared to try it themselves. Yet ten months later Mr. Inoue asked his wife and young child to join him. He had a hard time finding good quality, fresh fish. Americans told him, "A fish is a fish." Sometimes he brought frozen fish from Japan or California. After 5 years the owner of his restaurant retired and he now wanted to start and own a restaurant for himself. He started as a sandwich shop, then remodeled. It was hard. He had to explain what sushi was and how to eat to potential customers. Many customers asked for a knife and fork; some still do. He explained about wasabi and soy sauce.

In 1977, the McGovern Report was released. It said that 500,000 Americans died of heart attacks and that Japanese food was low in cholesterol. Because of that, all Japanese restaurants became popular.

Today sushi has become part of American food culture. His customers are now 80% Americans and 20% Japanese. Fresh fish is easy to buy. Mr. Inoue, who was now making 1,000 pieces of sushi day, developed sushi elbow—just like tennis elbow. He had a cast on his elbow for one year.

"Tokyo people love *natto* (fermented soybeans) or miso soup. I eat bread. American bread. Sometimes cereal." Today Americanized sushi is all over Japan. He is still married, but his wife lives in Japan with his three kids. His kids eat American hamburgers, Kentucky Fried Chicken and pizzas in Japan. He operates a sushi restaurant in Washington, DC.

3374. Erewhon. 1989. Erewhon... Macrobiotic foods you can recommend with confidence (Ad). *Natural Foods Merchandiser*. Feb. p. 25.

• **Summary:** This color ad (7.5 by 13 inches) shows colorful packages of five types of Erewhon products: Misos, seaweeds, ramen, rice crackers, and sweets. In the center is a gold plaque that reads: "Recommended by Michio Kushi. Macrobiotic quality." This same endorsement is in the upper left corner of each package. Erewhon now has four 4 varieties of miso under its brand: Hacho (note new correct spelling), genmai, kome, and mugi. Note that all still use the esoteric Japanese names. Plastic bag packages are colorful and attractive. Slogan at the bottom of the ad: "Our great taste comes naturally." Address: [Massachusetts].

3375. **Product Name:** Miso Master Miso [Brown Rice, or Sweet Barley].

Manufacturer's Name: Great Eastern Sun (Marketer). Made in North Carolina by American Miso Co.

Manufacturer's Address: 92 McIntosh Rd., Asheville, NC 28806.

Date of Introduction: 1989. February.

New Product—Documentation: *Natural Foods Merchandiser*. 1989. Feb. p. 14.

3376. *Natural Foods Merchandiser*. 1989. Soy inspirations: With plenty of new products on the horizon, retailers should begin to plan now for a sizzling Soyfoods Month in April. Feb. p. 12-13.

• **Summary:** Sales of soyfoods (tofu, soymilk, soy sauce, miso, other such as entrees, cheese, ice creams, meat analogs, etc.) are estimated to be \$638 million for 1987 and \$682 million for 1988, and projected at \$754 million for 1990. Discusses Corporate Culinary Carnival soyfoods promotions by Judy Brown, and a soyfoods cooking contest by Mike Shields of Food For Thought in Long Island, New York. Winners received their weight in tofu. The unique idea made it into the pages of *USA Today*. Among the 30 entrants, winners were selected in 3 categories: entree, dessert, and beverage.

3377. **Product Name:** Paul's New and Original Brown Rice Tofu Sandwich [Less Spread, More Veg].

Manufacturer's Name: Paul's Organic Food Works.

Manufacturer's Address: P.O. Box 431, Fairfax, CA 94930. Phone: 415-453-2360.

Date of Introduction: 1989. February.

Ingredients: Short grain brown rice*, spring water, nigari tofu*, sprouted wheat tortilla*, toasted tahini, barley miso*, green onions* or leeks*, carrots*, seasonal green*, cabbage, lettuce*, clover sprouts*, shoyu*, sesame oil*, garlic*, ginger*, apple cider vinegar, unrefined sea salt, spices. * = Organically grown per Cal. Health Code Sec. 26569.11.

Wt/Vol., Packaging, Price: 12 oz.

How Stored: Refrigerated.

New Product–Documentation: Label sent by Paul Duchesne. 1989 Aug. 11. 5.5 by 2 inches. Black on green paper. “12 happy ounces. For the best taste, remove from refrigeration one hour before eating. To eat: Open bag–Tilt sandwich in bag–fold bag down.” Illustration of animated product, with smiling face on tortilla, arms, and legs. On the back of each is a statement: “Concentrate on the issues, not the individuals...” The statement is changed weekly. Talk with Paul Duchesne. 1989. Aug. 16. Introduced in Feb. 1989.

3378. Kitamura, Yasunori. 1989. Re: Shinshu-Miso Research Institute. Letter to William Shurtleff at Soyfoods Center, March 22–in reply to inquiry. 1 p. [Eng]

• **Summary:** The Institute was founded in May 1959. Its annual report, initially titled *Reports of the Shinshu-Miso Research Institute* but now titled *Report of the Shinshu-Miso Research Institute (Shinshu-Miso Kenkyusho Kenkyu Hokoku)* was first published in 1960. It is published in March each year, and in 1987 it started to include English abstracts for most of the articles. The 1989 issue is number 30. A 1-year subscription sent by surface mail costs US\$8.00. A former director of the Institute, Dr. Tsutomu Mochizuki, retired in 1982. Address: Shinshu Miso Kenkyusho, 469-6 Nakagoshi, Nagano-shi 380, Japan. Phone: 0262-28-1221.

3379. Akwarius Almere. 1989. Akwarius prijs en bestelboek: Natuurvoedingsprodukten, Januari-Februari-Maart [Catalog and price list: Natural food products, January-March]. P.O. Box 50070, 1305 AL Almere, The Netherlands. 77 p. [Dut]

• **Summary:** For details, see entry for the April-June 1989 catalog. Address: Almere, Netherlands. Phone: 03240-20800.

3380. **Product Name:** [Miso].

Foreign Name: Miso.

Manufacturer’s Name: Alimentos de Oriente y Occidente.

Manufacturer’s Address: Apartado Aéreo 57011, Santa Fe de Bogota 2, Colombia. Phone: 674 1258.

Date of Introduction: 1989. March.

New Product–Documentation: Letter from Frederic Saussaye, Nelson and Eunice Ortiz, and Juan Feo. Castro. 1992. Feb. 27. Since 1989 they have been preparing processed soyfoods such as miso, soya milk and tofu as other natural products like tahini and cereals. They are a small company with 5 members in a farm in the tropical area of Apulo near Bogotá. They are promoting the consumption of soya in the capital (Bogota) and also on the land. They are hoping to increase their production shortly and to expand their commercial trade inside and outside of Colombia. Shortly, they would like to start growing their

own soybeans on their farm, which is about 1,000 meters above sea level on tropical land, with clay soil having a pH of 7.5.

Follow-up letter of 28 May. They have heard of two people doing (making?) miso in Bogota (one is Mr. Chang) and Medellin, but have had no contact with them. Nelson and Eunice are giving courses about tofu and soya milk in their area, but presently their only commercial product is miso. They have six 200-kg barrels of miso now fermenting or done. It seems people from other villages are interested. They hope people will plant more soybeans.

Leaflet sent by Nelson Ortiz. 1992. July. “Miso. Proteina completa de soya.” 6 panels. Brown on tan. Description and recipes.

3381. Colbin, Annemarie. 1989. *The natural gourmet: Delicious recipes for healthy, balanced eating*. New York, NY: Ballantine Books. x + 325 p. March. Illust. by Laura Hartman Maestro. Index. 24 cm. [16 ref]

• **Summary:** Pat McNees of *The Washington Post* has called Annemarie “The Julia Child of natural foods cooking.” Her photo, in color, graces the cover. The book incorporates “The Five Phases of Food” theory from China, based on a book by John W. (Jack) Garvey (1983), as an aid to meal balancing. Below each recipe name is given the major phase and minor phase that it represents. Soybeans, tofu, tempeh (as well as brown or white rice and mochi) are metal (declining state), while black soybeans are water (maximum rest before growth).

Page 27 notes: “You will not find any recipes in this book with whole soybeans; I find their taste too unpleasant, and tend to believe some research that indicates they may contain oxalates and other elements that prevent nutrient absorption. Soybean products such as miso, shoyu (the natural soy sauce made with wheat), tamari (a wheat-free natural soy sauce), tofu, and tempeh, on the other hand, are delicious; tofu and tempeh are good protein sources when combined with the grains. You will also find the condiments miso and shoyu or tamari used in many of the recipes.”

Soy-related recipes include: Black and white aioli dip (with tofu, p. 49; Note: “Aioli” is derived from the French words for “garlic” + “oil.” Aioli sauce is made from crushed garlic, egg yolks, olive oil, and lemon juice). Tofu and spinach turnovers (Spanakopitas, p. 66-67). Bean-of-the-Orient miso soup (p. 74-75). Shoyu consommé with enoki mushrooms (p. 77). Collard miso soup (p. 78-79). Carrot-beet soup with tofu sour cream (p. 83-84). Tofu sour cream (p. 84-85). Baked [kidney] beans with miso and apple butter (p. 136). Vegetable-tofu sauté (p. 154-55). Tofu mushroom stroganoff with bulgur (p. 155). Tofu sour cream (p. 156). Broccoli-tofu quiche with wild mushrooms (p. 157-58). Open herbed tofu sandwiches (p. 158-59). Tempeh with shallots and white wine (p. 160-61). Tempeh in sweet and sour sauce (p. 161-62). Tempeh with creamy horseradish

sauce (p. 163). Stir-fried bak choy with marinated tofu (p. 169-71). Green peppers with miso (p. 182-83). Spinach-nori rolls with tofu and wild mushrooms (p. 186-87). Green salad with miso-coriander dressing (p. 203). Red and white cabbage salad with miso-onion dressing (p. 208). Radish-watercress salad with soy-sesame dressing (p. 209; with ½ tablespoon black sesame seeds and ¼ cup toasted sesame oil). Salad of wilted collard greens with yellow peppers and white miso dressing (p. 210). Spiced glazed pears with tofu cream (p. 271-72). White miso and orange dressing (p. 285).

Note: This is not a vegetarian cookbook. There is a chapter of fish recipes, and other recipes for the use of alcoholic beverages/seasonings (wine, mirin). Address: Founder and director, Natural Gourmet Cookery School / Inst. for Food and Health, 365 West End Ave., New York City, NY 10024.

3382. GEM Cultures. 1989. Catalog [Mail order]. 30301 Sherwood Rd., Fort Bragg, CA 95437. 4 p. March. [4 ref]
 • **Summary:** Contents: 1. Powdered cultures for soycrafters: Powdered starter cultures for tempeh, miso, amazake, shoyu, and tamari. In home and commercial sizes. Rice koji. 2. Cookbooks with culture (lists 4 books). 3. Coagulants for curdling tofu: Natural nigari or Terra Alba calcium sulfate in 1 lb or 5 lb bags. 3. Self renewing cultures: Viili, sourdough, kefir, miso. 4. Sea vegetables from the Mendocino Sea Vegetable Co. 5. Recyclables: Cheese cloth, super sealers (lids).

“We at GEM Cultures are a husband and wife team, Gordon & Betty, with between us 37 years of professional experience in culturing microorganisms and teaching people about them. In 1980 we set up GEM cultures with the goal of providing dependable, low cost cultures and related items for the growing number of people who wish to have a hand in creating a healthier diet through cultured foods.”
 Address: Fort Bragg, California. Phone: 707-964-2922.

3383. Harayama, Fuminori; Yasuhira, Hitomi. 1989. *Aspergillus-zoku to Rhizopus-zoku no kakushu kôso kassei no hikaku* [Comparison between several hydrolytic enzyme activities of the genus *Aspergillus* and those of *Rhizopus*]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 100. [Jap]
 Address: Shinshu-Miso Research Inst., 469-6 Nakagoshi, Nagano-shi, Nagano-ken 380, Japan.

3384. Hondo, Satoshi; Yasuhira, Hitomi. 1989. Miso no jukusei ni oyobosu ondo to shokuen nôdo no eikyô [Studies on coloring of miso. I. Effect of temperature and salt concentration on miso fermentation]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 74-81. [19 ref. Jap]

Address: The Shinshu-Miso Research Inst., 469-6 Nakagoshi, Nagano City, Japan 380.

3385. Hondo, Satoshi; Yasuhira, Hitomi. 1989. Miso jukusei-chû no chakushoku to seibun no kankei [Studies on coloring of miso. II. Relation between coloring and components during miso fermentation]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 82-85. [8 ref. Jap]
 Address: The Shinshu-Miso Research Inst., 469-6 Nakagoshi, Nagano City, Japan 380.

3386. Imai, Manabu; Nakamura, Masaaki; Takeda, Shigeru; Ito, Kimio; Sode, Akio; Yasuhira, Hitomi. 1989. Chakushoku o yokusei suru kôen-sei nyûsan-kin no jitsuyôka shiken [Application test of decoloring halophilic *Pediococcus*]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 18-21. [7 ref. Jap; eng]
 Address: Nagano, Japan.

3387. Ito, Kimio; Nakamura, Masaaki; Imai, Manabu; Takeda, Shigeru; Sode, Akio; Yasuhira, Hitomi. 1989. Kokyû kesson kôbo *Zygosaccharomyces rouxii* Y-72 no jitsuyôka shiken [Application test of respiratory deficient yeast, *Zygosaccharomyces rouxii* Y-72 condition of mass culture]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 22-28. [5 ref. Jap; eng]
 Address: Nagano, Japan.

3388. Kitamura, Yasunori; Aoki, Y.; Yokota, Y.; et al. 1989. Shihan miso no bunseki kekka ni tsuite [Analytical results of miso on the market]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 43-63. [5 ref. Jap; eng]
 • **Summary:** The 26th study meeting to evaluate commercial miso was held. 233 samples of miso were studied 131 samples were analyzed for physicochemical characteristics. Salt concentration averaged 11.9% and total sugar 18.0%. Miso with high levels of lactic acid was preferred. Address: Nagano, Japan.

3389. **Product Name:** [Taifun Sweet White Miso].
Foreign Name: Weisses Miso.
Manufacturer's Name: Life Food.
Manufacturer's Address: Stuehlinger Strasse 9, D-7800 Freiburg, West Germany. Phone: 0761/50 61 55.
Date of Introduction: 1989. March.
Ingredients: Rice, soybeans, salt, water.
How Stored: Refrigerated.
New Product-Documentation: Letter from Anthony Marrese written in on the company's Price List for Restaurants.

3390. Nakamura, Masaaki; Imai, M.; Yasuhira, H. 1989. Karubon san bunseki kei ni yoru miso chû no yûkisan bunseki ni tsuite [Analysis of organic acids in miso using carboxylic acid analyzer]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 68-73. [14 ref. Jap; eng]
Address: Nagano, Japan.
3391. Osawa, Yoshiaki; Yasuhira, Hitomi. 1989. Pentoosu hakkô-sei nyûsan-kin no sentaku [Selection of pentose fermentable halophilic *Pediococci*]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 14-17. [13 ref. Jap; eng]
Address: Nagano, Japan.
3392. Sato, Masashi; Yasuhira, Hitomi. 1989. Kome no seihaku budomari to kôji, miso no hinshitsu [The effect of polishing rate of rice on the quality of koji and miso]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 1-2. [Jap; eng]
• **Summary:** Unpolished rice koji had the least amylase activity. Koji from rice polished to 66% had the least protease activity. Miso from 90% polished rice was preferred, whereas that made from 66% polished rice with the hulls/bran added back was disliked.
3393. Sato, Masashi; Yasuhira, Hitomi. 1989. Hasaimai? (Tayôto riyômai henkei kakôhin) no ryûdo to kôji, miso no hinshitsu [The effect of grain/particle size of crushed rice on the quality of koji and miso]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 3-6. [Jap; eng]
• **Summary:** The particle size of crushed rice was found to have a negligible effect on the sensory properties of koji and miso.
3394. Sode, Akio; Nakamura, Masaaki; Takeda, Shigeru; Ito, Kimio; Imai, Manabu; Yasuhira, Hitomi. 1989. Miso no burendo kôka [Effects of blending miso]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 7-13. [2 ref. Jap; eng]
• **Summary:** Misos made with various levels of koji and sodium chloride (salt) were mixed in varying proportions for several periods of time. The final products were evaluated for sensory quality.
3395. Takeda, Shigeru; Imai, Manabu; Yasuhira, Hitomi. 1989. Candida-zoku kôbo o riyô shita miso no kôki [Flavor of miso fermented by genus *Candida*]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 29-32. [3 ref. Jap; eng]
• **Summary:** Miso was produced by 8 strains of *Candida* and by *Zygosaccharomyces rouxii* Y7 (control). Flavor was studied by sensory evaluation. Address: Nagano, Japan.
3396. Takeda, Shigeru; Imai, Manabu; Yasuhira, Hitomi. 1989. Candida-zoku kôbo no bôyû? shiken [Antiswelling of miso fermented by *Candida* sp.]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 64-67. [5 ref. Jap; eng]
• **Summary:** The amount of extra ethanol required to prevent miso swelling (because of gas production) was lower for miso produced by the yeast *Candida etchellsii* S7-1 than for that produced by the yeast *Zygosaccharomyces rouxii*. Address: Nagano, Japan.
3397. Yasuhira, Hitomi. 1989. Atarashii taipu no miso [New types of miso]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 86-93. [28 ref. Jap]
Address: Nagano, Japan.
3398. Yokota, Yoshiko; Yasuhira, Hitomi. 1989. Miso bunseki e no kinsekigai bunkôhō no riyō [Application of near-infrared reflectance analysis in miso]. *Shinshu Miso Kenkyusho Kenkyu Hokoku (Report of the Shinshu-Miso Research Inst.)* No. 30. p. 33-42. [10 ref. Jap; eng]
• **Summary:** Near-IR reflectance analysis was applied to the detection of the physicochemical properties of miso. Sample temperature had little effect on the accuracy of the analysis. Moisture, sodium chloride, total nitrogen, lipid, ash, total sugar, and reducing sugar concentration of miso could be adequately measured by this procedure. Address: Nagano, Japan.
3399. Brown, Judy; Bates, Dorothy R. 1989. Judy Brown's guide to natural foods cooking. Summertown, Tennessee: The Book Publishing Co. 160 p. Index. With 8 pages of color photos. 23 cm.
• **Summary:** This natural foods, vegan cookbook, which does not require the use of dairy products or eggs, includes more than 200 recipes, many of which contain soyfoods. In the chapter titled "The Natural Foods Pantry" is a sub-chapter titled "Soy Foods," which gives brief introductions to tofu, tempeh, miso, soy milk, soy cheeses, soy yogurt, soy flour, and soy pulp or okara. There are also sub-chapters on sea vegetables, sprouts (including soy sprouts), organic foods, macrobiotics (which is "heavily emphasized in this book"), more natural foods ingredients (which, under soy sauce, discusses the differences between shoyu and tamari).
The number of recipes featuring various soyfoods are: Tofu (15), tempeh (5), miso (4), soymilk (1), shoyu (1), and okara (1; soysage).
The author, a specialist in consumer education, presently organizes culinary carnivals and natural foods tasting fairs. She has written extensively on natural foods and holds a Master's degree in Consumer Economics from the Univ. of

Maryland. She is president of Judy Brown Enterprises, a public relations company for natural foods products. Address: 9 Dovetree Court, Indian Head, Maryland 20640. Phone: 301-753-6548.

3400. Mitoku Co. Ltd. 1989. Food is medicine: Mitoku macrobiotic (Ad). *East West*. April. p. 33.

• **Summary:** The top half of this full-page ad contains a large square red seal with four Chinese characters, read “*Ishoku Dogen*, which literally means ‘medicine and food (have the) same source.’ It is an old traditional saying in Japan, and its not only Oriental philosophy. In the 4th and 5th centuries BC, a Greek physician spoke of letting food be our medicine. Hippocrates taught that the effects of occupation, climate and food, were where much of the cause of illness lay. Today, modern science and medicine have begun to agree with this ancient wisdom.”

“Mitoku Macrobiotic products are a selection of some of the highest quality foods in the world; Miso, Tamari and Shoyu, premium seaweeds,... mochi.”

USA wholesale distribution: Granum, Seattle, Washington 98105 (206) 525-0051. Spiral Foods Inc., Asheville, North Carolina 28814 (800) 633-2156. Address: CPO Box 780, Tokyo, Japan 100-91.

3401. Shurtleff, William; Aoyagi, Akiko. comps. 1989. Bibliography of miso and soybean chiang: 1,604 references from A.D. 535 to 1989. Lafayette, California: Soyfoods Center. 227 p. Subject/geographical index. Author/company index. Extensively annotated. Printed April 28. 28 cm. [1604 ref]

• **Summary:** This is the most comprehensive bibliography ever published on miso and soybean chiang. It is also the single most current and useful source of information on this subject available today, since 54% of all references (and most of the current ones) contain a summary/abstract.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 37 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject from its earliest beginnings to the present, worldwide.

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, and a bibliometric analysis of the composition of the book (by language, document type, year, leading countries, states, and related subjects) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

3402. Taguchi, Takeko; Sato, M.; Yasuhira, H.; Sekiguchi, J.I. 1989. Taiensei kokyû kesson kôbo no riyô ni kansuru kenkyû [Studies on utilization of halotolerant respiratory-deficient yeast]. *Nippon Jozo Kyokai Zasshi (J. of the Brewing Society of Japan)* 84(4):264-69. April. [7 ref. Jap; eng]

• **Summary:** A respiratory-deficient yeast mutant induced from *Zygosaccharomyces rouxii* did not absorb oxygen. It fermented miso with a 13% higher fermentation efficiency and less sugar consumption than its parent strain. In a taste panel test of the two miso types, some recognized no difference and the rest considered the miso made with the mutant to be superior. Address: 1-2. The Shinshu Miso Research Inst., 469-6 Nakagosho, Nagano-shi 380; 3. Dep. of Applied Biology, Shinshu Univ., 3-15-1, Tokida Ueda-shi 386. All: Japan.

3403. Toriano, Peter. 1989. Japanese food firms cook up new strategies for U.S. consumers. *Economic World*. April. p. 22-26.

• **Summary:** “Riding the success of tasty, low-priced food products, the Japanese eye a bigger helping of the U.S. grocery mart.” Two of the most popular Japanese food products have been soy sauce, ramen noodles, and tofu. “Nissin sold more Cup O’Noodles in the United States last year than McDonald’s sold hamburgers nationally... Japanese food companies and food products are slipping under America’s door unnoticed... The Japanese start selling their food products in the U.S. to a small, very concentrated ethnic market... While Kikkoman can trace exports of soy sauce to the U.S. as far back as 1869, most Japanese food companies did not export to or manufacture products in the United States in significant quantities until the 1970s...”

“American food product companies focus on their competitors, whereas the Japanese tend to focus on what the customer wants...”

“Kikkoman, one of Japan’s largest food-related companies, is involved with wines and liquors, pharmaceuticals, health foods and a chain of restaurants. In addition to its other products, Kikkoman has introduced a shelf-stable tofu, instant miso soup and a rice wine for use in cooking.

“Kenzaburo Mogi, planning manager of Kikkoman’s foreign operations department, says tofu could become as big a market as soy sauce for Kikkoman in the U.S. in the years to come. In the U.S., Kikkoman also owns 80% share of JFC (Japan Food Corp.), a major distributor of oriental food products... Consumption of Kikkoman’s soy sauce has increased fivefold since 1972... On average, each Japanese consumes about 2.5 gallons of soy sauce every year; the average American consumes less than 10 oz...”

“Almost a quarter of Kikkoman’s total business now is outside Japan: two-thirds in the U.S. and most of the rest in

Southeast Asia. The company also is targeting production in Europe, Australia and China...

“Ajinomoto Co, Japan’s largest food processor, has been selling abroad since 1909, when its first overseas office opened in New York... Until the 1960s, Ajinomoto’s main product was MSG (monosodium glutamate). Today, it has a more diversified line-up, with about 41% of sales coming from processed foods, and 26% from seasonings... The predominant products the firm manufactures in the U.S. are amino acids for pharmaceutical use...

“Kibun Products International Inc., a subsidiary of Kibun Company Ltd. Japan, is a major manufacturer of surimi in the U.S... Kibun is a multi-billion-dollar, 50-year-old food products company with worldwide operations totalling \$2,000 million annually...

“Morinaga Nutritional Foods Inc., a subsidiary of Morinaga Milk Industry Co. Ltd., the Borden of Japan, is selling its tofu in air-tight containers that prolong freshness, eliminate water changes and is bacteria-free...

“This could be the food of the future, replacing dairy and meat as major sources of nutrition,” says Kent Cooper, spokesman for Hakuhodo Advertising America Inc. in Los Angeles, which handles Morinaga’s account...

“Faith Popcorn, chairman of BrainReserve Inc., a marketing consulting company to Fortune 500 companies says America is eating healthier and is more and more concerned with where food products originate and what that does to the Earth, known as the graining/greening of America. ‘Vegetarianism is growing like crazy. Americans are changing from flesh food to health food.’”

3404. Product Name: Westbrae Oriental Style Dressings [Lemon & Spice, Oriental Orange, Sesame, Sesame (No salt added)].

Manufacturer’s Name: Westbrae Natural Foods.

Manufacturer’s Address: P.O. Box 91-1181, Commerce, CA 90091. Phone: (213) 722-1692.

Date of Introduction: 1989. May.

Ingredients: Lemon & Spice: Water, honey, expeller pressed canola oil, grain vinegar, sea salt, egg yolk, miso (soy bean paste), xanthan gum (vegetable gum), garlic*, onion*, lemon peel*, lemon juice concentrate, lemon oil, spices, celery seeds, poppy seeds, natural flavors. * = Dried.

Wt/Vol., Packaging, Price: 8 fl. oz. in tall-neck glass bottles.

How Stored: Shelf stable.

New Product–Documentation: Westbrae sell sheet and new product announcement. 1989. May. “Available May 1.” The “Oriental Style Lemon & Spice” uses miso as the 7th ingredient. All oils are expeller canola oil.

3405. Library of Congress, Subject Cataloging Div., Processing Services. 1989. Library of Congress subject

headings. 12th edition. Washington, DC: Cataloging Distribution Service, Library of Congress. 3 volumes.

• **Summary:** This 12th edition (LCSH 12) contains approximately 173,000 headings established by the Library through Sept. 1988. The book was available on 3 May 1989. Approximately 10,000 headings were added since the 11th edition in 1988. Among these headings are 139,000 topical subject headings, 22,000 geographic subject headings, 10,000 personal names (incl. 9,000 family names), 2,600 corporate headings. This book should be used with the Subject Cataloging Manual (1989. 3rd ed.).

These subject headings have been accumulated by LC since 1898 and the first edition of LCSH was printed between 1909 and 1914. Subject headings are listed in boldface type. Approximately 40% of headings are followed by LC class numbers, which are added only when there is a close correspondence between the subject heading and the provisions of the LC classification schedules.

References show the relationship between terms: (1) The equivalence relationship: Use of UF (Use for) references. (2) The hierarchical relationship: Broader terms (BT) and narrower terms (NT). BT and NT function as reciprocals. A term appearing as a BT must be matched by the reversed relationship as an NT (e.g., Motor Vehicles. BT Vehicles. NT Trucks). (3) The associative relationship: Related terms (RT. Ornithology. RT Birds). May Subd Geog (MSG) = May subdivide geographically. Soy related subject headings, listed alphabetically, are:

Fermented soyfoods (MSG). BT Food, Fermented. Soyfoods. NT Fermented soymilk. Miso. Natto. Soy sauce. Tempeh.

Fermented soyfoods industry (MSG). BT Soyfoods industry. NT Miso industry. Nattô industry. Soy sauce industry. Fermented soymilk (MSG). BT Fermented soyfoods. Soymilk.

Hydrogenation [QD281.H8]

Information storage and retrieval systems–Soyfoods. Lecithin [QP752.L4 (Physiology), or RM666.L4 (Therapeutics)]. UF Phosphatidylcholine. BT Phospholipids. NT Lysolecithin. Also: Lecithinase.

Margarine (MSG) [TP684.M3 (Manufacture)]. UF Butter, artificial, Margarin, Oleomargarine. BT Oils and fats, edible. NT Vanaspati. Margarine industry (MSG) [HD9330.M37-374] BT Oil industries. NT Vanaspati industry.

Meat substitutes [TX838]. BT Food substitutes. Vegetarianism.

Miso (MSG) [TP438.S6 (Manufacture)]. UF Paste, Soybean. Soybean paste. BT Fermented soyfoods. NT Cookery (Miso).

Miso industry (MSG). BT Fermented soyfoods industry. Nattô (MSG) [TP438.S36 (Manufacture)] [TX558.S6 (Nutrition)]. BT Fermented soyfoods.

Nattô industry (MSG). BT Fermented soyfoods industry.

Natural food restaurants (MSG). UF Restaurants, Natural food. BT Restaurants, lunch rooms, etc. RT Food, Natural.

Natural foods industry (MSG) [HD9000-HD9019]. UF Health foods industry. BT Food, Natural. Note: Natural food (Use Food, Natural). Natural food cookery (Use Cookery (Natural foods)).

Nonfermented soyfoods.

Nonfermented soyfoods industry.

Shortenings—Use Oils and fats, edible.

Soy ice cream (MSG). Here are entered works on no-dairy frozen desserts in which soy protein largely or completely replaces the dairy proteins. UF Ice cream, Soy. Soymilk ice cream. Tofu ice cream. BT Non-dairy frozen desserts. Nonfermented soyfoods.

Soy ice cream industry (MSG) [HD9330.S63-HD9330.S633]. BT Nonfermented soyfoods industry.

Soy sauce (MSG) [TP438.S6 (Manufacture)]. [TX407.S69 (Nutrition)]. UF Sauce, Soy. Soy. Soya Sauce. BT Fermented soyfoods. NT Cookery (Soy sauce).

Soy sauce industry (MSG) [HD9330.S65-HD9330.S653]. BT Fermented soyfoods industry. NT Strikes and lockouts—Soy sauce industry.

SOYA (Information retrieval system [SoyaScan from Soyfoods Center]) [Z695.1.S68]. BT Information storage and retrieval systems—Soyfoods.

Soybean (MSG) [QK495.L52 (Botany)]. [SB205.S7 (Culture)]. UF Glycine max. Soja bean. Soja max. Soybean. Soya. Soya bean. BT Beans. Forage plants. Oilseed plants.

Soybean—Diseases and pests (MSG). NT Diaporthe phaseolorum. Heterodera glycines [Nematodes]. Soybean mosaic disease. Soybean rust disease.

Soybean as feed [SF99.S]. NT Soybean meal as feed.

Soybean flour. UF soya flour. BT Flour. Soybean products.

Soybean glue. BT Glue. Soybean products.

Soybean industry (MSG) [HD9235.S6-HD9235.S62]. BT Vegetable trade. NT Soybean oil industry.

Soybean meal (MSG). UF Soybean oil meal. Soybean oilmeal. BT Meal. Soybean products

Soybean meal as feed [SF99.S]. BT Soybean as feed.

Soybean mosaic disease (MSG) [SB608.S7]. UF Soybean chlorosis. Soybean leaf curl. BT Soybean—Diseases and pests. RT Soybean mosaic virus.

Soybean mosaic virus. BT Plant viruses. RT Soybean mosaic disease.

Soybean oil (MSG) [TP684.S]. UF Bean oil. Chinese bean oil. Soy oil. BT Drying oils. Soybean products.

Soybean oil industry (MSG) [HD9490]. BT Soybean industry.

Soybean oil mills (MSG). BT Oil mills. Soybean processing plants.

Soybean processing plants (MSG). BT Factories. Food processing plants. NT Soybean oil mills.

Soybean products (MSG). NT Soybean flour. Soybean glue. Soybean meal. Soybean oil. Soyfoods.

Soybean rust disease (MSG) [SB608.S7]. UF Rust disease of soybean. BT Fungal diseases of plants. Soybean—Diseases and pests. RT Phakopsora pachyrhizi.

Soyfoods (MSG). [TX401.2.S69 (Nutrition)].

[TX558.S7 (Composition)]. UF Soybean as food. BT Food. Soybean products. RT Cookery (Soybeans). NT Fermented soyfoods. Nonfermented soyfoods.

Soyfoods industry (MSG) [HD9235.S6-HD9235.S62]. BT Food industry and trade. NT Fermented soyfoods industry. Nonfermented soyfoods industry. Soymilk industry.

Soymilk. UF Beverages, Soy. Milk, Soy. Milk, Soybean. Soy beverages. Soy milk. Soybean milk. BT Nonfermented soyfoods. NT Fermented soymilk.

Soymilk industry (MSG) [HD9235.S6-HD9235.S62]. UF Soy milk industry. Soybean milk industry. BT Soyfoods industry.

Tempeh (MSG) [TX558.T39]. UF Bongkrek. Tempe. BT Fermented Soyfoods. RT Cookery (Tempeh).

Tofu (MSG).

Note: Changes in this edition from the 11th edition. Changed: Soybean as food to Soyfoods. Changed: Soybean milk to Soymilk. Changed: Soybean milk industry to Soymilk industry. Added: Soyfoods industry. Added: Fermented soyfoods. Added: Fermented soyfoods industry. Added: Nonfermented soyfoods. Added: Nonfermented soyfoods industry. Added: Fermented soymilk. Address: Washington, DC.

3406. Westbrae Natural Foods. 1989. Distributor catalog: FOB West pricing. Spring 1989. P.O. Box 91-1181, Commerce, CA 90091. [6] + 19 p. 22 x 28 cm.

• **Summary:** Has a black on yellow cover. Address: Commerce, California. Phone: (213) 722-1692.

3407. Akwarius Almere. 1989. Akwarius prijs en bestelboek: Natuurvoedingsprodukten [Catalog and price list. April-June]. P.O. Box 50070, 1305 AL Almere, The Netherlands. 77 p. [Dut]

• **Summary:** Akwarius is a larger importer and distributor of natural food products. They have worked in this field since 1971, and have a strong interest in macrobiotic and anthroposophical foods. Contents (p. 2). Philosophy and function (p. 3). Beverages (p. 7): Sojamelk naturel and Bonsoy, Provamel Sojadrink (4 flavors in 500 ml and 4 flavors in 1 liter sizes), Provamel Soja dessert (puddings; 5 flavors in 125 gm and 1 flavor in 1050 gm).

Manna sweeteners (p. 12): Amasake drink in 350 and 700 gm sizes, and rice koji. Note that Akwarius imports and distributes large line of Manna-brand macrobiotic products

from Muso in Japan. Manna vegetable protein products (p. 21): Dried tofu (non-organic). Bonsoy soymilk, Seitan, and three types of dried wheat gluten (fu). Manna Soy Sauces (Sojasausen, p. 21): shoyu (B = biological or organically grown, and NB = not biological, i.e. non-organic), and tamari (non-organic).

Witte Wonder (p. 22): Seitan, Tofu Spread (in paprika, garlic, celery, dill, mushroom, and pepper flavors, 220 gm sizes, all organic), Tofu in Sauces (peanut, curry-pineapple, and tomato flavors, 340 gm, organic), Tofunaise (plain and lemon flavors), Tofu Dressing (Italian, garden herbs, Mexican, and plain flavors).

Yakso (p. 23): Seitan, Tempeh Spreads (in Indonesian poesta and doeloe flavors), Temmo (round tempeh burger, deep fried then marinated, ¼ inch thick, sold 5 in a glass jar), Soyaroma (tempeh spread like butter), Sweet Indonesian-style soy sauce (Ketjap manis), Tofu Spreads (cream cheese consistency, in salsa, dill, green, shallot, and pommodore [apple?] flavors), Tofu Mayonnaise (Sojanaise), Smoked tofu (paprika, mushroom, and celery flavors in 170 gm wide mouth glass jars).

Akwarius soybeans and soybean meal/flour (p. 27-28, 35, organic). Manna Pasta (p. 28): Soya macaroni. Manna black soybeans from Hokkaido (p. 35; 350 gm, non-organic). Manna Tekka Condiment (p. 44), Manna soynuts (*Sojanootjes*, p. 45, 3 flavors). Lima soyadrink (p. 47).

Manna Miso (Sojapasta; p. 48): Brown rice miso (organic and non-organic), young rice miso (non-organic), barley miso (organic and non-organic), natto miso (non-organic), soybean miso (non-organic), instant miso soup (with and without fish, non-organic), instant miso soup with tofu. Manna sea vegetables (p. 49).

Note: This is the earliest Dutch-language document seen that mentions soynuts, which it calls *Sojanootjes*. Address: Almere, Netherlands. Phone: 03240-20800.

3408. Welters, Sjon. 1989. Soyfoods in Europe: Influenced by a colonial past. *Soya Newsletter (Bar Harbor, Maine)*. May/June. p. 1, 12-15. [1 ref]

• **Summary:** This is a historical overview of the introduction of soyfoods to Europe since 1945. The Indonesians who immigrated to the Netherlands after World War II played a major role in introducing soyfoods (especially tofu, tempeh, and a sweet soy sauce called ketjap) to that country and to Europe. Ketjap was the most popular soyfood in Indonesia. Asian immigrants started small manufacturing companies, restaurants, and importing companies (such as Conimex and Heuschen Schrouff). The macrobiotic movement also played a key role in introducing soyfoods, especially soy sauce, miso, and tofu. In Belgium, the Gevaert family founded Lima and began to make miso on a large scale, but a fire and other financial problems soon forced them to close the plant. Only recently have they started to make miso again.

During the 1970s, especially in Belgium and the Netherlands, inspired by the macrobiotic movement and with information from books by Shurtleff and Aoyagi, a new generation of non-Asian tofu makers emerged. "The first tofu shop in Europe owned and operated by non-Orientals was Manna Natuurvoeding. Opened in Amsterdam in 1977, Manna was a macrobiotic manufacturer, distributor, and retailer run by a non-profit foundation. Soon after opening, Manna was visited by entrepreneurs from Germany, England, Portugal, Denmark, France, Sweden, Austria, and Italy, hoping to learn about making tofu."

During the early 1980s, tempeh was rediscovered. "Yakso Farms in the Netherlands was one of the first non-Oriental companies to produce tempeh, made from organic soybeans, and to process it into spreads, paté, sauces, and marinated products."

In the mid-1980s the focus shifted from production to marketing and to second-generation soyfoods. Most European soyfoods are made with organic soybeans. Address: President, Craft International Consultants, 21 Wetherbee St., Acton, Massachusetts 01720. Phone: 617-264-9511.

3409. Perez Baez, Oswaldo. 1989. Re: New developments with soyfoods in Venezuela. Letter to William Shurtleff at Soyfoods Center, July 10. 3 p. Typed, with signature on letterhead. [Eng]

• **Summary:** "In my last visit to Caracas I contacted: Prof. Makie Kodaira and Prof. Amaury Martinez of the 'Instituto de Ciencia y Tecnología de Alimentos, Facultad de Ciencias, U.C.V.' (Universidad Central de Venezuela) who are very interested in offering a theoretical and practical course about soyfoods, using their pilot plant (the second of importance in Venezuela). Prof. Kodaira studied in Hiroshima, Japan in 1977 and she is a specialist on seafoods. They would like the 'Centro de Alimentos de soya de Venezuela' to organize this course.

"I think this is the time to offer in Venezuela a complete course about soyfoods and I have thought to invite you to come to Venezuela. I am thinking about 2 courses:

"(a) One oriented to Institutional level (Instituto Nacional de Nutrición, Fundación Polar, CIEPE, Universidades, Industry, etc.) for professional people. This course could be in Caracas, Instituto de Ciencia y Tecnología de Alimentos, U.C.V.

"(b) Another one oriented to the general public (not necessarily professional level). This course could be here in La Azulita which is a rural and beautiful place, epicenter of the Venezuelan movement for alternative lifestyles.

"I have thought of the following content for these courses: (1) Soymilk. (2) Tofu. (3) Tofu and soy milk ice cream. (4) Miso. (5) Tempeh. (6) Shoyu.

"I am working on a book about soyfoods, and am enclosing an outline of the contents: I. Introduction. II.

Agronomic aspects. III. Soya and food security. IV. The most important soyfoods. V. Industrial potential of the soybean. VI. Bibliography. VII. Index.” Address: Ing., Centro de Alimentos de Soya de Venezuela, Granja Tierra Nueva, Aldea San Luis, La Azulita, Estado Merida, C.P. 5102, Venezuela.

3410. Welters, Sjon. 1989. Re: Brief history of Manna Natural Foods. Letter to William Shurtleff at Soyfoods Center, July 24. 1 p. With follow-up talk on 2 Dec. 1989.

• **Summary:** This company was founded in about 1973 by Adelbert Nelissen and his wife Wieke Nelissen, plus Hugo van Seenus, among others. Adelbert is Sjon’s brother in law (his wife’s brother). Manna got started in the Rozenstraat in Amsterdam, in an abandoned house that was taken over by so-called “krakers” (counter-culture or hippy squatters). The store called “de Rozemaryn” (Rosemarin) was the first of a chain of stores which, at its peak, contained ten stores total. Hugo now owns and operates Hugo’s Market in Washington, DC

Manna was originally a foundation named Stichting Natuurvoeding Amsterdam. It kept this name until 1982. Manna started the first tofu shop in Europe that was owned and operated by non-Orientals. Opened in Amsterdam in 1977, Manna was a macrobiotic manufacturer, distributor, and retailer run by a non-profit foundation. Soon after opening, Manna was visited by entrepreneurs from Germany, England, Portugal, Denmark, France, Sweden, Austria, and Italy, hoping to learn about making tofu.

In 1975 Manna started importing miso and shoyu from Japan, initially via Muso Foods, and later also via Mitoku. But Muso was always their main supplier.

Manna filed for Chapter 11 bankruptcy or reorganization 2 or 3 times. The first time was a bankruptcy in March 1982. All their property was sold at an auction, but was bought back by a new foundation owned by basically the same people and the same foundation at one-third the value. It was probably at this time that Manna’s name was changed from Stichting Natuurvoeding Amsterdam to Manna Natuurvoeding B.V. The company was back on its feet by 1983 but then things didn’t work out again. At the last moment before declaring bankruptcy, they got financing. But this time the bank took the Foundation out of the picture, so that the foundation was not giving the collateral for loans. The person behind the foundation, Adelbert Nelissen, became the director/president of the holding company. He probably did not have majority ownership. But at this time (May 1983) Sjon and most of the management left.

In about late 1983 or early 1984 Manna moved all operations from Meeuwenlaan in Amsterdam to Zwanenburg. The former section of Amsterdam was torn down by the city. The third time was in 1987, when the company was disbanded. At that time Adelbert became

inactive. The government-appointed curator tried to get as much as possible for the assets. The macrobiotic Manna brand name and the inventory of imported Japanese foods was purchased by Akwarius, which was located in Almere in a building constructed along anthroposophic guidelines (before about 1986 they had been located in the province of Utrecht). The production facility at Zwanenburg and its equipment was purchased (mainly for the bakery) by a conglomerate of 3 natural food companies, including Akwarius and Loverendale (the largest baker of natural yeasted breads in the Netherlands). They made Manna tofu for a year or two, then facing stiff competition, sold off the tofu equipment piecemeal. They ran the Manna sourdough bakery there until 1988, then moved it to Loverendale headquarters, and closed down the Zwanenburg production facility.

Akwarius is a company based on the anthroposophical philosophy of Rudolf Steiner. They were founded in about 1974. In Holland there were 4 types or philosophies of natural foods distributors: (1) Anthroposophical (Akwarius); (2) Macrobiotic and natural foods (Manna); (3) Ecological (Kleine Aarde [Small Earth; inspired by E.F. Schumacher’s book *Small is Beautiful*] and De Nieuwe Lelie [The New Lily]); and (4) Reform movement/vegetarian (VNR: Vereniging van Nederlandse Reformhuizen = Union of Dutch Reform Houses, and Scholten [which was also the exclusive importer of Lima products from Belgium]).

Talk with Sjon Welters. 1994. April 4. Manna and Lima sold only vegetarian foods; they did not sell any fish, poultry, or meat. All these early Dutch natural foods companies were this way because no natural food store would sell fish or other flesh products; they were just not acceptable. Some years after they started they used eggs in a few products but they were always vegetarian. The only people who ever got involved in flesh foods in the early stages were the Anthroposophic/Biodynamic people because its part of their philosophy, but even in the beginning they didn’t sell meat to the stores because customers didn’t want it. Address: Craft International Consultants, 21 Wetherbee St., Acton, Massachusetts 01720. Phone: 508-264-4011.

3411. Business Trend Analysts, Inc. 1989. The health and natural food market: A product-by-product marketing analysis and competitor profile. 2171 Jericho Turnpike #342, Commack, NY 11725. 280 p. Price \$950.00. *

• **Summary:** Section 6 of this report is titled “The Market for Soyfoods” (24 pages). It projects 6.2% growth for the soyfoods industry, and contains the following (much of it provided by Soyatech, Inc. and Soyfoods Center): Analysis and summary. Manufacturers’ sales of soyfoods. Manufacturers’ sales of soyfoods to major outlets. Manufacturers’ sales of soyfoods, by type of outlet. The top six soymilk producers in the U.S. U.S. per capita

consumption of soymilk. Retail sales of soyfoods. Retail sales of soyfoods at major outlets. Retail sales of soyfoods, by type of outlet. Graph: Product mix of U.S. soyfood sales. Estimated mix of distribution channels used to market various soyfoods. U.S. soybean production. Characteristics of women's use of soy sauce. Quick Tamari tips. Selected 1988/89 new product introductions: Soyfoods.

Under "Report Highlights and Special Features" we read: "Soyfoods continue to gain popularity with mainstream consumers, as sales are expected to top the \$380 million mark, at the wholesale level, by year-end. At the retail level, sales of tofu alone are currently pegged at \$77 million, with supermarkets capturing close to 60% of dollar volume."

Overall report Contents: 1. Executive summary. 2. The overall market for health and natural foods (including Soyfoods 1979-1988, with forecast to 1998). 3. The market for health and natural dairy foods. 4. The market for health and natural grocery products. 5. The market for health and natural snack food products. 6. The market for soyfoods. 7. The market for health and natural grains and cereals. 8. The market for health and natural frozen foods. 9. The market for herbal products. 10. Distribution channels. 11. Factors affecting demand. 12. Trends in organic farming. 13. Competitor profiles: Alta-Dena Certified Dairy, Arrowhead Mills, Barbara's Bakery, Celestial Seasonings, Golden Temple, San-J International, Thompson Kitchens. Tivall U.S.A./Garden Gourmet, U.S. Mills (partial list). 14. Directory of more than 200 health and natural food producers. Address: Commack, New York. Phone: 516-462-2410.

3412. Coffey, Rory. 1989. Lupins as an energy-rich protein source for feed and food. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 410-14.

• **Summary:** Contents: Abstract. Introduction. Lupin consumption and usage. Dehulled lupin. Human consumption: Lupin concentrate, miso soup, lupin tempeh, lupin flour.

Miso soup: Although about 200,000 tons of soybeans are used each year in Japan to make miso soup, there is a problem with oxidation, which causes discoloring. The Shinshu Research Institute has investigated the use of lupins as a substitute for soybeans in an attempt to solve this problem. Oxidation does not occur with lupins and to date results have been encouraging. Table 8 shows a sensory evaluation of the two types of miso (high score is more favorable): Color—Lupin 12, soy 0; Taste—Lupin 10, soy 2; Aroma—Lupin 7, soy 5; Texture—Lupin 6, soy 6.

Lupin tempeh: In 1986 an Indonesian company began to investigate the feasibility of using lupins as a substitute for

soybeans in making tempeh—with the assistance of the Grain Pool of Western Australia and R. Yu of the Victorian Food Research Institute. Despite some problems at the beginning, the efforts by all 3 parties have proved successful and the Indonesian company is now using a significant tonnage of lupins to make tempeh.

Lupin flour: In 1987, the Grain Pool initiated an evaluation of lupin flour in human food products.

Lupins have been grown and used in Western Australia for over 30 years. After extensive genetic engineering, the composition of the present day varieties is far superior to those grown originally. Over 90% of the lupins grown in Western Australia, and all that are available for export, are varieties from the species *Lupinus angustifolius*, a sweet, white, narrow leaf lupin.

In terms of world lupin production in 1985, Australia has the largest area (606,000 ha), followed by the USSR (280,000), and Europe (148,000). In the USSR and Eastern Europe much of the lupins are grown for forage or green manure; not much grain is not harvested. A photo shows R. Coffey. Address: Grain Pool of Western Australia, Grain Pool Bldg., 172 St. George's Terrace, Perth 6000, Western Australia, Australia.

3413. Hanaoka, Toshio. 1989. Miso preparation and new uses. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 369-74. Contains 4 tables and 4 figures. [27 ref]

• **Summary:** "The prototype of miso was introduced to Japan from Korea at least 1,300 years ago. Misho (the original type of miso) was first cited in Taihouryou in 701 A.D. Although the production method for misho was not described, it probably resembled soybean miso today. In the northeast district of China, it was called 'misun,' and in Korai (located in north Korea 935 to 1392 A.D.) 'misso' and in south Korea 'mijo.' The process includes pounding and mashing of cooked soybeans, shaping into balls, wrapping in rice straw, hanging the wrapped materials under the eaves and mixing with salt and water and often was seen at farmhouses in prewar Japan... Miso originally was made at Buddhist monasteries for internal and use in aristocratic circles.

"Another route of introduction was from China to Japan by Buddhists and envoys who produced fermented soybean foods such as Kinzanji-miso. The difference of this process from the Korean process was to make koji from cooked whole soybeans with barley or wheat without pounding.

"The industrial production of soybean miso was started in Aichi prefecture in 1625 and that of rice miso in 1645 at Sendai as the original of Sendai miso today... Thereafter, the number of miso factories increased gradually in the Tokugawa period (1600-1867) and rapidly up to about

5,000 at the end of World War II. Recently, miso factories introduced many advanced facilities and equipment for economical and hygienic production. The number of miso factories was reduced to about 1,700, amalgamating to large scale factories of which capacity was over 3751 tons in 1984. They produced 353,000 tons equivalent to 59% of total industrial production. Employing 182,000 tons of soybeans, 104,000 tons of rice, 23,000 tons of barley and 72,000 tons of salt, ca. 568,000 tons of miso were produced by all factories in 1985. In addition, the amount of home-made miso is roughly estimated as 60,000 tons. The amount of miso supplied per capita was 4.9 kg in 1987...

“Ninety per cent or more of miso is used as an ingredient of soup in Japan... Daily per capita consumption was 28 to 30 g during the years from 1951 to 1959. From that time until 1985, it gradually decreased to the level of 16 g which is enough to prepare one bowl of miso soup.”
Address: Hanamaruki Inc., 4-22-10 Himonya, Meguro-ku, Tokyo 152, Japan.

3414. Karta, Susani K. 1989. Traditional Chinese soyfood. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 382-87. [18 ref]

• **Summary:** Contents: Abstract. Introduction. Variables in manufacturing tofu: Soybean variable, processing variable, maceration and extraction (soaking and grinding) stages, filtration and heating stages, coagulation stages, types and concentration of coagulants used in tofu manufacturing. Tofu products.

Table 3 shows 1987 consumption of soybeans as foods in Asian countries. The results are presented here in descending order of per capita consumption: Per capita soybean consumption, country (population), total soybean consumption in 1,000 tonnes. 13.3 kg/capita, Taiwan (19.6 million), 260,000 tonnes. 9.3 kg/capita, Japan (122.2 million), 1,141,000 tonnes. 9.0 kg/capita, Indonesia (175 million), 1,575,000 tonnes. 7.8 kg/capita, South Korea (42.1 million), 330,000 tonnes. 7.7 kg/capita, Singapore (2.6 million), 20,000 tonnes. 6.9 kg/capita, China (1,062 million), 7,325,000 tonnes. 3.4 kg/capita, Malaysia (55 million), 55,000 tonnes. 2.2 kg/capita, Thailand (53.6 million), 118,000 tonnes. 0.3 kg/capita, Philippines (61.5 million), 18,000 tonnes.

In China, fried tofu is called Tou-Pok. Address: American Soybean Assoc., 541 Orchard Rd., #11-03 Liat Towers, Singapore 0923, Republic of Singapore.

3415. Kim, Seung Ho; Kwon, Tai-Wan. 1989. Vegetable protein foods in Korea. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs.

Champaign, IL: American Oil Chemists' Society. xii + 575 p. See p. 439-42.

• **Summary:** Contents: Abstract. Introduction. Situation of traditional protein foods. Situation of vegetable proteins. Traditional protein foods in Korea: Soy sauce (*kan jang*), hot soy paste (*ko chu jang*), *chung kuk jang* (a kind of soy paste made by mixing natto [*naap doo*] with seasonings [salt, red pepper, and garlic], and grinding then aging the mixture), soybean sprouts (*kong na mool*).

Note: This is the earliest English-language document seen (March 2009) that uses the term “ko chu jang” to refer to Korean-style red pepper and soybean paste (miso).

Note 2. This is the earliest English-language document seen (March 2009) that uses the term “chung kuk jang” to refer to Korean-style natto.

Tables: (1) Domestic Korean production and import of soybeans from 1982 to 1987. Domestic production rose to 250,000 tonnes from 233,000 tonnes. Imports for food uses rose to 144,000 tonnes from 104,000 tonnes. Imports for feed uses rose to 936,000 tonnes from 479,000 tonnes. Total supply rose to 1,330 tonnes from 816 tonnes, up 63% in 5 years.

(2) Consumption of soybeans in traditional Korean foods, in 1,000 metric tons, from 1982 to 1987 (1982/1987). Figures in parentheses are for home production. Soy sauce (*kan jang*) 69(50)/70(51). Soy paste (*doen jang* [Korean soybean miso]) 51(41)/50(40). Hot soy paste (*ko chu jang*) 5(4)/5(4). Soybean curd (*doo bu*) 60/114. Soy milk (*doo yoo*) 7/14. Others: Homemade soybean curd and soy milk, *chung kuk jang*, *choon jang* (kinds of soy paste), soybean sprouts (*kong na mool*), and whole soybeans 145/141. Total 337/394, or an increase of 19.9% in 5 years.

Note: This is the earliest English-language document seen (March 2009) that uses the term “choon jang” to refer to Korean-style soybean paste (miso).

(3) Domestic production and import of soybeans in Korea (Estimated for 1987, in metric tons): Soy protein–Textured vegetable protein (domestically made) 4,500. Soy protein isolate (import) 1,800. Soy protein concentrate (import) 150. Wheat protein–Textured vegetable protein (domestic) 900. Vital gluten (domestic) 150. Gluten (wet & dry) (import) 409. Total 7,909.

(4) Nutritional composition of soybeans and soybeans sprouts (per 100 gm).

Figures show: (1) Manufacturing method for rice hot soy paste (*ko chu jang*) (flow sheet). Numbers represent typical ratio of ingredients in volume. (2) Manufacturing method for chunk kuk jang (a type of soy paste) (flow sheet). Numbers represent typical ratio of ingredients in volume.

A photo shows one of the authors. Address: Korea Food Research Inst., P.O. Box 131, Chongryang, Seoul, South Korea.

3416. Natufood B.V. 1989. Prijs-bestelboek [Natufood price list and catalog, July-Sept. 1989]. Fahrenheitstraat 18, 3840 BN Harderwijk, Netherlands. 73+ p. [Dut]

• **Summary:** This catalog of a Dutch natural foods distributor lists the farming method (organic or not), wholesale and retail prices for each product: Page 8: Witte Wonder tofu spreads (mushroom, chili, green peppercorn, garlic, paprika, celery), Lima Limapast contains sunflower seeds, miso, and soy flour. Page 30. Joannusmolen roasted soy flour. Page 31. Natufood defatted soy flour (sifted). Ad for the Vetara line of ready-to-eat foods, many of which contain TVP. Page 33. Avita soybeans (Avita Natufood's organic food line). Natufood soybeans. Ad from Nutricia for canned powdered infant foods. Nutri-Soja complete infant food based on soy. Nutri-Soja Plus based on soy for infants that have been weaned. Page 34. Nutricia infant formulas: Nutrisoja in 400 gm or 1000 gm and Nutrisoja-Plus in 900 gm. Page 35. Avita little soybeans (regular and large, organic).

Page 36. Witte Wonder soybeans in tomato sauce. Ad for Vetara organic tofu, which is produced by Heuschen-Schrouff B.V. in a completely new facility under extremely sanitary conditions. It is made with organic soybeans with a natural coagulant (Serempi) in the traditional way. "Best quality, lowest price." The product label (250 gm) is shown. Page 37. Refrigerated miso products made in Europe. Lima barley miso and rice miso, both unpasteurized. Page 38. Meat replacers. Seitan is sold by Vetara, Witte Wonder, Yakso, and Manna. Vetara herb tofu, Napolitan tofu, rice tofu, bali tofu, rames tofu, rames tempeh, Tjap Tjoy. Witte Wonder tofu in curry/pineapple sauce, and in peanut sauce. Ad for Vetara vegetarian burgers, frankfurters, and schnitzels.

Page 39. Soya meat replacers and vegetarian mixes: Lists 11 Vetara products based on or containing TVP (textured soy flour) or HVP (hydrolyzed vegetable protein). Nutana meat replacers (9 products). Jonathan natural tofu. Cenovis and Huegli bouillon tablets (14 types, probably contain miso). [Sjon Welters adds that Huegli, a multi-million dollar Swiss food company, owns a major part of Natufood B.V.]. Western bouillons (Miso): Lima barley and rice misos. Heiwa Hatcho miso and instant miso soup. Huegli ad.

Page 42. Vegetarian refrigerated products: Vetara smoked tofu, natural tofu (EKO mark), saté tofu, vetaburgers with pineapple, with cheese & onion, natuburgers. Soyadrinks and desserts: Provamel (8 drinks and 6 desserts [puddings]). Lima (3 drinks).

Page 43. Seasonings: Vetara sweet soy sauce (Ketjap zoet). Yakso sweet soy sauce (Ketjap manis). Soy sauce. Lima shoyu (orange label) and tamari (blue label). Heiwa shoyu and tamari. Vetara shoyu. Page 44. Witte Wonder organic tofu dressings (Italian, Mexican, Garden herbs, or

Natural). Mayonnaise and Tofunaise: Witte Wonder organic tofunaise (regular or with lemon).

Page 52. A. Vogel products: Vogel Sojaforce. Page 67. Natufood non-organic soynuts (natural, paprika, curry, or onion). A photo of the soynuts is given at the bottom of the page. Page 69. Non-organic soynuts in bulk (same 4 flavors as page 67). Page 73. Bulk defatted soy four, and soybeans (organic or non-organic). Ad for Vetara Vegetable Bouillon, which probably contains soy. Address: Harderwijk, Netherlands. Phone: 03410-23240.

3417. Reeder, John. 1989. U.S. import/export statistics on soy products (Interview). *SoyaScan Notes*. Aug. 3.

Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John's specialty is tracking statistics on fats, oils, and oilseeds, plus natural gums and resins. The main publication carrying soy-related import statistics is titled "U.S. Imports for Consumption: U.S. Census Bureau Publication IM146." It is published by the Foreign Trade Div. of the U.S. Census Bureau and is available in a monthly published paper version, or on microfiche, or in electronic database form. With soy, it covers soybeans (Heading/subheading 1201.00), soy flour (1208.10), and soy sauce (2103.10). Miso and tofu statistics are lumped in with hundreds of other minor products in the catch-all basket category "Edible Preparations."

In the tariff part of the report, for each item there is an article description, units of quantity (e.g. kg), and rates of duty (general, special, or 2). For example, soy sauce has a general duty rate of 3%, which is granted to all "most favored nations." The "Special" column shows that it is imported duty free from countries with the codes A (Generalized System of Preferences, applied to many developing countries), E (CBERA or Caribbean Basin Economic Recovery Act), or IL (Israel). CA = Canada gets a reduced rate of 2.7%, which will be reduced to zero over the next 5-10 years under the recent Canadian Free Trade Agreement. Column 2, indicates that a 35% import duty applies to most Communist countries, except those (such as China) with "Most Favored Nation" status, when get the General rate.

In the imports part of the report, under each product (e.g. soy sauce, thin = soy sauce) there is a listing of countries, sorted by region from which the USA imports. After each country there may be the codes GSP (the amount of product imported under the lower General System of Preferences rate, because it has been shown to be as domestic product of that country), and OGN (the amount of product imported under the General rate because it has not been proved to be a domestic product), plus a total for the two. Then statistics for the current month and cumulative from January to date, of the quantity imported (which may be reported in two sets of units, Qty-1 and Qty-2, such as pounds and gallons), the customs value (the Free on Board

or FOB value declared by the importer at the foreign port of export), and the calculated duty received by the U.S. based on the customs value.

The report is also available at federal depository libraries, such as Univ. of California at Berkeley. On 1 Jan. 1989 the way of reporting data was changed to the "Harmonized Tariff Schedule of the United States" from the old "Tariff Schedule of the United States" (TSUS) system. This changes some nomenclature and makes the U.S. reporting more similar to that of many other countries, which facilitates determining tariffs and quotas on given items.

Corresponding export statistics are given in another report titled "Schedule B: U.S. Exports of Domestic Merchandise, FT410" published monthly by the U.S. Census Bureau. Each product has the same product code (e.g., soy sauce is 2103.10).

Another publication is the Directory of International Trade Analysts: Commodity Agreements.

Good databases for searching soy-related data are Disclosure, and Nexus (business news). Address: U.S. International Trade Commission, Agricultural Div., Washington, DC 20436. Phone: 202-252-1319.

3418. Welters, Sjon. 1989. Early involvement with soyfoods and Manna in the Netherlands (Interview). *SoyaScan Notes*. Aug. 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Sjon was born in 1955. He completed high school plus one year at the National Academy of Fine Arts. Then he dropped out to pursue his interest in the natural foods movement. He got involved with soyfoods when he became a vegetarian in 1973. In Sept. 1975 he started to work for Manna. During 1975-76 he did a lot of experimentation with soyfoods production while working at Manna, and he was involved in selling the shoyu and miso that Manna had been importing from Muso in Japan since 1975. In Sept. 1977 Sjon left Manna and started his non-profit natural foods foundation (Stichting Natuurvoeding Alkmaar) and his own natural foods store, both at Alkmaar (pronounced AL-ek-mayr), the Netherlands, based on the model established by Manna. During 1980-81 Sjon's foundation merged with Manna's foundation and Sjon started to work as director of operations at Manna, and he first became involved with the production of tofu and seitan. During the early 1980s Sjon was an editor of the *Manna Bulletin*. Address: Craft International Consultants, 21 Wetherbee St., Acton, Massachusetts 01720. Phone: 508-264-4011.

3419. Roth, Martin. 1989. Early history of Great Eastern Sun and subsequent work with soyfoods (Interview). *SoyaScan Notes*. Aug. 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Other records describe in detail Martin's pioneering work with commercial production of Brown Rice & Tofu Sandwiches, Sweet White Miso, Amasake, Amasake Shakes, and America's first Amasake Ice Cream. In 1982 he and his very close friend Barbara Svenning Garvey (they were never officially married) moved from Boulder, Colorado, to Miami, Florida, then to North Carolina. Martin met Barry Evens in Florida and Barry commissioned Martin to go to North Carolina and set up a macrobiotic distribution and import company near the American Miso Co., of which Barry was then the principal owner. "The beginning of that company was a wonderful experience. Everybody was thrilled. We were the first ones to actually take a full line of Japanese foods and present it to the health food stores in a big way. At that time Erewhon still had a much more limited selection of Japanese imports, such as miso, tamari, soba, etc. We had only imports, 200 to 300 esoteric items that many people never heard. We put together a nationwide sales force and went store to store, introducing the concept of a macrobiotic section. We put that on the map. We had great success, opening hundreds of accounts. I left in about 1984 because I got an opportunity to work for Westbrae as sales and marketing manager, and North Carolina was not my favorite place to live." Martin developed the concept, the name, and the graphics for the Westbrae Malted and for Mitoku's Supersoy. Address: Berkeley, California. Phone: 415-527-7066.

3420. Ebine, Hideo. 1989. Re: Retirement dates of soyfoods researchers from the National Foods Research Institute, Japan. Letter to William Shurtleff at Soyfoods Center, Aug. 28. 1 p. [Eng]

• **Summary:** Masahiro Nakano retired in 1967, Watanabe Tokuji in 1977, and Hideo Ebine in 1982. The National Food Research Institute moved from Tokyo to Tsukuba in Feb. 1989. Address: Central Miso Research Inst., Shinkawa 1-24-19, Chuo-ku, Tokyo 104, Japan. Phone: 03-551-7161.

3421. Montague, Sandy. 1989. Asians and soybeans in Australia (Interview). *SoyaScan Notes*. Aug. 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Prior to 1973 the Australian government had a "white Australia" policy that prevented Asians, blacks, and Indians from immigrating. After the racially discriminatory immigration policies were abandoned in 1973 (the year the U.S. lost the Vietnam war and withdrew its troops), the main group of Asians to enter Australia were Vietnamese. Today (according to the *World Almanac*) Asians constitute only 2% of Australia's population. Any person who now wishes to immigrate must have either money, a skill/occupation, or relatives in Australia. Thus the Asian soyfoods market in Australia is quite small and must cater to Vietnamese.

The key factor in growing soybeans in Australia is the availability and price of water. During the last 2-3 years the price of water has tripled. Thus rice, which requires less water than soybeans, is taking over soybean acreage.

Sandy sells rhizobium inoculants to Australian soybean growers. Three natural foods importers in Sydney import miso; they want organic miso. Address: Nutri-Life, "Teangri" Bethanga, VIC 3691, Australia.

3422. **Product Name:** [Miso].

Foreign Name: Miso.

Manufacturer's Name: Gaïa Enterprise. Officially registered in Jan. 1992.

Manufacturer's Address: Rue Principale, 66130 Corbere, France. Phone: 68.84.86.28.

Date of Introduction: 1989. August.

New Product–Documentation: Form filled out for Anthony Marrese. 1989. Nov. This product was introduced in Aug. 1989. Dan makes 100 kg/year of miso aged for a longer time and 5 kg/month of young miso. Both are not pasteurized.

Letter (handwritten) from Daniel S. Ludington. 1992. Feb. 7. He has been making tofu, tempeh, and miso for sale for 3½ years. He learned to make them using books by Shurtleff and Aoyagi. Now he would like to order their books *Miso Production*, and *Tofu & Soymilk Production*.

Letter (handwritten) from Dan Ludington. 1992. March 3. "Gaïa Enterprise was officially registered with the *Chambre de Metiers* of the Pyrenees Orientales in Jan. 1992. (She had been unofficially in existence using the same name for nearly four years)." Dan's father was a 20-year career cook in the U.S. submarine service. He died instantly of a heart attack at age 54. Dan is the oldest of 4 boys. He received a degree in chemical engineering from MIT in 1977, then worked for Intel Corp. in their factory making silicon chips for 5 years, then for Toshiba USA for another year. When his father died, he kept a 10-year promise to himself to hitch-hike around America. In about Loveland, Iowa, his chemical engineer's eyes saw how chlorinated hydrocarbons enter the food chain, and decided to stop eating meat. About 6 months later he was introduced to macrobiotics. 2½ years later he went to the Kushi Institute in Boston, Massachusetts, to see if he could find a better balance in his diet. There he met Odile Corbel, a French woman with a 12 year-old son named Xavier and 10 years of macrobiotic experience. They were married, and returned to France. 18 months later Dan got a Green Card. While Odile was in the USA, Pauline Schaft had stopped making tempeh, and a weekly, organically grown products market had started in Perpignan. So he and Odile started making tofu, tempeh, and macrobiotic pasties and selling them at this market. The business has grown until today sales are \$400/week. He and Odile are still married with 2 children of their own. Pauline Schaft now goes by her

maiden name of Van Marle; she is now more involved with her yoga practice than with making food. The company now sells 4 kg/week of miso, all direct and without the use of labels, marketing, or distribution.

3423. Ebine, Hideo. 1989. Miso preparation and use (also hot and sweet pastes). In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. *Food Uses of Whole Oil and Protein Seeds*. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 131-47. Chap. 9. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [24 ref]

Address: Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo, Japan 104.

3424. Griffis, Gil; Wiedermann, Lars. 1989. Marketing food-quality soybeans in Japan. American Soybean Association. Sept. *

• **Summary:** This report was published in Jan. 1989, mainly for the American Soybean Association's Tokyo office. Address: 1. American Soybean Assoc., Division Manager; 2. Japan Country Director, American Soybean Assoc.

3425. Johnson, Dale W. 1989. General uses of whole soybeans. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. *Food Uses of Whole Oil and Protein Seeds*. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 12-29. Chap. 2. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [35 ref]

• **Summary:** Contents: Introduction: Introduction. Oriental nonfermented products: Yuba, kinako Thai desserts (tofu guan, med khaonon), Thai foods (protein crisp, cooked baby food, canned evaporated soybean milk, taow-huey, kanom ping kaset). Fermented foods: Natto, hama-natto, tao tjo (a miso-type product made in Indonesia and Thailand), ontjom (made from peanuts, coconut press cake, or okara), kochu chang, ketjap, sufu, yogurt-type products, tauco, soy sauce, miso, tempeh. Western world type products. Full fat soy flour (enzyme active, heat treated). Soybean hulls. Whole soybeans in animal feed. Chapatty [chapati]. Full fat soy grits. Heat treatment of soybeans. Heat treatment and texturizing. Low-fat products. Snacks (soynuts—dry roasted or oil roasted, plain or seasoned). Soybean sprouts. Soy butter [soynut butter]. Combinations of soybeans and cereals. Soybeans as vegetables (mao-tou, edamame, or fresh green soybean). Defatted products. Nutrition. Soybean handling and equipment considerations. Solvent plant considerations. Address: Food Ingredients (Minnesota) Inc., 2121 Toledo Ave. North, Golden Valley, Minnesota 55422.

3426. **Product Name:** Miso Magic.

Manufacturer's Name: Lightning Dudes. Div. of America's Heartland Foods Inc.
Manufacturer's Address: 2619 Ryan Dr., Indianapolis, IN 46220. Phone: 317-257-9101.

Date of Introduction: 1989. September.

Ingredients: Cold Mountain mellow white miso, safflower oil, lemon juice, honey, Dijon mustard, onion powder or garlic.

Wt/Vol., Packaging, Price: 12 oz jar.

How Stored: Refrigerated.

New Product–Documentation: Talk with Tom Main, the developer. 1989. Oct. 5. This is a thick sauce which was introduced in September 1989 and is presently sold only locally. Label. 1989. 3 by 4.5 inches with an irregular shape. Full color and very nicely done. A little elf/angel with wings is touching its magic wand to a dollop of the white miso sauce atop a flowerette of broccoli, accompanied by peas, sliced celery and carrot, with a big ripe tomato in the background. "All purpose sauce. Original. Refrigerate after opening."

3427. Liu, Fu-Kuang. 1989. Food uses of soybeans [in China]. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 148-58. Chap. 10. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [7 ref] Address: Wuxi Light Industry Inst., Wuxi, Jiangsu 214036, The Peoples' Republic of China.

3428. Lusas, Edmund W.; Erickson, D.R.; Nip, Wai-Kit. eds. 1989. Food uses of whole oil and protein seeds. Champaign-Urbana, Illinois: American Oil Chemists' Society. v + 401 p. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. No index. 24 cm. [300+ ref]
 • **Summary:** Of the 24 chapters, the first 10 are entirely about soybeans and soyfoods, and 5 of the remaining 14 chapters are partly about soya. Many individual chapters are cited separately. Address: 1. Protein R&D Center, Texas Engineering Experiment Station, The Texas A&M.

3429. Smith, Keith J. 1989. World production, availability and variety differences of soybeans. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. Food Uses of Whole Oil and Protein Seeds. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 1-11. Chap. 1. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [11 ref]
 • **Summary:** Contents: Introduction. Composition. Required characteristics: For soy milk, tofu, miso, natto, soy sprouts. Conclusions.

The most desired characteristics of soybeans for food processing include: Large seed size, high protein content, high quality, reasonable price. The characteristics desired for each of the soyfoods mentioned above are given.

Table 1.1 shows world production of the eight major oilseeds in million metric tons from 1981-82 to 1985-86. Over this 5-year period, total production of the eight oilseeds has grown by 14.6%, from 169.4 to 194.2. In descending order of production, the eight are: Soybean 96.0. Cottonseed 34.1. Peanut 19.7. Sunflowerseed 18.6. Rapeseed 18.6. Copra (dried coconut meat, 5.0). Flaxseed 2.6. Palm kernel 2.3. Source: Foreign Agricultural Service, USDA. Address: American Soybean Assoc., P.O. Box 27300, St. Louis, Missouri 63141.

3430. Holzapfel, Robert. 1989. The Farm in Tennessee and seitan made with miso (Interview). *SoyaScan Notes*. Oct. 12. Conducted by William Shurtleff of Soyfoods Center.
 • **Summary:** The Book Publishing Co. at The Farm is planning to publish a book on seitan. There are two ways of making seitan: from wheat flour or from gluten flour. The former method is very wasteful of the nutrients in wheat, befouls the sewage system with wheat starch, takes a long time, and gives a lower yield of final product. The method using gluten flour gives no waste, and is quick and easy. Two companies in America that make or sell gluten flour are Arrowhead Mills (Hereford, Texas) and Nature's Harvest (A Seventh-day Adventist company in Michigan).

To make seitan, mix 3 cups water with ½ cup miso and garlic granules or powder to taste. Stir this into 4 cups gluten flour in a bowl. Mix until it becomes elastic, then knead until a uniform loaf is formed. Tear off chunks and shape into patties. Bake on a tray at 350°F for about 10 minutes on side, until nicely browned and savory. The resulting product has the texture and taste of meat. Address: President, The Book Publishing Co., P.O. Box 99, 156 Drakes Lane, Summertown, Tennessee 38483. Phone: 615-964-3571.

3431. Committee on Dietary Allowances, Food and Nutrition Board, National Research Council. 1989. Recommended Dietary Allowances, 10th revised ed. Washington, DC: National Academy of Sciences. x + 285 p. Oct. Index, 24 cm. 7th ed. was 1968. 8th ed. was 1974. 9th ed. was 1980. [200* ref]
 • **Summary:** Recommended Dietary Allowances (RDAs) have been prepared by the Food and Nutrition Board since 1941. The first edition was published in 1943 to provide "standards to serve as a goal for good nutrition."

This book expands the role of calcium in the diet: For young adults (age 19-24) it has been increased to 1200 mg/day, from 800 mg/day. Those with the maximum RDA of 1200 mg/day for calcium are males age 11-14, females age 11-24, and pregnant and lactating women. Males and

females from age 25 and up, and children from age 1-10, still have an RDA of 800 mg/day.

The RDA for iron has been lowered for women of reproductive age to 15 mg/day from 18 mg/day. Iron is a constituent of hemoglobin, myoglobin, and a number of enzymes and is therefore an essential nutrient for humans. Heme and nonheme forms of iron are absorbed by different mechanisms. Heme iron, which is highly absorbable, is found only in animal tissues. "The proportion of heme iron in animal tissues varies, but it averages about averages about 40% of the total iron in all animal tissues, including meat, liver, poultry, and fish. The remaining 60% of the iron in animal tissues and all iron in vegetable products is present as nonheme compounds... The two most well-defined enhancers of nonheme iron are some organic acids (especially ascorbic acid [vitamin C]) and the animal tissues present in each meal. On the other hand, some dietary and medicinal substances such as calcium phosphate, phytates, bran, polyphenols in tea, and antacids may decrease nonheme iron absorption substantially."

The RDA for vitamin B-12 has been lowered from 3 to 2 mcg/day; World Health Organization recommends only 1 mcg/day. Selenium and vitamin K have now been given RDA status. It is recommended that smokers consume almost twice as much vitamin C as non-smokers. Other major revisions appear in the RDAs for zinc, folate, and vitamin B-6.

In the chapter on minerals, section on Calcium (p. 174-84), has the following headings: Introduction, calcium absorption, dietary sources and usual intakes (calcium-precipitated tofu is listed as a good source), bone formation and retention, relationship to phosphorus and protein intakes, other potential functions, recommended allowances (adults and adolescents, pregnancy and lactation, infants and children), excessive intakes and toxicity.

The average American consumed 743 mg/day of calcium in 1977-78. Intake was generally higher in males than in females. Dairy products contribute more than 55% of calcium intake of the U.S. population (Block et al., 1985). "An increase in protein intake reduces fractional tubular reabsorption and results in an increase in urinary calcium excretion. In contrast, an increase in phosphorus intake increases fractional reabsorption and causes urinary calcium to decrease." But some studies (Spencer et al., 1988) have failed to demonstrate effects of dietary phosphorus intake on calcium balance at adequate levels of calcium intake.

For details on vitamin K, see p. 107-14. Vitamin K (fat-soluble) is the name of a group of compounds. "Compounds with vitamin K activity are essential for the formation of prothrombin and at least five other factors (factors VII, IX, and X, and proteins C and S) involved in the regulation of blood clotting... Defective coagulation of the blood is the only major sign of vitamin K deficiency." "The vitamin K content of commonly consumed foods is not known with

precision and therefore is not given in food composition tables... Green leafy vegetables, which provide 50 to 800 micrograms [mcg] of vitamin K per 100 gm of food, are clearly the best dietary sources. Small but significant amounts of vitamin K (1 to 50 mcg/100 gm) are also present in milk and dairy products, meats, eggs, cereals, fruits, and vegetables... A normal mixed diet consumed daily by a healthy adult in the United States has been estimated to contain an average of 400 to 500 mcg of vitamin K." Address: Washington, DC.

3432. **Product Name:** Jaclyn's Non-Dairy Alfredo Sauce, and No Tomato Pasta Sauce [Each Seasoned with Miso].
Manufacturer's Name: Jaclyn's Food Products, Inc.
Manufacturer's Address: P.O. Box 1314, Cherry Hill, NJ 08034. Phone: 609-983-2560.

Date of Introduction: 1989. October.

Ingredients: Alfredo: Tofu, organic white miso, water, organic brown rice flour, garlic, imported olive oil, sea salt, natural herbs and spices. Pasta Sauce: Fresh organic carrots, squash, water, onion, green pepper, garlic, imported olive oil, organic red miso, red wine vinegar, sea salt, natural herbs and spices.

Wt/Vol., Packaging, Price: 16 oz jar.

How Stored: Shelf stable; refrigerate after opening.

New Product-Documentation: Leaflet. 1989. April. "The Alfredo sauce can be used in your favorite Fettuccine Alfredo recipe. Try it over noodles, whole grains, or steamed vegetables."

Tardosky. 1989. Whole Foods. Nov. p. 50. Talk with Robert Savar. 1989. Nov. 13. The non-dairy alfredo sauce is made with tofu and mellow white miso. The tomato sauce is made with organic carrots, squash, and red miso.

3433. **Product Name:** Tofu Burgers, Teriyaki Burgers, Miso Burgers, Tofu Nuggets [Plain, or Barbeque].

Manufacturer's Name: La Soyarie.

Manufacturer's Address: 25 rue St. Etienne, Hull, QUE, J8X 1H5, Canada. Phone: 613-235-5356.

Date of Introduction: 1989. October.

Ingredients: Incl. tofu, soy sauce.

How Stored: Refrigerated.

New Product-Documentation: Soya Bluebook. 1989. p. 102-03. Contact: Koichi Watanabe, President.

SoyaCow Newsletter. 1994. July/Sept. Mr. Koichi Watanabe is president of La Soyarie in Hull, Quebec.

3434. Lima N.V. 1989. Lima: Tarif détaillant [Lima Foods catalog and price list]. Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium. 9 p. [Fre]

• **Summary:** This macrobiotic food catalog was bound into the back of the Bonneterre catalog at a 1989 food expo in Paris. Lima sells the following soyfoods, each preceded by its product category: Fresh products: Skewered seitan/tofu,

Presto natural tofu, Presto tofu legumes/vegetables, Presto tofu cheese. Legumes: Yellow soybeans. Sprouts: Green soy/mung (500 gm or 5 kg). Flours: Roasted soy flour. Vegetarian preparations: Lima soy sauce (500 ml or 1 liter), tofu, natural tempeh, tempeh with shoyu. Dressings: Salad dressing with soy and tomato, Salad dressing with soya herb. Specialties: Organic miso (1 month), Hacho miso, Barley miso (organic or regular), Rice miso (organic or regular), Heiwa brand Instant miso soup (regular or red, From Japan), Tamari (250 ml, 1 liter, 18 liters), Mansan Tamari from Japan, Shoyu (250 ml, 1 liter, 18 liters), Sakai shoyu from Japan. They also carry one book titled "Tofu dans le Cuisine Macrobiotique" (Eddie Hara, 1982).

Accompanying the catalog is a packet of individual full-color sheets with photos of products in a folder titled Lima: Quality is our passion." There are sheets titled "Vegetable products rich in protein," "Tamari and shoyu," "Japanese specialties (incl. Heiwa brand shoyu and tamari), and a brochure titled "Lima: 30 years as a producer of organically grown (biological) foods." It describes the life and work of Edgar Gevaert (poet, artist-painter, ecologist, and a leader of the European peace movement). Address: Sint-Martens-Latem, Belgium.

3435. **Product Name:** [Nerimiso (Ginger, Garlic, Sesame, Almond, or Peanut), and Tekka Miso].

Foreign Name: Neri Miso (de Gengibre, de Alho, de Sésamo), Tekka Miso.

Manufacturer's Name: Miso Produções.

Manufacturer's Address: Rua do Douro, No. 92 r/c, Rebelva, 2775 Parede, Portugal. Phone: (1) 247 50 68.

Date of Introduction: 1989. October.

Ingredients: Ginger nerimiso: Miso, ginger, rice syrup (mizuname), saké.

Wt/Vol., Packaging, Price: Nerimiso: 200 gm. Tekka miso: 100 gm.

Nutrition: Per 100 gm.: Calories 419, protein 15.8 gm, carbohydrates 24.8 gm, sodium 1506 mg.

New Product-Documentation: Letter from Miguel Azguime, owner. 1989. Oct. 31. The rice miso is aged 2 years in wooden kegs. The sweet rice miso is aged 1-2 months. There are 5 varieties of Nerimiso.

Labels. 1989. 7 by 1.75 inches. Black on white.

Illustration of a Tibetan vajra on each label.

3436. McCarty, Meredith. 1989. Fresh from a vegetarian kitchen. Turning Point Publications, 1122 M Street, Eureka, CA 95501-2442. ii + 263 p. Illust. by Bernice Kagan. Index. 28 cm.

• **Summary:** A macrobiotic cookbook containing over 450 recipes, many using tofu (at least 20, including many innovative sauces and dressings), tempeh, miso, amazake, soy sauce, soymilk, and amazake. A section titled "Soyfoods: Tofu and tempeh" (p. 151-55) contains 6 recipes

and several variations. On page 202 is a recipe titled "Amazake-Soymilk" in which 3/4 cup soymilk is mixed with 1/4 cup plain amazake. The author has co-directed this natural health center in northern California since 1977. Address: Eureka, California.

3437. *SoyaScan Notes*. 1989. Influence of Japanese and Japan on soyfoods in America (Overview). Dec. 7. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The Soyfood Center's SoyaScan database presently contains 30,790 publications and commercial products related to soya. Of these, 876 (2.9%) concern the influence of Asian-Americans (Japanese, Chinese, Koreans, or Indonesians) or their home countries on soyfoods. Of these 876 records, 638 (73%) concern Japanese influence, compared with 178 (20%) that concern Chinese influence—including Chinese from Taiwan, Hong Kong, Singapore, etc. Thus Japanese influence on soyfoods in America is much greater than that of any other Asian cultural group. We can identify at least seven major areas of influence:

1. Soyfoods Terminology. It is interesting to note that many of the most popular soyfoods in America are most widely known by their Japanese names. We say tofu (not doufu or bean curd), miso (not jiang or soybean paste), natto, okara (not soy pulp), yuba (not doufu-p'i or soybean skin). Even "soy" (as in soy sauce) is derived from the Japanese word "shoyu." Increasingly Americans interested in natural foods also use the terms shoyu and tamari to distinguish them from HVP soy sauce.

2. Kikkoman. By far the most influential Japanese soyfoods company in America today is Kikkoman, just as soy sauce is by far the most important soyfood product. Kikkoman was also the first Japanese company to introduce soyfoods to America. In 1868 the first Japanese immigrants to Hawaii took kegs of Kikkoman brand shoyu with them. In 1879 Kikkoman brand shoyu was registered in California, where it was exported to Japanese immigrants. Exports rose steadily, until between 1949 and 1954 exports of Kikkoman shoyu to the U.S. ranged from 213,000 to 305,000 gallons a year. Kikkoman's first real attempt to reach any foreign market dates from 1956 when, during the U.S. presidential elections, Kikkoman ran television ads to promote its product to mainstream American audiences as a seasoning for meat, fish, and poultry. In 1957 Kikkoman International Incl., a new sales company was established in San Francisco. Sales skyrocketed. In 1973 Kikkoman opened a huge modern shoyu plant at Walworth, Wisconsin. In 1976 Kikkoman passed La Choy to become America's best-selling soy sauce.

3. Introducing Soyfoods to Hawaii. The first Japanese who arrived in Hawaii in 1868 brought shoyu and miso with them. The earliest known soyfoods company there was a shoyu brewery started in 1891 in Honolulu by Jihachi Shimada. This was also the earliest known soyfoods

company started by a Japanese anywhere in the Western world. Hawaii became part of the USA in 1898 by annexation. Hawaii and California were the first two areas in the U.S. where soyfoods became widely available. During the 20th century, Japanese started roughly 183 companies in Hawaii making shoyu, miso, and tofu—far more than Chinese (6) or Koreans (2). They developed innovative new products—such as sweet Hawaiian-style shoyu and miso. These products profoundly influenced the food life of Hawaii.

4. Soyfood Manufacturers in the USA. The earliest known soyfoods manufacturer in the Continental USA was a company (the name is unknown) run by the wife of Chieko Hirata that started making tofu in Sacramento in about 1895. The second earliest was Yamamori Jozo-sho, which started making shoyu in San Jose, California, in 1897. Many of the earliest soyfoods companies in America were run by Japanese Americans. By 1942 at least 158 soyfoods manufacturing companies had been started in America by Asian Americans; of these, 143 (91%) were run by Japanese Americans. When *The Book of Tofu* was published in 1975, it listed 55 tofu companies in America, all run by Asian-Americans; 39 were Japanese- and 16 were Chinese-run. Today America's two largest tofu companies are both run by Japanese Americans: Azumaya Co. in San Francisco, and House Foods & Yamauchi Inc. in Los Angeles. Hawaii's three largest tofu companies are also run by Japanese Americans: Aloha Tofu Co., Kanai Tofu Factory, and Hawaii Tofu. Morinaga Nutritional Foods in Los Angeles and Kikkoman Foods in San Francisco both import large amounts of aseptically packaged long-life silken tofu from Japan.

Another major manufacturer is San-Jirushi Corp. of Kuwana, Mie-ken. In the late 1970s San Jirushi started exporting tamari and soybean miso to America. They set up an office in the early 1980s and began to promote their product as "real" tamari to industrial food processors and the natural foods market. In Sept. 1987 the company opened a state-of-the art tamari plant in Richmond, Virginia, with a capacity of 1 million gallons a year. The company now has 75% of the industrial soy sauce market in America.

In Oct. 1986 a major new joint stock company named American Soy Products began producing Edensoy soymilk in Clinton, Michigan. It was a joint venture between Eden Foods and 4 Japanese companies: Marusan Ai, Kawatetsu Shoji, Muso Shokuhin, and Seikensha. Edensoy has since become America's best-selling soymilk. Prior to 1986 much of the soymilk sold in America was made in Japan.

Finally, three of America's 4 largest miso manufacturers are run by Japanese-Americans. The largest is Miyako Oriental Foods in Los Angeles. The other two are located in Hawaii.

5. Soyfoods Imports from Japan. The first importers of shoyu and miso were Japanese distributors such as Japan

Foods Corp., Mutual Trading Co. and Nishimoto. But starting in 1962 American macrobiotic and natural foods companies started to import large amounts of shoyu and miso. Pioneers were Chico-San, Erewhon, Eden Foods, Westbrae, Edward & Sons, Tree of Life, and Great Eastern Sun. U.S. imports of soy sauce from Japan jumped from 1.7 million lb (174,400 gallons, worth \$317,000) in 1949, to 18.6 million lb (1,897,000 gallons, worth \$3,116,000) in 1972, an 11-fold increase in quantity during only 23 years.

6. Teachers and Information. Many Americans first learned about soyfoods from Japanese teachers, especially macrobiotic teachers, such as George and Lima Ohsawa, Michio and Aveline Kushi, Herman and Cornelia Aihara, and Noboru Muramoto. All have written many influential books and lectured and taught extensively since the 1960s. In addition, many young Americans learned how to *make* soyfoods from these macrobiotic teachers. Moreover, Japan is Asia's best source of information about soyfoods. For example, the Soyfoods Center's SoyaScan database contains 5,095 publications and products about soya and Japan, compared with 1,867 on soya and China or Taiwan.

7. Tofu Equipment Manufacturers. Hundreds of tofu companies have started in America since the mid-1970s. The majority of these are run by Caucasian Americans and most use specialized tofu equipment made in Japan by Takai Tofu & Soymilk Equipment Co., or by Sato Shoji.

3438. Krieger, Verena. 1989. Soja als Nahrungsmittel: genutzt oder missbraucht? [Soya as a food: Used or misused?]. *Zum Beispiel (Switzerland)* No. 12. p. 15-17. Dec. 21. [Ger]

• **Summary:** Soybeans can be fermented to make miso, soy sauce, tempeh, or natto. Or the protein can be extracted in traditional ways to make soymilk, tofu, or yuba. One can also make soy sprouts. In the Western world, soybeans are mostly misused to make high-protein meal for livestock fodder, and vegetable oil. Address: Lucerne, Switzerland.

3439. Kuntjoro, Sri Utami; Kusnadi, N.; Sayogyo, -. 1989. Demand for corn, cassava and soybean in human consumption: A case study in Java, Indonesia. *CGPRT Working Paper* No. 2. xvii + 116 p. Dec. 25 cm. [19 ref]

• **Summary:** Contains much original, detailed information and statistics on consumption, demand, and demand elasticity for secondary food crops (*palawija*) in Indonesia. The main secondary food crops are soybeans (including the soybean products *tahu* {tofu}, *tempe* {tempeh}, *kecap* {soysauce}, and *tauco* {Indonesian-style miso}), corn, cassava, and peanuts. "Pulses, soybean in particular, represent (after cereals) the most important source of vegetable protein for the people of Indonesia. On the whole, soybeans are consumed in the form of tahu (bean curd), tempe (fermented soybean) and kecap (soysauce). Among low-income households, tahu and tempe, which are

relatively cheap in price, are (after cereals) a major source of vegetable protein. According to Sayogyo (1985), tempe is also popular among people in the high income groups.

The National Socio-Economic Survey (Susenas), conducted by the Central Bureau of Statistics, collects socio-economic data from a large number of households throughout Indonesia. The use of chemical fertilizer on soybeans has increased from 5.19 kg/ha in 1973 to 80.39 kg/ha in 1982. Per capita consumption of soybeans has risen from 3.28 kg/year in 1968 to 4.45 kg/year in 1983. In the peak year, 1979, it was 5.33 kg/year.

Table 4.2 shows protein consumption from secondary food crops in 5 Javanese provinces in 1981. The amount of protein contributed daily per capita to the Indonesian diet by soyfoods (in the forms of tempeh, tofu, soybeans, soy sauce [kecap], and miso [tauco]) is greatest in Yogyakarta (22.57 gm; 61.1% of total protein consumption), followed by Central Java (14.57 gm; 37.4% of total), Greater Jakarta (13.78 gm; 33.3% of total), East Java (12.96 gm; 32.8% of total), and West Java (6.44 gm; 14.9% of total). As people's income rises, they tend to consume more soyfoods. Soyfoods provide Tempeh makes the greatest contribution to protein intake in every province, followed by tofu, soybeans, soy sauce (kecap), and tauco (Indonesian miso). Tempeh makes the greatest contribution in Yogyakarta, where it provides 17.86 gm/capita/day of protein, or 60% of the protein supplied by secondary crops, and more than any other single source. The amount of daily protein per capita contributed by tempeh is next most important in Central Java (11.48 gm/day), followed by East Java (9.28), Greater Jakarta (8.98), and West Java (4.16). Tofu makes its greatest protein contribution in Greater Jakarta (4.54 gm/day), followed by Yogyakarta (3.57), East Java (3.49), Central Java (2.80), and West Java (1.99). Address: Agricultural economists, Bogor Univ. of Agriculture.

3440. Berthier, A.M. 1989. Soja, quelle place dans l'alimentation? [Soya: What is its place in the diet?]. *Revue Laitiere Francaise* No. 483. p. 35. [Fre]*

• **Summary:** A brief study of the composition and nutritive value of the soybean and products derived from it, such as soy sprouts, tofu, soy sauce, and miso.

3441. Combemale, Isabelle. 1989. Un nouvel outil de production du tofu en continu: Reportage soja [A new tool for the continuous production of tofu: Reporting on soya]. *Technique Laitiere [Process, Rennes]* No. 1038. p. 51-54. [Fre]

• **Summary:** A description of the installations at the cooperative "The Silos de Valence" used for automated, continuous tofu production. Describes processing conditions and the principal outlets for the products obtained: Miso, soymilk (flavored desserts), and by-products (okara).

Les Silos de Valence, a cooperative that produces soybeans in the south of France, first considered processing soybeans for human consumption while looking for new markets and more profitable high value-added products. In 1988, after market surveys and feasibility studies had confirmed the choice, they established a new company named Innoval. The new production plant in Valence is similar to the one built by Alfa-Laval for Cacoja at Issenheim in 1987. Soymilk base is continually processed up to the point where it is coagulated into tofu.

The new and innovative part of the plant is the concentration of the soymilk base using ultrafiltration (developed by Tech-Sep) [also a DTD patent!] and continuous dosing of the calcium sulfate coagulum, developed and patented by S.E.R.E.A. and equipment built by Steachma.

Simultaneously with coagulation, spices, herbs, vegetables, etc. are added. The total production is sold to the dairy industry, which markets and distributes the products.

The article ends by noting that large companies like Alfa-Laval and Nestle are interested in soybean utilization and many soymilk products are currently marketed by Celia, Triballat, and Est Lait dairy groups in France.

Black-and-white photos show: (1-4) Equipment inside the Innoval plant. (5) Several Innoval products, incl. Inno Fun. (6) An exterior view of the Innoval plant, with details about two companies: (1) Innoval—Address: Allée Joule, Les Auréats, 26014 Valence cedex. Director: M. Pastonnier. Asst. Director: Mr. Reynaud. Capital: 4.8 million francs, of which 70% is Silos de Valence and 28% is financial establishments. Personnel: 10. Expected transformation in 1989: 700 tonnes of grains. (2) Les Silos de Valence—Cooperative of cereal grain producers with capital in 1987 of more than 100 million francs. *Remise d'adhérents*: 5,300. *Producteurs outils*: 1,130. Personnel: 21. (7) Messrs. Tocart, Steachma, and Toulouse. (8) The front gate. Address: Ingénieur agro-alimentaire [France].

3442. Ito, A.; Nakagawa, Y.; Watanabe, H. 1989. Effect of orally given miso diet on the incidence of hepatic [liver] tumors in B₆C₃F₁ mice exposed to 252Cf. Paper presented at Chugoku Radiation Effect Discussion Meeting. Held 7 July 1989 at Hiroshima. *

3443. **Product Name:** [Rice Miso, Barley Miso, and Brown Rice Miso].

Manufacturer's Name: Kanta Kozaki GmbH.

Manufacturer's Address: Dammweg 16, D-7068 Urbach, West Germany. Phone: 07181/87170.

Date of Introduction: 1989.

New Product—Documentation: Letter from Bernd Drosihn of Viana Naturkost. 1990. April 8. A new Japanese miso company, Kanta Kozaki, has started in Germany near

Stuttgart. They are producing mugi, genmai, and kome miso.

Talk with Bernd Drosihn. 1995. Jan. 30. The owners of Kanta Kozaki are Hiroshi Kozaki (Japanese) and Karl Selgmann (German). This company many have started making miso a little earlier than Bernd's company, Viana. The German man conducted a lot of research on miso, and while doing that, he made miso.

Leaflet titled "Kanta Miso und neue Produkte" sent (faxed) by Bernd Drosihn. 1995. Jan. 30. The company's new products include the Kanta Miso Pickles. The first product of this line is Miso Pickled Cucumbers.

3444. Kato, K.; Akai, S.; Tominaga, S.; Kato, I. 1989. A case-control study of biliary tract cancer in Niigata Prefecture, Japan. *Japanese J. of Cancer Research (Gann)* 80:932-38. *

• **Summary:** Consumption of miso soup was inversely related to bile duct cancer, but not gall bladder cancer—although this relationship was not significant after adjustment for other variables.

3445. **Product Name:** Tofu, Soy Milk, Tempeh, Soy Ice Cream, Soy Punch.

Manufacturer's Name: Natural Cafe. Expanded to include La Soyarie by June 1994.

Manufacturer's Address: Mailing address: 73 Chaussee Rd., Castries, St. Lucia, West Indies. Plant: Union Hilltop Choc, Castries. Phone: 809-452-6421.

Date of Introduction: 1989.

New Product–Documentation: Plenty International. 1994. Jan. A Guide to Growing and Using Soybeans for Food. p. 30. This company makes fresh soyfoods.

Form filled out by Johnson Clarke, Manager. 1994. May 25. The plant is now located at Union Hilltop Choc, Castries, and the phone number is 809-450-2570. The company was founded in 1989. The founders were Johnson Clarke, Maya Clarke, and Ignatius Longville. The original purpose was to work as a group to produce high-quality foods at an affordable price and to educate the populace about soybeans. There have been no changes in the company address or ownership. Milestones: (1) When Johnson built a proper structure of concrete for processing; and (2) When CIDA (Canadian International Development Agency) gave the group a grant to purchase some equipment in 1991. Reasons for success: "I am the only person on the island that is processing [soybeans] on a commercial scale, and I take pride and joy in what I'm doing." The company makes tofu, soy milk, and tempeh, and it buys and markets Vitasoy soymilk, miso, soy oil, Mori-Nu tofu, and soy powder. They make about 100 lb/week of tofu, and they use about 7 gallons of soy milk to make soy ice cream and soy punch. The company's three best-selling products (in descending order of dollar value)

are tofu, soy punch, and soy ice cream. The company now employs 6 people. Their factory is 14 x 30 feet. Offices are in a separate building. Net sales last year were "not much" and the net worth of the business is "not much." "We are a small group of six and just making ends meet. We still have a long way to go in making the population of St. Lucia realize the true potential of soybeans. I don't know if we can continue since we are poorly equipped for processing the beans and packaging the products to sell at supermarkets and shops. We are presently selling only at one small outlet we own. We could sell at hotels, supermarkets, and shops if we had proper packaging equipment such as a vacuum packer." Note: This is the earliest known commercial soy product made in St. Lucia.

3446. **Product Name:** [Tofu, Tofu (in Jars), and Tofu & Miso Paté Spread].

Foreign Name: Tofu, Tofu Tres Delicias, Paté -de Tofu y Miso.

Manufacturer's Name: Vegetalia / Productos Naturales.

Manufacturer's Address: Sant Andreu, s/n, Castellcir, Barcelona, Spain. Phone: 93/866-8298.

Date of Introduction: 1989.

New Product–Documentation: Letter from Bernd Drosihn of Viana Naturkost. 1990. April 8. A tofu company in Spain, owned by Salvador Sala, now sells tofu in jars, and tofu spreads.

Letter from Javier Arocena Aramburu of Zuitzo in Spain. 1992. Dec. 14. Vegetalia is one of four soyfoods manufacturers (including his own company) that he is aware of in Spain. It is run by Salvador. The address is now given as: Plaza de la Era s/n, Castellcir (Barcelona), Spain.

Booklet titled *Recetario* sent by Penelope Stewart of Fair Oaks, California. 1993. July 19. It gives the company address and phone as "Castellcir, Tel. 93-866 61 61." The introduction states that Vegetalia was formed in April 1986 by Salvador Sala, Carmen and Tomás. As of 1992, the company is 6 years old.

Letter from Joaquim Castillo. 1998. May 22. Vegetalia is one of three pioneering soyfoods companies in and around Barcelona.

3447. Acuff, Steve. 1989. *Das makrobiotische Gesundheitsbuch* [The macrobiotic health book. 2nd ed.]. Munich, West Germany: Goldmann Verlag. 256 p. Recipes by Karen Acuff. [Ger]

• **Summary:** This book of macrobiotic philosophy and cookery contains 5 tempeh recipes, and also mentions miso, tofu and tamari. Flora Yap (4/92) notes that the author travels from town to town, lecturing and selling his book. Certain groups are inviting him to speak, renting a place for him to lecture and doing the publicity (paid admission). Address: Idaho, USA.

3448. Belleme, Jan. 1989. Traditional foods of Yaita: Life on a Japanese farm. *Palate Pleasers of Japan (Los Angeles, Calif.)* 8:65-70, 72-74.

• **Summary:** The story of how John and Jan Belleme learned as apprentices to make miso with the Onozaki family on the outskirts of Yaita, Japan—100 miles north of Tokyo. Photographs by John Belleme. Address: North Carolina.

3449. Cituk, Kathy; Finnegan, John. 1989. Natural foods and good cooking. Elysian Arts, 20 Sunnyside Ave. Suite A161, Mill Valley, CA 94941. 122 p. No index. 22 cm. [64 ref]

• **Summary:** This non-vegetarian cookbook contains considerable introductory information about and recipes using amazake (p. 16, 41, 56, 91, 98-99, 103), miso (p. 43), soymilk (p. 43), mochi (p. 44, 54), tamari soy sauce (p. 46), tofu (p. 46, 51, 80, 88, 96), tempeh (p. 46). Numerous references are made to a book by John Finnegan (1989) titled “Amazake Rice Nectar.” Address: Mill Valley, California.

3450. Ebine, Hideo. 1989. Industrialization of Japanese miso fermentation. In: K. Steinkraus, ed. 1989. *Industrialization of Indigenous Fermented Foods*. New York and Basel: Marcel Dekker, Inc. xii + 439 p. See p. 89-126. [60 ref]

• **Summary:** Contents: Introduction. The earliest documents seen that mention miso. Raw materials used in ancient times and today. Industrial / Commercial production today. Contrast between indigenous and modern processing. Critical steps in manufacture / fermentation. Major problems in industrialization. Optimal environmental conditions for the microorganisms. Essential microorganisms for fermentation. Microorganisms that cause spoilage. Chemical / Biochemical changes during fermentation. Address: Director, Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo, Japan 104.

3451. Ebine, Hideo. 1989. *Miso shōyu nyūmon* [Introduction to miso and shoyu]. Tokyo: Nihon Shokuryo Shinbunsha. Hatsubaimoto Nihon Serufu Saisu Kyokai. 282 p. Illust. 18 cm. Series: Shokuhin Chishiki Mini Bukkusu Shirizu (Knowledge of Foods—Mini-Books Series). [Jap]* Address: Director, Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo, Japan 104.

3452. Echols, John M.; Shadily, Hassan. 1989. An Indonesian-English dictionary. Third ed. Ithaca, New York, and London: Cornell University Press. xix + 618 p. 24 cm. [Ind; Eng]

• **Summary:** Soy-related words include: (1) bijan (sesame; also wijen or bijen). (2) bungkil kedelai (soybean meal). (3) kacang (pea, bean, peanut), including kacang asin (salted peanuts), kacang atom or kacang ganéfo (peanuts fried in

batter), kacang goréng (peanuts fried crisp), kacang hijau or kacang ijo (mung bean), kacang kedelai (soybean), kacang tanah (peanut). (4) kécap (soy sauce; kecap ayam {chicken prepared with soy sauce}). (5) kecipir (four-sided bean eaten as a vegetable [winged bean; *Psophocarpus tetragonolobus*]). (6) kedelai, kedelé (soybean). (7) oncom (fermented cake made from soybean sediment). (8) ragi (yeast, fermentation agent). (9) tahu (tofu, soybean curd), including tahu goréng (fried tofu), tahu isi (tofu filled with meat), tahu kuning (firm yellow tofu), tahu pong (deep-fried puffy tofu), tahu témpé (tofu and tempeh).

(10) tahu (a by-product of tofu similar to yogurt in consistency). (11) takoa, takoah (see takua). (12) takua (firm spiced tofu). (13) taosi (see tauci [soy nuggets]). (14) tapai, tapé (sweet cake made of slightly fermented rice or tubers). (15) tauci, tauco, taucyo (fermented bean paste [like miso] used as a condiment).

Note: This is the earliest (and only) English-language document seen (Feb. 2009) that uses the word “taucyo” to refer to Indonesian-style miso. “Taoci” probably refers to soy nuggets, not to miso.

(16) taugé (bean sprouts). (17) témpé (fermented soybean cake, tempeh; something trivial and unimportant or low grade in quality; *Dlm jaman penjajahan org Indo témpé pribumi* = “During the colonial times the Eurasians considered the natives to be no better than tempeh”). Address: 1. Ithaca, New York; 2. Jakarta, Indonesia.

3453. Fukushima, Danji. 1989. Historical development of soy sauce and soy nuggets in China (Document part). In: K. Steinkraus, ed. 1989. *Industrialization of Indigenous Fermented Foods*. New York and Basel: Marcel Dekker, Inc. xii + 439 p. See p. 2-8.

• **Summary:** “1. Chiang. In 1979, Kinichiro Sakaguchi proposed a unique hypothesis regarding the origin of soy sauce and miso as a result of historical biochemical investigations, and this hypothesis was later introduced by this author in English (Fukushima, 1985a, 1986b). However, new literature on the origin of soy sauce and miso appeared based on more detailed historical evidence (Pao 1982a, 1982b; 1984a, 1984b). According to these papers, soy sauce was derived from a Chinese food called ‘chiang’ (‘hishio’ in Japanese).

“Chiang is a tasty mash product and does not come in a liquid form. Therefore chiang belongs in the category of ‘miso’ in Japan. The first record on chiang can be found in the book entitled *Chou-li* (*Shurai* in Japanese) by Chou-kung (*Shuko* in Japanese), which was published around 1,000 B.C. in the Chou (*Shu* in Japanese) dynasty (1,222 BC to 249 BC). This book covers the matters on the early years of the Chou dynasty in ancient China (about 3,000 years ago). According to this document, chiang was made by the following procedure. First, yellow aspergilli were grown on millet. (Such mold-grown cereals are called ‘koji’

in Japanese.) Then the millet koji and the meat of fish, flesh, or fowl and salt were mixed with a good liquor in a bottle and kept for 100 days. Soybeans were not used in this chiang. The first literature in which soybeans appeared as a substitute for meat in chiang was the *Ch'i-min Yao-shu* (*Saimin-Yojutsu* in Japanese) by Chia Ssu-hsieh (Ka Shikyo in Japanese), the world's oldest encyclopedia of agriculture, published in 535 AD in China. This indicates that the chiang in which soybeans was used originated sometime between the Chou and Han dynasties, when the cultivation of soybeans prevailed. The meats in the chiang described in *Chou-li* were gradually replaced by soybeans in the course of time and further cereals such as wheat, barley, and rice came to be used instead of millet, resulting in the production of many types of chiang. In the process of making chiang during these periods, soybeans were not used as a raw material in koji; rather they were added to the harvested koji prepared from the other cereals. The soybeans were digested by the enzymes of the koji. This digestion mixture was the final product, which was in the form of a mash. The liquid products which belong to the category of soy sauce did not appear in the literature before the later Han dynasty (about 25-220 A.D.).

"There is a description of the liquid product which was made by separating the liquid portion from the chiang in *Ssu-ming Yueh-ling* (*Shimin-Getsurei* in Japanese), published by Ts'ui Shih (Sai Shoku in Japanese) in the later Han dynasty. This liquid was called chiang ch'ing which means 'clear chiang.' The manufacturing processes of chiang and chiang ch'ing are shown in Figs. 1 and 2. Chiang ch'ing is a prototype of soy sauce but it differs from 'chiang-yu' which means literally shoyu or soy sauce in the Chinese characters. The first appearance of the name of chiang-yu was in *Shan-chia Ch'ing-kung* (*Sanya-Seikyo* in Japanese) by Lin Hung (Rin Ko in Japanese) in the Sung dynasty (960-1127 AD).

"The first record indicating use of all the raw materials to prepare koji for soybean chiang appeared in the *Nung-sung I-shin Ts'o-yao* (*Noso-Ishoku-Satsuyo* in Japanese) by Lu Ming-Shan (Ro Meizen in Japanese), published in the Yuan (Gen in Japanese) dynasty (1271-1368 AD). The flow sheet of this soybean chiang is shown in Fig. 3." (In this process, soybeans are roasted, dehulled, cooked, then mixed with wheat flour and spontaneously molded to form koji. The koji is dried in the shade, winnowed, and pounded, then mixed with spices and salt water to form a mash, which is insulated and aged to make the soybean chiang.) The chiang-yu described in *Pen-ts'ao Kang-mu* (*Honso-Komoku* in Japanese), published in 1590 by Li Shih-chen (Ri Jichin in Japanese) in the Ming (Min in Japanese) dynasty, was also made with koji manufactured by using soybeans and cereals (Fig. 4). (In this process soybeans were cooked in water, mixed with wheat, and spontaneously molded to form koji. Salt water was mixed in with a paddle, then the mash

was insulated and aged. Finally it was filtered to make chiang-yu). The ratio of soybeans to wheat in the koji making was 3:2. This ratio is very close to that used in making regular Japanese shoyu, which is made by using equal amounts of soybeans and wheat, as will be described later. The general manufacturing methods of soy sauce in the Ch'ing (Shin in Japanese) dynasty are recorded in *Ch'ing-yuan Lu* (*Seienroku* in Japanese), written by Li Huanan (Ri Kanan in Japanese). Cooked soybeans and uncooked wheat were the raw materials used in koji making. The resultant koji was mixed with brine. After aging, the soy sauce was collected by pressing a deep bamboo colander into the aged mash and ladling out the liquid which had accumulated.

"The original chiang was a mash-type product made with a koji that had been prepared from wheat, barley, rice, etc., and not from soybeans. Therefore, the soybean constituents were only changed through the in vitro biochemical reaction by the enzymes from the mold grown on the cereals. Accordingly, the degree of change of the soybean constituents was not very great and most of the soybean proteins were partially hydrolyzed into polypeptides through the in vitro enzyme action. The degree of liquefaction was not very large and the flavor was not as strong. In the case of chiang-yu, however, mold is grown on both the soybeans and cereals and, as a result, the soybean constituents are changed largely through the biochemical reaction both in vivo and in vitro by the mold throughout the entire process of manufacturing. Accordingly, much of the soybean constituents can be liquefied. The soybean proteins are hydrolyzed to single amino acids and, therefore, the flavor is sharp and strong in chiang-yu. Thus, it can be concluded that (a) the progenitor of miso is chiang, originated in China about 3,000 years ago; (b) the progenitor of soy sauce is chiang ch'ing, originated in China about 2,000 years ago; (c) chiang ch'ing had developed into chiang-yu in China and the regular type of shoyu called koikuchi in Japan at least 1,000 years ago.

"It is an amazing fact that the Chinese had utilized the enzyme action of mold in food manufacturing as early as 3,000 years ago. They deliberately selected yellow aspergilli from many types of aspergilli because they best facilitated the manufacture of chiang. If the definition of 'biotechnology' is to make the products necessary for the welfare of humans by using life phenomena, it can be said that people in ancient China had already produced foods by biotechnology as early as several thousand years ago. In this sense, it is not an exaggeration to say that soy sauce was a pioneer of the actual application of biotechnology.

"2. Shih. Shih is a fermentation product of soybeans, the form of which is a tasty nugget with or without salt. Shih is classified into five types by the kind of microorganism used in its manufacture. Those are *Aspergillus* type (called shih in the areas of Pei-ching, Hu-nan sheng, and Taiwan; and

called hamanatto in Japan), *Mucor* type (shih in the area of Shan-tung sheng and natto in Japan), *Rhizopus* type (tempeh in Indonesia), *Bacillus* type (shih in the area of Shan-tung sheng and natto in Japan), and *Neurospora* type (oncom in Indonesia). The shih described here is the shih of *Aspergillus* type, which relates to soy sauce.

“The earliest literature in which shih appeared is *Shih-chi* (*Shiki* in Japanese) by Ssu-ma Ch’ien (Shiba Sen in Japanese), which was published in 85 BC. Shih is also described along with chiang in *Shuo-wen Chie-tzu* (*Setsubun-kaiji* in Japanese) by Hsu Shen (Kyoshin in Japanese), the oldest dictionary in China published in 121 AD in the later Han dynasty. The raw material of the shih is soybeans as shown in Fig. 5. (In the process described in the *Shi-ching* by Hsie Feng (which survives only in the *Ch’i-min yao shu*), soybeans are washed, soaked, drained, and steamed. The cooked soybeans are cooled, then spread, furrowed, and piled. The last 3 steps are repeated 3 times a day for 3 days until the beans have become spontaneously molded. The resulting soybean koji is mixed with soybean cooking liquid, barley koji, and salt, put into an earthen pot, sealed, and insulated. It is then dried in the shade, mixed with a mulberry leaf extract, and steamed. The last 3 steps are repeated 3 times, resulting in salted soybean shih. In the second process described in the *Ch’i-min yao-shu*, soybeans are winnowed, cooked, drained, and cooled. They are piled, the temperature is measured, and then they are stirred. The last 3 steps are repeated 3 times until they are spontaneously molded. They are then spread and furrowed to make soybean koji. This is winnowed, washed, drained, dried, moistened, piled, fermented, and dried to give unsalted soybean shih.) Therefore the resultant shih (soybean nugget) contains a high amount of protein. In shih, much of the soybean constituents are present in a liquid state. The soybean proteins are hydrolyzed to single amino acids and, therefore, the flavor is sharp and strong. The flavor constituents of shih can be extracted easily by a salt solution. The original shih was served as nuggets; the brine extract came to be used as a seasoning gradually. In *Chi-min Yao-shu* (535 AD), there is a description of about 70 kinds of cookeries using shih extracts. It should be mentioned that shih and its brine extract developed into today’s tamari shoyu in Japan.” Address: Managing Director, Kikkoman Corp., Chiyoda-ku, Tokyo, Japan.

3454. Fukushima, Danji. 1989. Introduction of soy sauce to Japan (Document part). In: K. Steinkraus, ed. 1989. *Industrialization of Indigenous Fermented Foods*. New York and Basel: Marcel Dekker, Inc. xii + 439 p. See p. 9-10.

• **Summary:** “There is no literature on the exact time chiang and shih (soy nuggets) were introduced into Japan. In 702 AD, however, the Hishiotsukasa, the Bureau for the Regulation of Production, Trade and Taxation of Hishio, was established by the Taiho-Ritsuryo, one of Japan’s

earliest constitutions. This bureau was located at the imperial palace and produced various kinds of hishio (chiang) which was consumed by the imperial household. Among these products, the word ‘misho’ is found with the words ‘chiang’ and ‘shih.’ It should be noted that the word ‘misho,’ which is very close to the present word ‘miso,’ is found as one of the products in the bureau. Misho is also found in *Engishiki*, the enforcement regulation of the statutes, which was completed in 927 AD and became effective in 967 Japan. The first appearance of the present word ‘miso,’ was in *Nihon-Sandai-Jitsuroku*, a Japanese dictionary published in 1597 during the Muromachi period. In the Edo period (1603-1867), several pieces of literature describing miso and shoyu were written, such as *Wakan Sansai Zue* (Narushima, 1712), *Honcho Shokkan* (Hitomi, 1695), *Mankin Sangyotai* (Miake, 1732), *Yoshu Fushi* (Kurokawa, 1682), and the like. The manufacturing processes described in these works are close to the present methods for producing miso and koikuchi-shoyu, thus it is presumed that the basic manufacturing processes of today’s Japanese soy sauce had been formed by the early 17th century.

“In the second half of the 17th century, large-scale, industrial production of soy sauce began for consumption in large cities such as Edo (now Tokyo). Surprisingly enough, there are written records that soy sauce had been exported to India, southeast Asia, and Europe as early as the middle of the Edo period [the Edo Period was from 1600 to 1868] (Noda Shoyu Co. 1953). According to documents of the Dutch East India Company stored in the Archives in the Hague, Holland, soy sauce was exported [by Dutch merchants] from Nagasaki in the Kyushu district of Japan to several parts of India: Coromandel in 1668 and 1716, Ceylon in 1670 and 1699, Surat in 1717, Bengal in 1699, and Nagappattinam [Nagapattinam] in 1699. Carl Thunberg, a ship’s doctor for the Dutch East India Company who stayed in Japan for a year and a half from 1775 to 1776, published a book of travels in 1796 (Thunberg, 1796). According to his book, a large quantity of soy sauce was shipped to Batavia (the former name for Djakarta [and Dutch capital of the East Indies]), India, and European countries.” Address: Managing Director, Kikkoman Corp., Chiyoda-ku, Tokyo, Japan.

3455. Hesseltine, C.W. 1989. Fermented products. In: Ruth H. Matthews, ed. 1989. *Legumes: Chemistry, Technology, and Human Nutrition*. New York and Basel: Marcel Dekker, Inc. x + 389 p. See p. 161-85. [29 ref]

• **Summary:** Contents: Introduction: Fermented legume products. A table lists about 85 products with the vernacular name, legume from which it is made, country, and microorganism(s) used. Products made from soybeans include: Miso (bean paste), Shoyu (soy sauce), Sufu (Chinese cheese), Ontjom (Oncom), Hamanatto, Idli (with

and without soy), Natto, and Tempeh. Address: Human Nutrition Information Service, USDA, Hyattsville, Maryland (and NRRC, Peoria, Illinois).

3456. Hoshijo, Kathy. 1989. *Kathy cooks: Vegetarian, low cholesterol*. New York, NY: Simon & Schuster (A Fireside Book). 728 p. Illust. Index. 24 cm.

• **Summary:** Previously published as *The Art of Dieting Without Dieting* (1986). A whopper of a cookbook, with 350 easy-to-prepare vegetarian recipes from the star of the PBS television series “Kathy’s Kitchen”—which airs in 180 cities nationwide. Each recipe contains a detailed (full-page!) nutritional analysis.

This book contains a wealth recipes using tofu, tempeh, soymilk, miso, and whole soybeans.

3457. Leneman, Leah. 1989. *The single vegan: Simple, convenient and appetizing meals for one*. Wellingborough, Northamptonshire, England: Thorsons Publishing Group. 127 p. Illust. Index. 21 cm.

• **Summary:** Vegan recipes for one, grouped seasonally, and within each season by day of the week, with weekly shopping lists and staples to be kept on hand. Soy-related recipes include: Smoked tofu à la king (with smoked tofu and soymilk, p. 21). Strawberry cheese (with plain soy yogurt, p. 29). Spaghetti stir-fry (with tofu, p. 34). Mediterranean-style potato salad with yogurt dressing (with soy yogurt, p. 37). Savoury mushroom bake (with tofu, soy yogurt, and miso, p. 38). Tofu and green pepper savoury (p. 44). Bean and potato salad (with soy yogurt and vegan mayonnaise, p. 47). Courgette (zucchini) and tomato flan (with tofu, p. 48). Tofu and vegetable stew (p. 51). Tofu pot pie (p. 53). Scalloped tofu au gratin (incl. soymilk, p. 58). Nasi goreng (with tofu, p. 63). Chilled cream of tomato soup (with soy yogurt, p. 65). Cream of cauliflower soup (with soymilk, p. 69). Scrambled tofu and leek (p. 79). Irish stew with frozen tofu (p. 84). Tempeh and sweetcorn roast with tahini/mushroom sauce (p. 92-93). Tempeh and mushroom stew on a mashed potato base (p. 98). Sweet tofu ‘omelette’ (incl. soymilk, p. 105). Curried tofu (p. 107). Mushroom miso gravy (p. 115; shows a pack of Sunwheel brown-rice miso). Tropical blancmange (with soymilk, p. 116).

Note: Soymilk and soy sauce are used in small amounts in many other recipes. This book is distributed in the USA by Sterling Publishing Co. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

3458. Leneman, Leah. 1989. *Slimming the vegetarian way*. Revised and reset ed. Wellingborough, Northamptonshire, England: Thorsons Publishers Ltd. 144 p. Index. 20 cm. 1st ed. 1980.

• **Summary:** The menus in this natural-foods, vegan cookbook are designed for 1 person and the daily calories

intake is kept at about 1,000 calories. The book takes a positive attitude toward dieting by focusing on those foods you can eat, rather than those you should avoid. Each “menu” consists of breakfast, lunch, and dinner for 1 day. For each meal there is one column for Imperial (Metric) measurements, one for American measurements, and one for calories, with a calories for each meal and for the day. There are menus for each of the four seasons plus chapters on crash diets, desserts, and a vegetarian wholefood calorie chart.

The preface to the new edition notes: “The greatest change which has occurred since the first edition of this book appeared has been the phenomenal proliferation of soya foods (soyfoods in American parlance). Tofu is arguably the best friend a slimmer ever had, for no other food so low in calories and high in protein is as versatile as tofu. Tempeh is another fine soya food for slimmers, though as it is not as readily available as tofu, I have confined its use to only one recipe. Since soya milk and yogurt are now so easy to obtain, I have given them as alternatives to the dairy versions, so that vegans, and others trying to cut down on dairy produce, will be able to use the book in the same way as lacto-vegetarians.”

Soy-related recipes include: Pineapple tofu salad (p. 36). Tofu celery loaf (p. 39). Tofu-stuffed aubergine (eggplant, p. 66). Scrambled egg or tofu, sausalata and tomato (p. 89, 118). Tofu slices on toast with creamy gravy (p. 98). Miso soup with tofu (p. 102). Spaghetti with tempeh and mushroom sauce (p. 127). Vegetable charlotte with smoked tofu (p. 129). Soya milk and soya yogurt are always listed as alternatives to skim milk or yogurt from cows. TVP is used as an ingredient in many recipes, and “Tamari (soy sauce)” is widely used as a seasoning. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

3459. Reddy, N.R.; Salunkhe, D.K. 1989. Fermentation. In: D.K. Salunkhe and S.S. Kadam, eds. 1989. *CRC Handbook of World Food Legumes: Nutritional Chemistry, Processing Technology, and Utilization*. Vol. III. Boca Raton, Florida: CRC Press, Inc. 323 p. See p. 177-217. [233* ref]

• **Summary:** Contents: Introduction. Soy sauce: Types of soy sauce, preparation of *Shoyu* composition, safety. Miso: Preparation, composition, nutritional quality, miso-like products. Sufu: Preparation, microorganisms, biochemical changes and composition, toxicology, method of preparation, chemical composition, physical properties, nutritional quality. Tempeh: Preparation, nutrient composition, nutritional quality, antinutritional and/or toxic factors, *tempeh* and *tempeh*-like foods from other legumes. Address: 1. Community Research Service, Atwood Research Facilities, Kentucky State Univ., Frankfort, Kentucky; 2. Dep. of Nutrition and Food Sciences, Utah State Univ., Logan, Utah.

3460. *SoyaScan Notes*. 1989. Terms related to soyfoods, soybeans, and the soybean industry: Library of Congress subject headings and call numbers (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Two different types of call numbers are used by American libraries for cataloging their books. Most larger libraries use the Library of Congress call numbers (LC numbers, which start with two letters) and many smaller libraries use the Dewey Decimal System (Dewey numbers, which contain only numbers).

The following are from the Library of Congress Subject Headings (12th ed. 1989) and the Library of Congress Classification Schedules. The first edition of Class S (Agriculture), for example, was published in 1911, and the 4th edition in 1982. BT = Broader terms. NT = Narrower terms. UF = Use for. May Subd Geog = May subdivide geographically, e.g., Soy sauce industry-Japan.

Class H is Social sciences and economics. Class Q is science. Class S is agriculture (SB is plant culture. SB205 is field crops, legumes). Class T is technology (TX includes nutrition). Class Z is bibliography and library science.

HD9000-HD9019 Natural foods industry
 Shortenings—Use oils and fats, edible.
 HD9235.S6-.S62 Soybean industry
 HD9235.S6-.S62 Soyfoods industry
 HD9235.S6-.S62 Soy milk industry
 HD9330.S63-.S633 Soy ice cream industry
 HD9330.S65-.S653 Soy sauce industry
 HD9330.T68-.T683 Tofu industry
 HD9490 Soybean oil industry
 QK495.L52 Soybean botany
 SB205.S7 Soybean culture (Incl. *Soybean Digest* and *Soya Bluebook*)
 SB608.S7 Soybean—Diseases and pests
 SF99.S Soybean as feed
 SF99.S Soybean meal as feed
 TP438.S36 Nattô manufacture
 TP438.S6 Soy sauce manufacture
 TP438.S6 Miso manufacture. BT Soybean as food. NT Cookery (Soy sauce or miso)
 TP684.S Soybean oil
 TX401.2.S69 Soyfoods nutrition.
 TX558.S6 Nattô nutrition. BT Fermentation, Soybean as food, Soybean products.
 TX558.S7 Soyfoods composition. UF Soybean as food. NT Miso, Natto, Tempeh
 TX558.T39 Tempeh
 TX558.T57 Tofu
 Z5074.S73S5 Bibliographies related to soybeans, or all soya in various countries
 Z5776.S63S5 Bibliographies on soyfoods
 Z696.1.S68 SOYA (Information retrieval system)
 The following soy-related terms have a subject heading but no LC call number: Miso industry, Natto industry, Soy

sauce, Soybean flour, Soybean glue, Soybean meal, Soybean milk, Soybean products.

3461. Steinkraus, Keith H. ed. 1989. *Industrialization of indigenous fermented foods*. New York, NY: Marcel Dekker. xii + 439 p. 24 cm.

• **Summary:** This book contains the following chapters on soyfoods: 1. Industrialization of fermented soy sauce production centering around Japanese shoyu, by Danji Fukushima. 2. Industrialization of Japanese miso fermentation, by Hideo Ebine. It also contains chapters on the industrialization of the production of sake, tapai, African beers, magehu, ogi, and gari. The final chapter is titled “Industrialization of indigenous fermented food processes: Biotechnological aspects.”

The book is dedicated “To the memory of Prof. Andre G. van Veen, a pioneer in the study of indigenous fermented foods.” Address: Inst. of Food Science, Cornell Univ., Geneva, New York.

3462. **Product Name:** [Miso].

Manufacturer’s Name: CEIO: Centro Educacional Para Integracao Organica.

Manufacturer’s Address: P.O. Box 39, Braganca Paulista, Sao Paulo, Brazil.

Date of Introduction: 1989?

New Product—Documentation: Talk with (call from) a relative of the owner, Ronald Igel. 1990. Jan. 22.

3463. **Product Name:** [Lima Heiwa Natto Miso].

Foreign Name: Lima Heiwa Natto Miso.

Manufacturer’s Name: Lima Foods.

Manufacturer’s Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.

Date of Introduction: 1989?

Wt/Vol., Packaging, Price: 500 gm poly bag with gas-release valve.

How Stored: Refrigerated.

New Product—Documentation: Lima catalogue, price list, and color product brochure. 1989. A photo shows the product label and bag. The Label is black and blue on red.

3464. **Product Name:** [Ratatouille Miso (Cooked Vegetables)].

Foreign Name: Ratatouille Miso.

Manufacturer’s Name: Lima Foods.

Manufacturer’s Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.

Date of Introduction: 1989?

Wt/Vol., Packaging, Price: 460 gm.

How Stored: Shelf stable; refrigerate after opening.

New Product—Documentation: Lima color brochure. 1989. Oils and cooked vegetables.

Note: *Webster's Dictionary* defines ratatouille (a French term first used in about 1877) as: "a seasoned stew made of eggplant, tomatoes, green peppers, squash, and sometimes meat."

3465. Product Name: [Lima Organic Miso (1-Month, Barley, or Rice)].

Foreign Name: Lima Bio-Miso 1 Mois, Bio Miso Orge, Bio Miso Riz.

Manufacturer's Name: Lima-Andiran.

Manufacturer's Address: Moulin D'Andiran, 47170 Mezin, France.

Date of Introduction: 1989?

Wt/Vol., Packaging, Price: 500 gm poly bag with gas-release valve.

How Stored: Refrigerated.

New Product-Documentation: Lima catalogue, price list, and color product brochure. 1989. A photo shows the product label and bag. The Label is Brown, orange, and white on yellow. "Lima's Bio-Miso is the first and only European miso that is made from raw materials that are organically grown." It is produced at Lima-Andiran in France.

3466. Product Name: [Lima Hatcho Miso, or Rice Miso].

Foreign Name: Lima Hatcho Miso, or Rice Miso.

Manufacturer's Name: Lima-Andiran.

Manufacturer's Address: Moulin D'Andiran, 47170 Mezin, France.

Date of Introduction: 1989?

Wt/Vol., Packaging, Price: 500 gm poly bag.

How Stored: Shelf stable.

New Product-Documentation: Lima catalogue, price list, and color product brochure. 1989. A photo shows the product label and bag. The Labels are brown, orange, or red on beige. An illustration of the predominant grain is shown in the background.

3467. Product Name: [Tekka Miso].

Foreign Name: Tekka.

Manufacturer's Name: Lima-Andiran.

Manufacturer's Address: Moulin D'Andiran, 47170 Mezin, France.

Date of Introduction: 1989?

Wt/Vol., Packaging, Price: 125 gm.

How Stored: Shelf stable.

New Product-Documentation: Lima catalogue and price list. 1989.

3468. Product Name: [Lima Organic Miso (Rice Miso)].

Foreign Name: Lima Bio-Miso.

Manufacturer's Name: Lima-France.

Manufacturer's Address: Moulin D'Andiran, 47170 Mezin, France.

Date of Introduction: 1989?

Ingredients: Whole soya beans*, rice*, water, sea salt. * = Organically grown.

Wt/Vol., Packaging, Price: 500 gm poly bag with valve to release interior gas from fermentation. Retails for DM 11.95.

How Stored: Refrigerated.

New Product-Documentation: Label sent by Anthony Marrese. 1989. Nov. Front and back. Each 3 by 4.5 inches. Orange, brown, and white on yellowish beige. In Dutch, French, German, and English. Control: Unitrab and Nature et Progres logos. "The first European miso. Paste from whole soya beans and rice, both organically grown; fermentation: 18 months; made in the Southwest of France, neither pasteurized nor sterilized. Use: in soups, stews, dips, vegetable spreads, and sauces for vegetables or fish. Keep in a cool place: 2-4°C. Best before end of 1990."

3469. Product Name: Free (Dairy-Free Tofu-Based Cheese Alternative) [Jalapeno Jack, Garlic Jack, Cheddar, or Spice].

Manufacturer's Name: Sharon's Finest. Div. of Rose International (Product Developer-Marketer).

Manufacturer's Address: P.O. Box 2687, Petaluma, CA 94953-2687. Phone: 707-778-7721.

Date of Introduction: 1989?

Ingredients: Organic tofu, soy oil, tapioca, irish moss, nutritional yeast, agar-agar, guar gum, sea salt, miso, carob bean gum, kuzu, aloe vera, lecithin, citric acid.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

Nutrition: Per 1 oz.: Calories 90, protein 2 gm, carbohydrate 6 gm, fat 6 gm, sodium 110 mg, calcium 95 mg.

New Product-Documentation: Letter from Richard Rose. 1987. Sept. 17. This product should be on the market by Oct. 1987. A U.S. patent is pending. Spot in Food Processing. 1987. Oct. Contains added vitamin B-12. For additional information contact Sharon's Finest Div. of Rose International, Petaluma, California. This product is FREE of casein. It "tastes, looks, and melts like real cheese." Spot in Food Distributors Magazine. 1987. Oct.

Medoff. 1987. Whole Life. Sept/Oct. p. 79, 82. "New Soy Cheese Best Yet to Hit Market." Sharon's Finest brand FREE, a new non-dairy cheese made from Rose International, contains no casein. "They've managed to create a soy cheese that is about as close to real dairy cheese as any we've seen to date... Indeed its similarity to real cheese is startling." A U.S. patent is pending on the product's formulation and process. The product's cheese-like qualities result from the interaction of ingredients, rather than from any one in particular. It contains 70% organic tofu, far more than any other soy cheese on the market. It will be marketed as tofu that is like cheese, rather

than a soy cheese per se. Article includes Label. "The first Tofu that melts and tastes like real Cheese!"

Spot in Health Foods Business. 1987. Dec. "Rose International has introduced a tofu cheese and nog." The cheese, named Free, "tastes, looks, and melts like real cheese." Contact "Rose International, P.O. Box 2687, Petaluma, CA 94953-2687."

Talk with Richard Rose. 1988 Feb. 15, and 1990 March 1. This product has not yet been put on the market. It is hard to find a company to make an unconventional soy cheese. But he is working and it will eventually be launched.

Talk with Sharon Rose of Sharon's Finest. 1992. Feb. 10. This product is still in limbo, on the back burner. They have developed a good formula, but Richard is still working on minor improvements.

Letter (fax) from Richard Rose. 1994. April 21. This product was never sold commercially, and Richard was never wholly satisfied with it. "Plus Kraft beat us to the name, legally." It was the precursor to VeganRella. "Although far better than Soyimage [the only casein-free soy cheese sold at the time], we felt it should, could, and would be even better with more work."

3470. Belleme, John. 1990. Starting a new miso company in North Carolina (Interview). *SoyaScan Notes*. Jan. 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John is in the process of starting a new miso manufacturing company named Smoky Mountain Miso Shop. It will be owned by a company named Traditional Foods Inc., which he and a partner started in about June 1989. Over the shop will be a non-profit organization named Institute of Traditional Foods, where people can come to live and study food preparation (tofu, tempeh, miso, seitan, tamari) both on a home and commercial scale, for short or long seminars. He will break ground for the plant in about 3 weeks. It will be attached to his home, 2,000 square feet, Japanese style and very compact, with a capacity of about 50,000 lb/year of miso. He hopes to find 2 distributors, one on each coast: Maybe Blake Rankin of Granum on the West Coast and Macrobiotic Wholesale Co. on the East Coast. Great Eastern Sun will be a competitor. His non-compete agreements with them have expired.

John's wife, Jan Belleme, (who works for Mitoku) is doing a story for *East West* about amazake. The new editor of *Solstice*, John Mann, has decided to focus on macrobiotics, and away from the environmental focus. He would like a story on amazake (\$200). *Solstice* reaches 60,000 people. John spent the summer at an organic winery.

Note: As of June 1993, this company was never started. Instead, John started a company making traditional seitan. Address: P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

3471. Orbuch, Paul. 1990. Where Wildwood prefers to sell their tofu in a store (Interview). *SoyaScan Notes*. Jan. 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Wildwood first had to deal with this question in 1981 when they sold their tofu & miso sandwiches on the counter of natural food stores. Wildwood felt there was no danger of tofu spoilage because of the miso. They battled hard against the state health department. They tested tofu with and without miso around it at the state's labs. The results showed that tofu was clearly a potentially hazardous food. From then on Wildwood insisted that all of their tofu and tofu sandwiches be refrigerated below 45°F. Paul's experience is that the average temperature in the produce case wet rack is 50°F.

About 3 years ago Wildwood was at a crossroads. They had three vendor numbers: One of produce, one for grocery/dairy, and one for deli. The buyer explained that this was a mishmash, and asked Paul to choose one. He chose grocery/dairy. Today, in many supermarkets, Wildwood has 18-24 linear feet of space in the dairy case of high-volume supermarkets. In Lafayette, Walnut Creek, and Orinda supermarkets they have only 2 feet. Paul usually goes in and says, "I won't take less than 8 feet." The goal is one facing per product. Paul is aware of the ongoing turf wars between supermarket departments. But note that any product that comes in under produce will have a produce label on it. Wildwood now has a few of its own refrigerated stand-up display cases that contain only Wildwood products, similar to those pioneered by Quong Hop & Co. The cases are located between the produce and dairy departments in the store. The name of the case is "Wildwood Natural Foods" with the company logo. It is not limited to soyfoods, but to natural vegetarian foods—whatever they distribute. But a soy yogurt would probably go next to dairy yogurts in the dairy case. Woody Yeh is still waiting for his cups. Paul thinks Woody's soy yogurt product is excellent. Azumaya sells its Stir Fruity in the produce case because the company's historical relationship is with the produce buyer.

Wildwood is still wrestling with the use of calcium in tofu, and may start to use it, alone or with nigari. Address: Wildwood Natural Foods, 135 Bolinas Rd., Fairfax, California 94930. Phone: 415-459-3919.

3472. Hicks, Russel. 1990. History of Sweet Earth Natural Foods (Interview). *SoyaScan Notes*. Jan. 31. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This company was founded by Russel Hicks and Valerie Dallas. They started making and selling foods in 1978 in Pacific Grove. Their first product was named "Vegeburger by Sweet Earth," a soybean based burger introduced in 1978. In the early days, they also had a bakery named Sweet Earth Bakery (P.O. Box 22543 in Carmel). They did all kinds of things. After a year Russel and his wife left for 3 years, then they returned. The company's

second product, launched in about 1983, was called “Tofu Rice Burger by Sweet Earth.” Both products had round labels, so the product name was arched across the top and “Sweet Earth” was arched across the bottom.

In about 1983-84 Sweet Earth started to get serious about selling foods. In 1985 they introduced their fresh “Deli Line,” consisting of perishable, healthy fast and natural foods—especially sandwiches, salads, and soups. (The burgers were vacuum packed with a 3-month shelf life.) Included in this line were various foods in which soy was a major ingredient: Lunch Rush Burrito (with tofu and rice, 1985), Tofummus Sandwich (1985; tofu + hummus), Miso-Vegetable-Barley Soup (1985), Oriental Rice Burrito (1987), Oriental Rice & Tofu Salad (made sporadically, 1987) TMT Spread (with tofu, miso, and tahini, 1989; no longer on the market due to short shelf life). and Tofetti Sandwich (1990). They distribute these perishable foods themselves in the Monterey area, then they have independent distributors that carry their deli line to Santa Cruz, the Bay Area, etc. Veggie Paté Sandwich (with Miso; 1990). They also use a lot of soy sauce and tamari as a seasoning. They buy their tofu from Jack in the Beanstalk in Salinas. They are Wildwood’s biggest competitor in the Monterey area. “Tofu is definitely the food of the future. It’s probably going to take a couple of more years. We’ve been watching this slow change. Ten years from now tofu will be everywhere and in everything. All kinds of foods will be made from it. We raise our children on tofu and they eat it right out of the carton. To them its second nature. I really like the whole soy end of life. It really feels good. I like developing foods with tofu. The biggest problem with tofu is trying to get a long shelf life in products that use it.” Address: 597 Lighthouse Ave., Pacific Grove, California 93950. Phone: 408-375-8673.

3473. Shimoyamada, Makoto; Kudo, S.; Okubo, K.; Yamauchi, F.; Harada, K. 1990. Distribution of saponin constituents in some varieties of soybean plant. *Agricultural and Biological Chemistry* 54(1):77-81. Jan. [18 ref. Eng]
 • **Summary:** Soybean seeds contain many types of glycosides, such as saponins (called soyasaponins) and isoflavonoids. Saponins are bioactive substances with bitter taste. Two types occur only in the seed hypocotyls of soybeans. Address: 1,3-4. Dep. of Food Chemistry, Faculty of Agriculture, Tohoku Univ., 1-1 Tsutsumidori-Amamiyamachi, Aoba-ku, Sendai 981; 2. Kanesa Miso Co., Ltd., 202 Tamagawa Hamada Aomori 030; 5. National Inst. of Agrobiological Resources, 2-1-2 Kannondai, Tsukuba 305. All: Japan.

3474. Wang, Guangjian; Kuan, S.S.; Francis, O.J.; Ware, G.M.; Carman, A.S. 1990. A simplified HPLC method for the determination of phytoestrogens in soybean and its

processed products. *J. of Agricultural and Food Chemistry* 38(1):185-90. Jan. [14 ref]

• **Summary:** Discusses the phytoestrogen content of soybeans, defatted soy meal, hard tofu, soft tofu, dry spiced tofu, soy milk skin (p. 189) / soy milk film (p. 188) [yuba], soy milk, soy sauce, hot soy paste, sweet soy paste [miso?], fermented tofu, soy sprouts (homemade), soy sprouts (grocery), daidzein, genistein, formononetin, coumestrol. Address: Natural Toxins Research Center, Food and Drug Administration, 4298 Elysian Fields Ave., New Orleans, Louisiana 70122.

3475. Klaper, Michael. 1990. Personal history, present work, and views (Interview). *VegeScan Notes*. Feb. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Born on 19 July 1947, Dr. Klaper grew up on a dairy farm in Wisconsin. He graduated from the University of Illinois College of Medicine in 1972, was married, then did a 1 year internship followed by 5 years of general practice in British Columbia, Canada. After 3 years of residency retraining in Vancouver he worked for 3 years on an Indian Reservation in Humboldt County, California. Then did 1 year of anaesthesia residency at the Univ. of British Columbia Cardiovascular Service. He worked with surgeons who would ream cholesterol out of patients’ arteries. It was basically plumbing problems. How long can you continue to pour bacon grease down the kitchen sink until it clogs the pipes? One day in 1981 an incident changed his life. A Mr. Phillips came in for open heart surgery. The serum in a blood sample Dr. Klaper drew was cloudy like glue—the man had just eaten a hamburger and a milk shake. During the operation, the surgeon pulled long tubes of cholesterol out of the man’s arteries, then sewed him up. Michael realized that he was eating the same diet as Mr. Phillips. After the operation the overweight surgeon and staff went to the cafeteria and had that same diet. While Mr. Phillips was in the hospital, no one talked to him about changing his diet. They just asked him to come back for a checkup. Michael felt like he was in a Fellini movie. He decided that instead of putting people to sleep, it was time for him to start waking them up. So in June 1981 he resigned his lucrative position as an anesthesiologist, bought a vegan cookbook (from Gentle World) and followed a vegan diet. His blood pressure fell and he lost a 15-pound inner tube of fat around his waist that he had worn for years. He felt much better. In Oct. 1981, he moved to Gentle World in Florida, opened a clinic in nearby Orlando, and practiced “nutritional medicine” for the next 6 years. He was married a second time. At the clinic he especially liked to see fat patients. A change to a vegan diet worked miracles. Now they were putting “the right fuel in the tank.” But he also noticed that in many arthritics, the inflammations in their joints got better, and that the asthma in many asthmatics decreased or disappeared. In the late

1980s he moved to Felton near Santa Cruz, California, and worked with Earthsave Foundation and John Robbins. In early 1990 he moved to Los Angeles to continue this work. He also wrote several books on vegan nutrition.

Today his main work is lecturing about diet and the environment, how America's meat-centered diet is destroying both the earth's ecosystems and our bodies. He advocates changing to a vegan diet and wants people to understand "the true cost of a meat-centered diet." Most of his income now comes from speaking honoraria and sales of his book, none from medicine. He is living with friends in Los Angeles. His favorite periodicals on diet are: McDougall Newsletter, Vegetarian Times, Vegedine, and The Vegan. On ecology: E, and Buzzworm.

Concerning his personal diet: he gets about 600 mg/day of calcium which he thinks is sufficient because his protein intake is also low. For breakfast he has sliced fruit and raisins with apple or orange juice poured over the top. Whole wheat bread with almond butter (and sometimes a fruit puree). Sometimes a scrambled tofu omelet. For lunch: Green salad with yellow or red veggies and tahini dressing (with water and nutritional yeast), vegetable soup, and a sandwich with nut butter or tofu spread (with tahini and shoyu) and/or sprouts. For dinner: Potato or pasta or cooked whole grains (like brown rice), yellow steamed veggies, miso broth often with diced tofu. For snacks he likes almonds and/or raisins. His favorite sweet is Rice Dream [frozen dessert] or fruit. He admires the work of Dr. John McDougall but strongly disagrees with the way he strictly applies the concept of "percentage of calories from fat" in foods, using it to criticize foods such as tofu which actually have very little fat per typical serving.

As of Feb. 1990 Gentle World, a community of 20 people, is selling their land in Florida and moving to Maui. Contact them at Gentle World, P.O. Box U, Paia, Maui, Hawaii 96779. Phone: 808-579-9144. Mr. Waldbaum (Light) is a distant cousin of the Waldbaum family of supermarket fame. They have opened a restaurant named "The Vegan" on Maui and are using lots of soyfoods.

Update: In April 1992 Dr. Klaper announced the foundation of a newly accredited program called the Institute for the Advancement of Nutrition Education and Research, which aims to further physicians' knowledge about nutrition and health. He made the announcement at Natural Products Expo West, during his seminar called Soyfoods and Vegetarianism. As of Jan. 1993 the Institute has conducted two 4-day seminars, mostly for physicians who received Continuing Medical Education (CME) credits. Address: 8843 Pennfield Ave., Northridge, California 91324. Phone: 818-341-0652.

3476. *Yomiuri Shinbun (Yomiuri Daily News, Tokyo, English ed.)*. 1990. Zambian learns of tricks of tofu trade. Feb. 19. [Eng]

• **Summary:** A Zambian man, Stanislas Chisembe, a 38-year-old veterinarian is studying tofu production at a tofu shop owned by Yasuo Tominari in Matsumoto city, Nagano prefecture. He wants to teach the process to his countrymen. In Zambia, where farmers have recently begun to cultivate soybeans, most are exported as cooking oil and feed. He thinks tofu can be mixed with traditional Zambian food, based on cassava and corn, to help relieve protein deficiencies and infant mortality. Chisembe first learned of tofu when he visited Japan 2 years ago. This is the second in a series of articles on an international cultural exchange program called "30 Days in Japan."

"Now he has returned as one of 15 foreigners on a 30-day program in which participants pursue individual projects in Japan. He plans to use his new knowledge about the protein-rich soybean to alleviate malnutrition in Zambia.

"When he returns home, Chisembe will rely on television and other methods to teach tofu-making. The Japan International Cooperation Agency, based in Tokyo, has promised to help him encourage the continued cultivation of soybeans in Zambia...

"At an agricultural center in Toyoshina-machi, Nagano-ken, housewives helped him perfect his technique for making tofu and miso by hand." Address: Tokyo, Japan.

3477. Achter-Theiss, Elke. 1990. Speise statt Futter [Food instead fodder]. *Oeko-Test Magazin (Frankfurt, West Germany)*. Feb. p. 57-59. [Ger]

• **Summary:** Discusses whole dry soybeans, soybean meal, soy sauce, soymilk, tofu and silken tofu, tempeh, and miso.

3478. **Product Name:** Red Miso (1 Year), Mellow Barley Miso, Mellow Rice Miso.

Manufacturer's Name: Great Lakes Grainfoods.

Manufacturer's Address: 225 Parsons St., Kalamazoo, MI 49007. Phone: 616-382-0830.

Date of Introduction: 1990. February.

How Stored: Refrigerated.

New Product-Documentation: Talk with Crick Haltom and Colby Wingate. 1988. April. They have been in business for 2 years making seitan and mochi. They plan to make miso commercially.

Talk with Crick Haltom. 1991 Nov. 23. He started putting up 1-year red miso in the fall of 1989, and soon thereafter started making shorter-term misos, mellow barley and mellow rice, to get some income. The latter became available for sale in early 1990. He made the miso on a fairly small scale in 50-gallon food-grade barrels. He stopped production in March 1991.

3479. Hesseltine, C.W. 1990. Margaret B. Church, 1889-1976. *Mycologia* 82(1):144-47. Jan/Feb. [20 ref]

• **Summary:** "Dr. Margaret Brooks Church was a distinguished mycologist and a charter member of the

Mycological Society who has been neglected in the history of mycology. She made several noteworthy contributions to systematic and applied mycology. She, along with Dr. Charles Thom, wrote the first manual on the genus *Aspergillus*. The first authoritative treatment of oriental fermented foods in the West was written by her. It remains an accurate account of these fermentation processes. Dr. Church also conducted laboratory experiments on soy fermentations and collaborated with Japanese workers, especially Professor K. Oshima; Hokkaido Imperial University, Sapporo, Japan...

“Dr. Church was born in Providence, Rhode Island, on March 13, 1899. She received an A.B. in 1912, an A.M. in 1914, and a Ph.D. in 1918, all from Brown University.

“One of her most important contributions was the USDA Department Bulletin 1152 entitled, ‘Soy and Related Fermentations,’ published in 1923. At that time there was interest in establishing soybean production in the United States because soybeans were being imported into the U.S. from the Orient. This publication had many photographs of the industrial processes of making koji and soy sauce in Japan. Research in soy sauce production began in 1918 and continued for several years. Soy sauce, miso, molded [fermented] tofu, and natto were also described...

“Dr. Church’s research dealt extensively with koji, and it is surprising that she knew even then that tane koji (koji inoculum) consisted of several selected mold strains of *Aspergillus oryzae*. The fact that yellow-green *Aspergillus* strains were employed in these fermentations undoubtedly led both Thom and Church to publish the taxonomic relationships of this group of molds in 1921. Her research on koji was a likely catalyst for her study of industrial enzymes...

“In 1938-1939, Dr. Church served as an indexer and abstractor for Biological Abstracts. Upon her retirement, presumably in 1939, she moved to Lyndon, Vermont.” A large photo shows Dr. Church. Address: 5407 Isabell, Peoria, Illinois 61614.

3480. Nomura, Abraham; Grove, J.S.; Stemmermann, G.N.; Severson, R.K. 1990. A prospective study of stomach cancer and its relation to diet, cigarettes, and alcohol consumption. *Cancer Research* 50(3):627-31. Feb. [45 ref]

• **Summary:** In this cohort study, the authors did not find a significant association between consumption of miso soup or tofu and gastric cancer risk among 7,990 American men of Japanese ancestry in Hawaii, although a trend toward a protective effect of tofu was present. Address: Japan-Hawaii Cancer Study, Kuakini Medical Center, Honolulu, Hawaii 96817.

3481. Soejono, Irlan; Kagatsume, Masaru. 1990. Shifts and development in trade of various food crops in East Asia,

1960-1984. *CGPRT Working Paper* No. 5. xviii + 168 p. Feb. 28 cm.

• **Summary:** For each country discussed, this book gives information on: Production and supply of coarse grains, pulses, and root and tuber crops. Consumption and demand. Trade and trade elasticities. Forecast and policy implications: Prediction on import demand, indication of policy implications. Countries: Japan (p. 1-28). People’s Republic of China (p. 29-42). Republic of Korea (p. 43-62). Taiwan (p. 63-79). The Territory of Hong Kong (p. 81-92). Appendixes (p. 95-165). References (p. 167-68).

Summary: As people in the East Asia subregion become more affluent and westernized, they consume less food grains directly and more livestock products.

Japan: Japanese rice production peaked in 1963 at 13.42 million tons, but surpluses have continued to grow. The government has tried various schemes to induce farmers to switch from rice other crops, including soybeans. A graph (p. 6) shows that soybean production in Japan dropped from 418,000 tonnes in 1960 to 100,000 tonnes in 1976. Because of the Rice Farming Diversification Policy, soybean production since 1976 has increased, rising to 238,000 tonnes in 1984. The graph also shows harvested area and yield during this period. A graph (p. 13) shows the total demand for soybeans in Japan and its components, 1960-1984. The total demand has increased steadily from 1.517 million tonnes in 1960 to 4.814 million tonnes in 1984. About 80% of this demand (3.952 million tonnes in 1984) was for soybeans to be processed. About 90% of these (3.765 million tons in 1984) were crushed into oil and meal. Small and relatively static amounts were processed to make miso (182,000 tonnes) and soy sauce (5,000 tonnes) in 1984. Address: 1. Senior Agricultural Economist, CGPRT Centre, Jl. Merdeka 145, Bogor 16111, Indonesia; 2. National Research Inst. of Agricultural Economics and the Ministry of Agriculture, Forestry and Fisheries of Japan.

3482. Kempff, Klaus. 1990. Brief history of Life Food GmbH–Taifun Tofurei (Interview). *SoyaScan Notes*. March 14. Conducted by Anthony Marrese in Germany.

• **Summary:** Klaus, known as Dhanya, lived in Miami, Florida, for 5 years and has an American wife, although they are separated. His interest in soyfoods began in America. After returning to Germany, in 1985, Klaus bought a little sprout business in a basement/cellar at Wallstrasse 3 in Freiburg. When he bought it, it had no name and was run by a commune of Bhagwan Rajneesh devotees as a Sannyas business. Since April 1985 the commune had been making various sprouts (not including soy sprouts). Klaus named the business Life Food, and in July 1985 he and several others started producing tofu. In the spring of 1986, in Germany, he got a copy of *The Book of Tofu* by Shurtleff and Aoyagi which helped his work. He sold the tofu along with various sprouts (mung, alfalfa, radish, chick peas,

wheat) at the market place. Looking for a way to use his okara, Klaus developed a Soy Burger and started selling it in about Nov. 1985.

Then health officials told them to move or be shut down. While struggling with the decision, a new place (a little grocery store at Stuehlinger Strasse 9, D-7800 Freiburg) became available and an order for one hundred 400 gm packs/week of tofu came along, so in Dec. 1985 they decided to go for it and start making tofu on a larger scale. The business grew steadily and in May 1989 they moved into their present location, a larger, new and modern facility that was previously occupied by a catering service. They purchased a new pressure cooker for making the soymilk for their tofu.

Klaus had a friend named Wolfgang Heck (not a follower of Rajneesh), who was an organizer (*Veranstalter*) of international events. The two began to work together in late 1986. In May 1987 Wolfgang started a business named Taifun that cooked Life Food's tofu for the people in the nearby Market Hall for gourmet foods. Taifun had a small walk-up tofu lunch bar at an indoor market. Here they sold their products and tried out new second generation products.

Klaus and Wolfgang decided to merge their two companies. So on 1 Jan. 1990 Life Food GmbH was formed, with 5 shareholders, including Klaus and Wolfgang. Life Food GmbH bought Taifun (the brand name and equipment) and discontinued operation of the Taifun in the market hall. Taifun became the brand name for many of Life Food's products. But some confusion between Life Food and Taifun still remains. For example, today outside the tofu plant there is a big sign that says "Taifun Tofurei" in big letters and under it in small letters the name of the company, Life Food GmbH.

Life Food GmbH now employs 15 people. Present products they make are tofu burgers (3 types, each 90 gm, 1,250/week), tofu (500 kg/week, started Dec. 1985), tempeh (10-20 kg/week, started July 1987), Tofu Terrine Sausage (just starting; they are terrific). They made samples of white miso in March 1989 and are in the process of bringing it into production. Although most of their okara goes to farmers, some is used in their tofu burgers and the Hop Sing Bratlinge (burger dough for restaurants). Life Food is the only tofu producer in Freiburg, where they control the whole market. They have a 60 kg/hour Takai pressure cooker, a Takai hand okara press, and a meat-type grinder for the soybeans. They make tofu in 10-12 kg batches. They also import and sell a little miso and shoyu.

Follow-up interview by William Shurtleff. 1990. May 9. The company presently makes 800-1,000 kg/week of tofu and 10-15 kg/week of tempeh. They are hoping for a big standing order of 500 kg/week from the student dining hall at Freiburg Univ. The dining hall has already been buying tofu and tofu products for a long time. Their best selling product is tofu, followed by Smoked Tofu, then the Tofu

Terrine (made by pressing tofu, mixing it with vegetables, and baking it in a baking pan; it resembles a goose liver pâté).

Update. 1990. May. Bernd Drosihn says Klaus Kempff is no longer in charge; Guenter Klein and Wolfgang Heck have taken over. Address: Founder, owner and manager, Life Food GmbH, Robert-Bunsen Strasse 6, D-7800 Freiburg, West Germany. Phone: (0761) 50 61 55.

3483. Westra, Marianne. 1990. Early history and current work of Vanka-Kawat B.V. (Interview). *SoyaScan Notes*. March 29. Conducted by William Shurtleff of Soyfoods Center. Followed by letters on 1 June and 2 July 1990.

• **Summary:** This company was founded in 1958, and has been in business for 33 years. They began as both an importer and a manufacturer. The original products they made were tofu (tahoe) and soy sauce (both sweet and salty varieties). In 1958 they began to make the following types of soy sauce: Ketchup Kaki Tiga, Ketjap A, Ketjap Benteng Manis, Ketjap Benteng Asin, Yellow Label Soy, and Tiger Brand Soy. They were still making all of these varieties in 1990.

At the time they started the business, they think there were other manufacturers of soy products in the Netherlands, but they don't remember the names of any companies of individuals. There were small, local Chinese companies that made tofu before they did, and at least one company that made soy sauce before they did. Their mailing address and head office address have not changed since 1958. The mailing address is: Dr. Augustijnlaan 40, 2283 CH Rijswijk, Netherlands (near The Hague). In 1984 Vanka-Kawat was thought to be the second largest tofu maker in Europe and in the Netherlands (after Heuschen-Schrouff), producing 10,500 kg/week. They discontinued tofu production in March 1985 after coming to an agreement with Heuschen-Schrouff, because it was more economical for Vanka-Kawat to let Heuschen-Schrouff (which had all the equipment and knowledge) produce the tofu which Vanka-Kawat sold. They now buy their tofu from Heuschen-Schrouff. They also make sambals, and other foods. They have never made taotjo or miso, but they do import it. And they have never made tempe/tempeh, but they do buy it from the "first Dutch Tempeh factory" and then sell it.

They are not related to Linn Oriental Products (also called Soy-Lin or Lin Tahoe) in Westbroek, but they think that company started in about 1970. The company still exists; the owner is Chinese, but they do not know if it is Mr. Lin. Mr. G.L. Van Kasteren is the best man to talk to about soyfoods. He speaks good English.

This company, which is run by Indonesian-Dutch, imports foods from throughout Asia, though they started with Indonesia, and exports to West Germany, Belgium, France, England, and the USA.

Note: Anneke de Weerd says (4/91) that the two most popular types of soy sauce in the Netherlands are ketjap manis and ketjap benteng; ketjap asin is not well known. Address: Head Office: 3e van de Kunstraat 18, 2521 BB Den Haag (The Hague), Netherlands. Phone: 70-388-8804.

3484. *Agri-Book Magazine (Exeter, ONT, Canada)*. 1990. Beans in Canada. 16(5):1-36. March.

• **Summary:** This entire issue is about soybeans in Canada, with emphasis on soybean production. Articles include: Reviewing ridge tillage. Grading by oil and protein content. Soybeans submit to taste test (by Japanese tofu buyers). The Quebec bean comeback. Weed control in soybeans. Takeya Miso Co. Soybean cyst nematode. Soybean breeding.

3485. Diamond, Marilyn. 1990. *The American vegetarian cookbook: From the Fit for Life kitchen*. New York, NY: Warner Books. xx + 422 p. Index. 29 x 22 cm. [74* ref]

• **Summary:** This is a beautifully presented vegan cookbook, with many creative and delicious recipes. Soy-related recipes and entries include: Description of unpasteurized misos (p. 42). Soy products (p. 43; see also How to replace animal products, p. 93). Red miso tea (p. 71).

Chapter 6, titled "How to replace animal products" (p. 93-119), is devoted largely to soyfoods, especially tofu. At one time the Diamonds were not fans of tofu, but now Marilyn hails it as an "extraordinarily healthful" food. She uses it in what she calls "stedda" foods—such as tofu salad "instead of" chicken salad. In this chapter you will find: Nondairy milk and cream: Soymilk (p. 94-95; the author finds nut and seed milks, almond and sesame, to be more flavorful). Enriched almonnaise (non-dairy mayonnaise with almonds and soymilk, p. 98). Instead of meat (p. 100): Exactly what is tofu? Culinary utopia: A dream come true. Buying and storing tofu. Wrapping tofu. Freezing tofu. Marinating tofu. Mixing tofu with other foods. How to proceed. "Stedda" sour cream. "Stedda" sour cream and onion dip. Cottage tofu or "stedda" feta. "Stedda" ricotta. Tofu "cheese" and olive spread. "Stedda" eggs: Rancheros (with tofu, p. 107). Scramblers (with tofu). Scrambled tofu (another way). Scramblers with fresh shiitake mushrooms. "Stedda Matzo brie (with soymilk and tofu). Burgers and other sandwiches (p. 110): "Stedda" egg salad (with tofu). Happy "chicken" burgers (with tofu). "Stedda" fish fillets (with tofu). "Stedda" meat marinades (* = with low-sodium soy sauce): All-purpose marinade I*. "Chicken" flavoring*. "Beefy" marinade*. Sweet and sour*. "Stedda" chicken fillets (with tofu). Mixed grill platter (with tofu). Kebobs! (with tofu). Tofu meunière. Lemon "stedda" chicken (with tofu). "Stedda" Chinese chicken salad.

"Sour cream" garlic dressing (with tofu, p. 128). "Cheesy" dijon dressing (with tofu, p. 130). French green salad with cottage tofu (p. 141). "Stedda" beef salad (with

tofu, p. 155). "Stedda" mozzarella salad (with tofu, p. 159). Tofu salad (p. 169). "I used to love a fried egg" sandwich (with tofu, p. 181). Spicy tofu tacos (p. 186). Seasonings for soups (miso, p. 189). Basic cream soup (with light miso, p. 191). Miso soup with ginger and green vegetables (p. 193). Easy miso soup with vegetables and tofu (p. 194). Asparagus with tofu (p. 222-23). Vegetable lasagna with tofu ricotta (p. 278). Meatless bolognese spaghetti sauce (with frozen tofu, p. 280). Dairy-free "cheese" sauce for any pasta (with soymilk and light miso, p. 282). Tamale pie (with tofu, p. 311). Mushroom-leek crepes (with miso, p. 316). Winter squash blintzes (with tofu, p. 317). Spinach quiche (with tofu and light miso, p. 317). Asparagus quiche (with tofu and light miso, p. 318). Country pot pie (with tofu). Spanokopita with "stedda" ricotta (with tofu, p. 320). Superb vegetable sushi (with tofu, p. 322). Baking ingredients (soy flour, p. 331, and soymilk, p. 333-34). Carrot-cake cookies (with soy flour, p. 346). "Cheesecake" bars (with tofu, p. 346). Easy banana bread (with tofu, p. 348). "Cheese" strudel (with tofu, p. 349). Mocha parfait (with tofu, p. 350). Baked Indian pudding (with soymilk, p. 350). Applesauce cake (with tofu, p. 352). "Chocolate" carrot cake (with tofu, p. 353). Holiday pumpkin pie (with tofu, p. 355).

Talk with Marilyn Diamond. 1991. Sept. 18. The book is in its 9th printing now and the publisher just allowed her to do a revision, correcting typos and improving recipes. The publisher is not even planning the paperback edition yet because the hardcover edition is selling so well. They now have a 10-year contract with Doubleday (with a 10-year option to renew), and she and Harvey are working on a book together titled "How to Save Your Husband's Life While Saving Your Own." It stresses the need to re-affirm the female energies, which are the earth energies. The Diamonds have established a foundation to support the environment and ecological projects. This last year they contributed funds from it to support tree planting through the National Arbor Day Foundation. Address: Bradenton, Florida 34209.

3486. Gray, Sylvia Ruth; Rogers, Sherry A.; Cohen, Gary Martin. 1990. Here's the B-12!. *Solstice* No. 40. p. 10-13. March.

• **Summary:** "In a follow-up to last issue's cover story, three macrobiotic researchers offer their perspectives on diet and the elusive vitamin B-12." S.R. Gray believes that B-12 deficiencies may be linked to "cobalt-deficient soils and habitual use of various soy products... Recent tests on the tempeh from Turtle Island Soy Dairy were a breakthrough: comparative testing (between *L. leichmannii* and *O. malhamensis*) suggested the absence of analogues and B-12 findings of 5.5 micrograms/120 gm (4 oz.), which is excellent—a far cry from Specker's mean of 0.05 micrograms/100 gm on six tests of tempeh!

“My barometer for good quality miso is that it promotes a substantial rise in bread. Ohsawa America, South River and Yamazaki all produce dark misos which make our 50 percent whole grain bread rise beautifully... One good miso was tested and was found to have B-12 levels four times higher than that found by the Dutch researchers last year. Future tests may prove even this figure to be falsely low; miso testing is tricky, since high salinity affects B-12 extraction processes...”

Will the addition of B-12-making bacterial cultures be helpful in the process of making tempeh? “Actually, since the B-12 content of foods such as tempeh mirrors the cobalt content of the substrate, I suspect no amount of *Rhizopus oligosporus* or *Klebsiella pneumoniae* can make B-12 in the absence of cobalt. In fact, the addition of *K. pneumoniae* to a tempeh culture may actually decrease final B-12 content because of competition for resources.”

G.M. Cohen notes that B-12 deficiency may be caused by chronic mercury poisoning from dental amalgam fillings. Address: Strictly Macrobiotic, 315 First Ave., Salt Lake City, Utah 84103. Phone: 801-521-7936.

3487. Ontario Soybean Growers' Marketing Board. 1990. A profile of the Canadian soyfoods market—Characteristics and potential. Box 1199, Chatham, ONT N7M 5L8, Canada. vi + 40 p. March. 28 cm. Spiral bound.

• **Summary:** Contents: 1. Introduction: Background, study objectives. 2. Research procedures: Data limitations, data collection (data sources). 3. The soyfood market: Soyfood production and utilization, domestic production, imports and exports (introduction, whole soybeans, soy flours and meals, soy oil, soy sauce, protein substances, cream and other substances, bran & soy hulls, soy meal oil cake), balance, conclusions regarding opportunities.

4. Soybeans for food purposes: Natto beans (background, market characteristics, market potential), whole bean soyfoods (introduction, soynuts, full fatted soy flours, soymilk, tofu, soy sprouts, tempeh, miso, natto, soy sauce), foods from soy ingredients (introduction, defatted soy flakes, soy protein concentrate, soy protein isolates, textured soy protein, consumption and imports). 5. Organic soyfoods: Introduction, organizations (major players, labelling requirements, certification), organic soybeans, organic soyfoods, market opportunities, recommendations.

6. Market estimates: Introduction, conversion rates, market characteristics (introduction, ethnic characteristics, immigration trends, implications), soyfood consumption (production). 7. Soyfood products: Introduction, new products (whole bean products, products from soy components), existing products (products with potential for growth). 8. Marketing strategy: Introduction, respondent requests (background), market opportunities (traditional soyfoods, new products), systems development (system

information needs, human resources, production research), institutional needs.

This study was commissioned by the Ontario Soybean Growers' Marketing Board to provide a description of the Ontario soyfood industry. “Production and utilization: In the 1988 crop year, approximately 1.12 million tonnes of soybeans were produced on 1.28 million acres in Ontario. Approximately 86% of the soybeans were sold through the Board, with the remainder being fed or retained on the farms where they were grown. In 1988, 860 thousand tonnes of soybeans were crushed in Canada to produce soybean meal and soy oil, and 272 thousand tonnes were exported.

“Imports and Exports: Canada had a negative balance, a deficit, of almost \$190 million in the value of soybeans and soy products traded. This is just over half a million dollars per day. Our largest single area of exports is whole soybeans for human foods. The percentage of these beans going to the major markets in 1988 were: USA, 37%; Pacific Rim Countries, 34%; and Europe and other 29%. Our greatest imbalance in exports and imports is in soybean meal or oil cake. Canadian crushers are unable to maximize their sales of oil cake because of difficulties in selling surplus soybean oil in the US. Soy oil being sold into the US presently faces a tariff of 18% which is decreasing at the rate of 2.25% per year as per the Canada United States Trade Agreement...”

“Institutional development: We suggest the Board initiate the establishment of a Soyfood Development Association similar in structure and function to the Canola Council of Canada... There is a need to begin to bring all industry stakeholders together to systematically identify problems, information and research needs; develop data bases; and cooperatively promote the soyfood industry.”

Soybeans for food purposes: The total volume of soybeans consumed as soyfoods in Vancouver (BC), Toronto (Ontario), and Montreal (Quebec) was estimated at about 6,000 tonnes, and imports were estimated to be equivalent to 8,000 tonnes of soyfoods.

Miso: One large Vancouver producer and one Toronto producer estimated that the volume of soybeans used to make miso in Canada is only about 35 tonnes/year.

Modern Soy Protein Products: Soy flour, concentrates, isolates, and textured soy protein products. Roughly 2,400 tonnes of soybeans are used in Canada for the production of these products, and 5,600 tonnes of soybeans are used to make the imported products (only bakery flour and extruded flour are made in Canada). Almost 1,000 tonnes of soy protein concentrates and isolates, and 400 texture soy proteins were imported, 83% from the USA. Total exports were 800 tonnes, of which 578 tonnes went to the USA. Soy flour (full-fat): The term “flour” generally signifies that the material has been ground finely enough to pass through a 100-mesh screen. Only relatively small volumes of full-fat

soy flours are used directly as human foods. Some are used in bread, crackers, and pastry products. 5 companies in Canada make 1,538 tonnes of soy flour worth \$495,000.

Natto: Canadians sell roughly 8 to 10 thousand tonnes of natto beans in Japan each year. Natto-type beans are “created by screening out the small beans from among regular food grade soybeans which have white hilums” (p. 15). In Japan about 100,000 tons/year of soybeans are used to make natto. Recently, Canada (via 3 companies—First Line Seeds, W.G. Thompson, and King Grain) has supplied about 10% of this market. Ontario produces about 8,000 to 10,000 tonnes of natto beans. Competition is expected to increase from U.S. seed breeders.

Soy milk: There are presently no large Canadian soy milk manufacturers. A plant is being built by an international trading company near Vancouver (YHS Pacific Fruit Concentrates Ltd., owned by Yeo Hiap Seng). It will supply both the local market and the Western U.S. market when it goes on stream later this year. A high proportion of imported soy milk is organic. Two brands account for 3/4 of all imports: Edensoy and Vitasoy. A high proportion of all soy milk imports are certified organic. This emphasis makes it difficult for Canadian producers to compete because of the shortage of organic soybeans in Canada. Consumption of soy milk is increasing at about 10% a year. Prices range from \$1.50 to \$2.75 per liter, with the organic product commanding the higher prices. Just under 100 tonnes of soybeans are used to produce soy milk in Canada: Vancouver 42 tonnes, Toronto 30 tonnes, Montreal 25 tonnes, plus imports 240 tonnes. 1 kg of soybeans produces 16.5 kg of soy milk.

Soy nuts: The volume of soy nuts made in Canada is quite small. One Toronto company [Grove Country Foods Canada, Inc.; they were in business 1-2 years, but were out of business by Jan. 1991], which began operation in Nov. 1988, sells a line of roasted nuts, which are roasted in the USA and chocolate-dipped in Ontario. Production was only a few tonnes in 1989 and is estimated to be about 10 tonnes in 1990.

Soy sauce: In 1986, according to Statistics Canada data, 2,503 tonnes of soy sauce were produced by 6 firms. The value was \$2,161 per tonne for a total of \$5,411,000. In 1988 Canada imported 5,680 tonnes of soy sauce valued at \$4 million, primarily from China, the United States, Hong Kong, and Japan. Exports were 58 tonnes valued at \$65,000. The major Canadian producers are China Lily and Sun Fresh in Toronto, Wong Wing and VH in Montreal, and Golden Dragon in Vancouver. The value of Toronto production is currently estimated to be about \$5 million.

Soy sprouts: One Toronto manufacturer uses 20-25 tonnes of soybeans per year.

Tofu: About 3,300 tonnes of soybeans are used to produce tofu in Canada, more than any other soy food. The volume of soybeans used is estimated at 1,400 tonnes in

Toronto, 1,200 tonnes in Quebec (when a relatively large operation in Hull [La Soyarie, Inc.], near Ottawa, which exports to Ontario is included), 625-700 tonnes in Vancouver, and 125 tonnes for imported tofu. 1 kg of soybeans produces 2.4 kg of tofu.

Tempeh: Only about 33 tonnes of soybeans are used to make tempeh in Canada, and an estimated 15-20 tonnes in Ontario. Imports are relatively small. 1 kg of soybeans produces 1.6 kg of tempeh. Very few firms produce tempeh in Canada. One producer claims to have over half the Ontario market. A major distributor suggested they sold 4-5 times as much tofu as tempeh.

Soybean crushing: Since 1986 the number of firms crushing soybeans and producing soy oil has decreased from 3 to 2 [Central Soya owns two plants; in 1990 they bought the Canadian Vegetable Oil Processing (CVOP) plant in Hamilton, Ontario, formerly owned by Canada Packers Inc. They purchased Victory Soya Mills in Toronto in early 1985. So now 2 firms own 3 plants]. In 1986 the three plants made 95,108 tonnes of crude soy oil worth \$57,271,000. Two firms made deodorized soy oil, but the volume and value were confidential. Less than \$2 million of any type of soy oil is imported.

Consumption of soy foods in Canada is strongly linked to Asian-Canadians. A table (p. 32) shows that according to the 1986 census, there were about 444,000 people of East- and Southeast Asian origin living in three major Canadian cities: Vancouver (155,105 people comprised 11.2% of the city's population), Toronto (234,325 people comprised 6.8%), and Montreal (55,585 people comprised 2.4%). Thus Toronto was by far the largest market, but Vancouver had the highest density of Asian-Canadians. A similar table (p. 33) updates the previous table to 1988. Immigration has increased sharply since then.

Note: This is the earliest document seen (Feb. 2002) that uses the term “food grade” (or “food-grade”) in connection with Canadian soybeans (see p. 15). Address: Chatham, ONT, Canada.

3488. Krohn, Joni. 1990. Standard Industrial Classification (SIC) Codes (Interview). *SoyaScan Notes*. April 5. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** *The Standard Industrial Classification Manual* is published by the Office of Management and Budget (OMB), which also publishes the SIC codes. Another related publication is the *The Numerical List of Manufactured and Mineral Products*, and its *Alphabetic Index*, both published by the Census Bureau (within the Department of Commerce); these documents expand the basic 4-digit SIC codes to 7-digits to give more detail: Our industry is most aptly characterized by 2075A = Soybean products.

0116 = Soybean farms. Any industry that starts with zero is agricultural.

2024-071 = Mellorine and similar frozen desserts, incl. those made with tofu.

2026-717 = Products which substitute for fluid milk products [probably includes soymilk].

2026-718 = Other perishable dairy product substitutes [probably includes soy yogurts & cheeses].

2035 = Pickled fruits and vegetables.

2035-234 = Other finished pickles and pickled products [incl. mixes, relishes, peppers, onions, and mushrooms; probably includes miso].

2035-351 = Other sauces, incl. Worcestershire, soy sauce, horseradish, meat, vegetable, etc.

2075 = Soybean flour, grits, meal, cake, and soy oil (unrefined).

2079 = Soybean cooking and salad oil.

2084 = Soybean fibers.

2099-955 = Tofu (Bean curd).

2099-998 = Other perishable prepared foods, sold in bulk or packages, not frozen [probably includes tempeh].

Note: in May 1984 the "Primary SIC" code assigned to tofu manufacturers by Dun & Bradstreet was either 2075 (Soybean Oil Mills), or 2099 (Food Preparation Nec.). Address: Dep. of Commerce, Bureau of the Census, Economic Surveys Div., Industry & Commodity Classification Branch, FOB-3, Room 2744, Washington, DC 20233;. Phone: 301-763-1935.

3489. Drosihn, Bernd. 1990. The founding and history of Viana Naturkost GmbH in Cologne (Interview). *SoyaScan Notes*. April 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bernd started to make tempeh in Cologne in about Aug. 1989 after leaving Soyastern. He moved the company to his present address in Huerth, and started making soyfoods there in Jan. 1990. He makes 3 types of tempeh, 2 tempeh burgers, and 2 tempeh spreads (introduced in 1990). The burgers and spreads are selling well, but the basic tempeh is going more slowly since it is a little unknown to the German consumer—not as well known as tofu. The only other tempeh company in Germany is Byodo in Munich—they also make tofu. Both Bernd's company and Byodo make about 200 kg/week of tempeh. They each make their own tempeh starter. Recently Bernd wrote a little tempeh cookbook titled *Tempeh: A traditional food with a future* (1989, Viana).

The founder of Byodo was Lukas Kelterborn. Harry Whitford came a little after it was founded. Whitford left Soyastern about 6 months ago and since then has been unemployed, living in Dorsten (100 km away; Alleestr. 13a, D-4270 Dorsten 1, West Germany. Phone: 02362-43493), where he runs a Zen Center.

Bernd feels that the future looks bright for his company, in part because he is also making second generation tofu products, including 2 tofu spreads, and 1 tofu sweet cream

dessert, all launched in 1990. He buys the tofu from Tofuhaus Tiefenthal because the quality is excellent, better than from Soyastern although the price is higher than that from Soyastern.

He is now also making two short-term misos (a rice miso and chick-pea miso), fermented for 3-4 months, plus a miso spread. He started to sell these 6 weeks ago and they are selling well. His company address used to be Neusserstrasse 199, D-5000 Cologne 60, but he has recently moved. Address: Founder and president, Viana Naturkost GmbH, Schmittenstr. 106, D-5030 Huerth 6 (Fischenich), West Germany. Phone: (02233) 41323.

3490. Drosihn, Bernd. 1990. Re: New soyfoods companies in Germany, and the German tofu industry. Letter to William Shurtleff at Soyfoods Center, April 8. 2 p. Typed, with signature on letterhead. [Eng]

• **Summary:** Gives the addresses of 4 new tofu companies and 2 miso companies, plus an estimate of the weekly production of ten German tofu companies. Address: Founder and owner, Viana Naturkost GmbH, Schmittenstr. 106, D-5030 Huerth 6 (Fischenich), West Germany. Phone: (02233) 41323 or 221-121175.

3491. Shimizu, Teruo. 1990. Recent developments at Miyako Oriental Foods (Interview). *SoyaScan Notes*. April 17. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Miyako is presently making about 900 metric tons/year of miso, making them the largest miso manufacturer in America. This is up 30% compared with three years ago (when the dollar/yen exchange rate changed dramatically), but there has not been much increase during the past 2 years. About 80% of sales are to the Asian-American market (including small exports to Japanese in Mexico), and 20% to the natural foods market. Westbrae, a former customer, is now buying their miso from Canada. They are now trying to increase their sales to the Korean-American market. The younger generation of Korean-Americans finds the flavor of Korean miso to be too strong. They (and some Korean restaurants) like to mix equal parts of Miyako rice miso with Korean miso. Some Korean restaurants have switched to using only Japanese miso. One reason is that the quality of Korean miso is inconsistent.

They are selling quite a bit of dry koji to Grainaissance and to Cedarlane, both of whom use it to make amazake. Two years ago Miyako purchased an expensive, automatic, computer-controlled rotary koji fermenter from Nagata Brewery Machinery Co. (the biggest company; they also sold such a machine to Takara USA, the sake maker). It is working very well for them. The only other manufacturer of such fermenters is Fujiwara in Okayama. Address: Vice President, Miyako Oriental Foods Inc., 4287 Puente Ave., Baldwin Park, California 91706. Phone: 818-962-9633.

3492. Leigh, Roberta 1990. Soyfoods: Why their popularity is growing. Special advertising section. *New Age Journal (Boston, Massachusetts)* 7(2):100-. March/April.

• **Summary:** Since the 1920s, Americans have been taught that they need at least two servings of meat and two glasses of milk each day to get enough protein. Many people switching to vegetarian diets or reducing their meat consumption feel most comfortable if they continue to plan at least some of their meals around a high-protein food.

“Consequently, the popularity of soyfoods has boomed during the past two decades... They can also be prepared in a number of ways, such as tofu and tempeh, that mimic ‘meatiness’ in terms of eating satisfaction.

“Shoyu and tamari, both fermented soy sauces, and miso, a fermented soy paste, are often used as bases for soups, gravies, and sauces; many people feel they impart a rich flavor to meat stock. Soy milk and soy cheese are popular with people who want to minimize or eliminate dairy products from their diets. There are even smokey-flavored imitation bacon products made from soy.

“Tofu is a cheese-like product containing the protein, oil, and soluble carbohydrates from whole soybeans that have been crushed and cooked...—Roberta Leigh.”

3493. **Product Name:** Cold Mountain Miso (Made with Organic Soybeans) [Red, Mellow White, or Light Yellow].

Manufacturer’s Name: Miyako Oriental Foods, Inc.

Manufacturer’s Address: 4287 Puente Ave., Baldwin Park, CA 91706.

Date of Introduction: 1990. April.

New Product–Documentation: Portfolio sent by Terry Shimizu of Miyako Oriental Foods. 1999. Nov. 22. Talk with Terry Shimizu. 1999. Nov. 29. This product was introduced in April 1990. Only the soybeans are organic.

3494. Muso Co. Ltd. 1990. Muso product manual: Foods from Japan. Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. 62 p. Catalog. April. 30 cm. [Eng]

• **Summary:** This English-language catalog describes Muso’s natural-food macrobiotic products that are exported to the West. There are 8 pages of color photos at the front, and many flowcharts and recipes in the body of the catalog. Interesting color photos include: Shoyu fermentation room. Spreading moromi before pressing to make shoyu. Hatcho miso aging room. Drying kombu and cultivating nori on nets. Umeboshi and brown-rice vinegar. Shiitake mushrooms growing on logs and huge kudzu roots.

Contents: Shoyu (organic, low salt), tamari (wheat-free soy sauce), miso (Hatcho, barley, rice, white miso, brown-rice miso, awase miso [mixed miso], buckwheat miso, unpasteurized miso [nama miso]), seaweeds, Japanese pasta, wheat free pasta (incl. kudzu noodles), Japanese tea, other beverages, soymilk, amazake, ume/plum products (incl. umeboshi), Japanese pickles, dried foods (incl. kudzu root

starch, shiitake mushrooms, koya tofu, fu [gluten cake]), condiments (incl. tekka miso, *nori no tsukudani*, natto miso [miso condiment]), seasonings, instant foods (incl. brown rice mochi, yomogi mochi, kibi mochi, yaki mochi, abekawa mochi with kinako, cooked brown rice, ramen [Chinese style noodles], instant miso soup), crackers and chips, barley malt syrup and rice malt syrup, food supplements (plum balls, kombu balls), adzuki beans, black soybeans, nigari. Address: Osaka, Japan. Phone: 06-942-0343.

3495. Macfarlane, Bruce J.; Riet, W.B. van der; Bothwell, T.H.; et al. 1990. Effect of traditional oriental soy products on iron absorption. *American J. of Clinical Nutrition* 51(5):873-80. May. [28 ref]

• **Summary:** Various soy products (silken tofu, tofu, tempeh, natto, different types of miso, sufu, and soy flour) were fed to 242 women. Blood levels of iron were then compared. Silken tofu, tempeh, natto, and the misos showed better iron absorption than tofu and sufu. The authors speculated that because tofu is higher in calcium, it might be this calcium that is inhibiting iron absorption. Silken tofu, coagulated with GDL, has a much lower calcium content than silken tofu. Address: MRC Iron and Red Cell Metabolism Unit, Dep. of Medicine, Univ. of Witwatersrand, Johannesburg; Div. of Food Science and Technology, CSIR, Pretoria; and the Dep. of Medicine, Univ. of Natal, Durban, South Africa.

3496. Vanka-Kawat B.V. 1990. Topmerken in de Aziatische levensmiddelen: Prijslijst [The top brands in Asiatic foods: Price list]. 3e v.d. Kunstraat 18, 2521 BB Den Haag, Netherlands. 22 p. [Dut]

• **Summary:** The subtitle is “Import-Export Asian Food Specialties.” Imported items are listed by country of origin. Non-imported are listed by product type: China: Pearl River mushroom soy, soy superior, and superior soy. Philippines: Silver Swan soy sauce. Hong Kong: Best black soy, Best light soy, Best soy light, Best soy sauce, Black soy, Black soy yellow label, Hoi sin sauce Meechung, Taotjo bean sauce. Japan: Akamiso, Kikkoman menmi, Kikkoman shoyu, Kikkoman steak sauce, Kikkoman teriyaki sauce, Marukin soy sauce, Morinaga silken tofu, Nagatani-en akamiso, shiro-miso, Teriyaki sauce. Ketjap: Ketjap kaki tiga, Ketjap A, Ketjap ‘A’ manis, Ketjap benteng asin, Ketjap benteng manis, Ketjap vital, Superior soy, Tiger brand soy, Yellow label. Singapore: Salted soy beans sin sin, Taotjo bean sauce, Taotjo flower brand, Taotjo taksan. Taiwan: Black beans fermented [soy nuggets], Soy sauce ve wong, Tahoe amigo, Tauge [sprouts]. Fresh products: Vacuum packet fresh tofu. Fresh tempeh. Address: The Hague, Netherlands. Phone: 070-388- 88 04.

3497. Oka, Seizo. 1990. Early Japanese immigrants to Hawaii (Interview). *SoyaScan Notes*. June 7. Conducted by

William Shurtleff of Soyfoods Center.

• **Summary:** The first contracted labor immigrants from Japan arrived in Hawaii in 1868 aboard the ship *Scioto*. They took with them miso and shoyu. Before that time, some Japanese drifted ashore or were shipwrecked on Hawaii. A number of groups were supposed to follow the first group, but there was a dispute in the contract so the program was terminated with the first group.

The ship *Scioto* (pronounced sai-OH-tuh) was apparently named after a river in Ohio that flows 237 miles southward through Columbus and empties into the Ohio River in Scioto County. It belonged to the Pacific Mail Steamship Co. of the USA. In Japanese the ship's name is usually romanized in katakana as *Saioto-go* (or less commonly as *Shioto-go*), where "go" (the Japanese character for "number") is a suffix widely used with the names of ships, trains, and other vehicles. "Go" is not a counter for ships—the counter is "seki," such as isseki, niseki.

Robert W. Irwin, an American who became an agent in Yokohama for the Pacific Mail Steamship Co., played a key role in both the 1868 and 1885 contracts. The first group consisted of 148 Japanese. They were under a contract made between the Japanese government and the Hawaiian kingdom. But because of a dispute in the contract, 40 members of the group returned to Japan without fulfilling the contract; 108 remained in Hawaii and fulfilled the contract. Since they left in 1868, the first year of Meiji, they are often referred to as "Gannen mono" which means "Fellows of the first." In 1885 the contracted labor was resumed, and continued on for several years. The second group of contracted labor immigrants was carried from Japan to Hawaii on the ship named *City of Tokio*. Address: Founder and former Head, History Room, Japanese Cultural and Community Center, 1840 Sutter St. #206, San Francisco, California 94115. Phone: 415-751-5951.

3498. Stachura, Irena. 1990. About the ship *Scioto* (Interview). *SoyaScan Notes*. June 9. Conducted by William Shurtleff of Soyfoods Center. [1 ref]

• **Summary:** In the book titled *Merchant Sail* by William Armstrong Fairburn two vessels named *Scioto* are listed. The first was built in 1831. Tonnage: 141 tons. Length: 81 feet. Beam/width: 23 feet. Depth: 9 feet. Rigging: Schooner (with triangular sails, pointed at the top). It was probably not built on the West Coast since there is very little information about it in the files of the National Maritime Museum. It was probably built on the East Coast. It is not listed as a Gold Rush vessel.

The second vessel named *Scioto* was built in the Skolfield yard. It was a ship, with 3 masts or more. For more information contact the Mystic Seaport in Mystic, Connecticut. Address: Research Librarian, National Maritime Museum Library, Bldg. e, Third Floor, Fort Mason

Center, San Francisco, California 94123. Phone: 415-556-9870.

3499. Sakaguchi, Noboru. 1990. Early history of making tofu at Le Bol en Bois (Interview). *SoyaScan Notes*. June 14. Conducted by David de Korsak in France.

• **Summary:** In 1969 Mr. Sakaguchi made his first trip to Paris from his homeland, Japan. He returned to Paris in March 1974, and became aware of the possibility of buying a macrobiotic restaurant from a friend who at the time was a cook in that restaurant. From April-Aug. 1974 he returned to Japan to finalize a deal with Japanese investors and to study tofu making. While he was in Paris touring vegetarian restaurants, Mr. Sakaguchi had been struck by the lack of protein in the foods he saw. Tofu naturally came to his mind as the food that would ideally supplement (and complement) that vegetarian cuisine. "Tofu was missing... I thought of this as my mission."

On 2 Sept. 1974 Mr. Sakaguchi opened Le Bol en Bois. He had expanded it to include a natural foods retail store located directly across the street. In the last quarter of 1975 he began trials making tofu using calcium sulfate as a coagulant. In about Nov. or Dec. 1975 he began commercial production of tofu, using real nigari as a coagulant. He sold this tofu only at Le Bol en Bois natural foods store and served it in his restaurant. An invoice dated 26 Dec. 1975 from Mitoku Company Ltd. in Japan shows that he imported 40 kg of nigari (\$17.34), 50 x 150 gm packets of nigari (\$33.27), a grinder for making tofu (\$562), other pieces of tofu making equipment (\$450.35), as well as 1,800 liters of Sakae Tamari-Shoyu, 900 liters of Johsen Tamari-Shoyu, and 200 kg of brown rice miso. Production remained limited (two days a week, 40 cakes per day) until the end of 1976. Mr. Sakaguchi made the tofu himself, helped by some Japanese students. One evening in the winter of 1976 an unusually large number of people came to the store to buy tofu. This corresponded to the end of a conference held by Michio Kushi in Paris. The store became the focus of a lot of interest and activity. Production jumped to roughly 240 cakes per day, two days a week. By the end of 1976 Mr. Sakaguchi had hired his first employee to help him make tofu.

In 1985 the tofu production activity was set up as a separate company named Daizou, located outside of Paris at Champigny sur Marne. At that time production was about 300 cakes per day, two days a week. Mr. Sakaguchi now began to make tofu more than twice a week and to sell this tofu at other retail outlets in addition to his own. Address: 883 Rue de Bernau-Z.I., 94500 Champigny Sur Marne, France. Phone: 48 82 39 90 or 47.06.33.71.

3500. Wollner, Joel. 1990. Re: History of early work with amazake, koji, and Rice Dream in America. Letter to Jan Belleme, Saluda, North Carolina, June 23. 3 p.

• **Summary:** “Starting in the early 1970s, Erewhon imported scant supplies of a highly perishable, fresh rice koji along with its regular line of Japanese products. Most often, this koji was spoiled or worm-infested by the time it arrived in Boston, Massachusetts. But on those few occasions when a usable amount arrived intact, we had the rare pleasure of attempting to make amazaké at home.” One attempt was made on Thanksgiving of 1973. In spring 1977 the Erewhon flagship store on Newbury Street in Boston began to sell Cold Mountain Misos, then Cold Mountain Koji. The misos sold well but not the koji, so Joel and his wife, Wendy, developed a simple method for making amazake at home.

Mona Schwartz in Florida began to order koji from Joel and developed a good recipe for making it into amazake. Joel learned and perfected the process, then described it in detail in the 10-16 April 1978 edition of his newsletter *Erewhon News (Newbury Street)* under the title “Overnight Amazake.” “You can imagine my surprise—no, shock—when, later that spring Charles Kendall, macrobiotic aficionado, keeper of the Erewhon Company store, and supplier to our store of ‘homemade’ organic sauerkraut (his own), approached me one day in the store and asked if I would consider selling the refrigerated amazaké drink he had developed.” The rest is history.

In about the spring of 1985, Joel and Sjon Welters drove to Moniteau Farm where Robert Nissenbaum and Dave Carlson, calling themselves Imagine Foods, were making a frozen confection from amazaké. “This new incarnation of an old Boston study-house favorite, was actually made from a mixture of amazaké, which they first made from Cold Mountain koji and Chico-San brown rice, combined with Chico-San rice syrup and various natural flavorings, and run through a soft-serve ice cream machine. (A frozen dessert made in several flavors from rice kayu sweetened with rice syrup and/or barley malt syrup was sold at Erewhon Newbury Street in 1977-78.)”

But Imagine Foods was having technical and flavor products with its product. In Fayetteville, Arkansas, Joel and Sjon had developed a “series of amazaké-like beverages and desserts made by enzyme conversion from whole grains, including brown rice... Of course, our work was top secret, since, at the time, enzyme processing was virtually unknown in the natural food industry, and used for little more than processing corn syrup in the conventional food industry. Robert and Dave had no knowledge of it at all.

“Sjon and I confirmed (to ourselves) the rightness of our enzyme process for use in Rice Dream to make a single brown rice base ingredient for the mix. This development alone would solve the technical and flavor problems to make a commercially feasible product with a broadly appealing taste and texture. We decided to invite Robert and Dave to relocate to Fayetteville and purchase the base ingredient, which would be made in our plant, from us. Months of negotiations would pass before the enzyme

process solution was finally revealed to Imagine Foods [by whom?] at the next NNFA show. But then, through a series of twists and turns, Sjon and I lost control, and the enzyme process project was ‘diverted’ to California Natural Products. More than this, I am not prepared to discuss at this time.” Address: 19 Pepper Hollow Drive, Clifton Park, New York 12065. Phone: 518-383-0299.

3501. Barnard, Neal D. 1990. *The power of your plate: A plan for better health*. Summertown, Tennessee: The Book Publishing Co. 240 p. Index. June. 23 cm. [65* ref]

• **Summary:** In this book 17 experts, including such eminent medical professionals as Michael DeBakey, William Castelli, and C. Wayne Callaway, meet on common ground with the author concerning the benefits of a low-fat, low-cholesterol, high-fiber diet—that is, a food program that is largely free of meat. The subtitle on the title page reads: *Eating well for better health—17 experts tell you how!*

Contents: Introduction. Part I. 1. Cholesterol, food, and your heart. 2. Dr. Michael DeBakey: An interview. 3. Tackling cancer. 4. New strategies in weight control. 5. Uninvited guests: Food-borne illness. 6. Other common health problems. 7. Foods and the mind. 8. The evolution of the human diet. Part II. 9. Recommendations. 10. Beyond willpower. 11. Food ideas and recipes. References.

Soy-related recipes include: Scrambled tofu (to replace scrambled eggs, p. 215). Miso soup with wakame (p. 216-17). Tofu salad (like eggless egg salad, p. 219). Tofu sour cream (p. 231).

Dr. William Castelli of the Framingham Heart Study notes: “We’ve never had a heart attack in Framingham in 35 years in anyone who had a cholesterol under 150.” Address: M.D., Physicians Committee for Responsible Medicine, Washington, DC.

3502. Cardenas, Danilo C. 1990. Status of the Philippine soyfood industry. Paper presented at the International Conference on Soybean Processing and Utilization. Held 25-29 June 1990 at the Jilin Academy of Agricultural Sciences, Gongzhuling, China. *

Address: Supervising Science Research Specialist, Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development (PCARRD), Los Baños, Laguna 3720, Philippines.

3503. Lark, Susan M. 1990. *The menopause self help book: A woman’s guide to feeling wonderful for the second half of her life*. Berkeley, California: Celestial Arts. 239 p. 22 x 22 cm. [228* ref]

• **Summary:** The title page states: “The first completely practical all-natural master plan to relieve and prevent every symptom of menopause.”

Soy is mentioned as follows: Dairy products: There are many negative health aspects of using dairy products.

Soybeans are a good source of calcium. Soy milks and nut milks can be used as alternatives to dairy milk (p. 46). Breakfast–beverages: Stop using coffee, which contain caffeine. Grain-based coffee substitutes such as Postum, Pero, or Caffix are both nutritious and satisfying. Other good breakfast beverages include nondairy milk, such as soy, nut, or grain milks. Soy milk is now easy to find in health food stores (p. 52-53). Spreads: Peanut butter (without added salt), sesame butter (which is rich in calcium), and soy spreads are good (p. 55). Soups: For women who can't eat soup unseasoned with salt, try adding one teaspoon of miso per cup of soup. Miso, a fermented soy product from Japan, is widely available at Oriental markets and health food stores. It contains less salt than regular table salt. How to substitute for dairy products: Tofu can be used in some recipes to replace cheese. Use soy milk, nut milks, or grain milks in place of dairy milks (p. 70). Substitutes for common high-stress ingredients: In place of 1 cup milk, use 1 cup soy milk, nut milks, or grain milks. In place of ½ teaspoon salt, use 1 tablespoon miso or ½ teaspoon Bragg's liquid amino acids, or ½ teaspoon sea vegetables–dulse, kelp (p. 72-73).

Chapter 8, titled “Menopause self help cookbook,” contains many recipes: A “Fruit smoothie” (p. 75) contains only fruits, no dairy products or soy. For recipes for sesame milk and almond milk, see p. 76. Tofu and sesame-butter spread (p. 79). One dish meals: Almond tofu (Tofu with almonds), and Tofu with snow peas (p. 94). Tofu-wild rice salad (p. 95). Tofu & brown rice (p. 96). Apple-tofu custard (p. 97).

In chapter 10, titled “Herbs for menopause,” is a section on “Herbs for your menopausal symptoms.” The subsection titled “Heavy irregular menstrual bleeding” notes that bioflavonoids, flavonoids from plants, help to strengthen capillaries and prevent heavy bleeding. The section titled “Hot flashes” states: “Many plants are good sources of estrogen, the hormone that helps to control hot flashes. Besides controlling heavy menstrual bleeding, bioflavonoids also have weak estrogenic activity (1/50,000 the strength of estrogen). They are very effective in controlling such common menopause symptoms as hot flashes, anxiety, and irritability... Plants also form the basis for the production of medical hormones. Many common plants such as soy beans and yams contain a preformed steroidal nucleus. Estrogen and progesterone can be synthesized from plants in relatively few steps and have allowed sex hormones to become available commercially at a reasonable cost” (p. 127-28).

Susan M. Lark, M.D., born in 1945, “is a noted authority on women's health care and preventive medicine. She is the Director of the PMS and Menopause Self Help Center in Los Altos, California. She also sees women patients in her private practice. Dr. Lark has been on the clinical faculty of Stanford University Medical School, Department of Family

and Preventive Medicine. She is also an associate member of the Department of Family Medicine, El Camino Hospital in Mountain View, California. Dr. Lark lectures widely on women's health care issues and is a sought-after speaker.”

On the inside rear cover is a mail order form for Dr. Lark's Menopause Self Help Book, plus 3-month supplies of Menopause Vitaminerals, Herbal Formula, and Essential Oil, to be sent to Self Help Options for Women, Carson City, Nevada. On the rear cover is a portrait photo of Dr. Lark. Address: Director, The PMS and Menopause Self Help Center, 101 First St., Suite 441, Los Altos, California 94022. Phone: (415) 964-7268.

3504. Muso Shokuhin. 1990. [Pure heart: Muso general catalogue]. Otedori 2-2-7, Chuo-ku, Osaka 540, Japan. 88 p. Printed 1 July 1990. 30 cm. [Jap]

• **Summary:** This strikingly beautiful, full-color catalog, pictures and describes Muso's natural-food macrobiotic products in Japanese for the Japanese market—although the title is written only in English. Includes many kinds of miso, shoyu (incl. Marushima Shoyu), black soybeans, yellow soybeans, kinako [roasted soy flour], seitan (in a jar from Marushima, p. 41; the product name is written as “Seitan” in large roman letters, then in smaller letters in katakana), San-Iku Foods canned products (Gluten Burger, Gluten Meat, Linketts, Soyees, Snack Joe; p. 41), yuba, gomoku nimame (cooked whole soybeans), many kinds of sea vegetables and related products, San-Iku Soyalac (8 different products), Marusan soymilk (5 different products; 3 are named mineral tou-jyan; the latter is the Chinese term for soymilk), macrobiotic books. Address: Osaka, Japan. Phone: 06-942-0343.

3505. Miller, Bryan. 1990. Restaurants:... Sushisay, basic and raw. *New York Times*. July 6. p. C18.

• **Summary:** This is a review of the Japanese restaurant Sushisay (38 East 51st St.), the only American outlet of a 26-restaurant chain in Japan. It specializes in raw and marinated seafood. One of the few cooked items, an appetizer, “is grilled squid legs. Bite-size pieces of crispy squid dipped in soy sauce are as addictive as popcorn.” Another of its starters is “maguro natto, tuna in fermented soy beans, which had a texture and highly fermented flavor that was off-putting to some tastes.” A soup the reviewer liked was “asari wan, a light miso broth with little-neck clams in the shell,...”

3506. Marshall, Philip. 1990. Early work with soyfoods in the UK: Direct Foods, Whole Earth, Harmony Foods Ltd., and Haldane (Interview). *SoyaScan Notes*. July 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Brian Welsby founded Haldane Foods in 1983. But he was active with health foods long before 1980. He used to do the product mixing for a company named Direct

Foods Ltd. (in Petersfield, Hampshire), which was owned by Peter and Anna Roberts, a very nice, committed pair of vegans. They were among the first people to market dried soya products, particularly TVP, in the UK. And they were certainly the first people to develop the market for composite dry soya products—like burger mixes. Philip has no idea when Direct Foods started, but it may have been in the late 1960s. [Note: It started in Aug. 1969.] They were one of the pioneers of vegetarianism and veganism in England.

Greg and Craig Sams are brothers, both American. Both are very talented guys, excellent at marketing. Greg is in a wheelchair. In the early days, both were the key figures/principals at Whole Earth with the early events at Portobello Road. Whole Earth, which started as a bakery, became Harmony Foods, a large health food wholesaling company. [Note: In 1980 Harmony Foods Ltd. was at 12 Orpheus St., Camberwell, London S.E., England.] Harmony had some of its own Harmony Foods brands and was one of the first companies in the UK to import Japanese miso, shoyu, etc. At some point, Whole Earth was sold off as a health food wholesaler, and its still going with such popular brands as Whole Earth jams, sauce, etc.

Peter Fitch was responsible for putting together the Haldane Foods Group, which incorporates Direct Foods, Haldane Foods, and Realeat. Address: Owner, Cauldron Foods Ltd., 149 South Liberty Lane, Ashton Vale Trading Estate, Bedminster, Bristol BS3 2TL, England. Phone: (0272) 632835.

3507. Gerner, Bob. 1990. Best-selling soyfoods at Berkeley Natural Grocery Co. in Berkeley, California (Interview). *SoyaScan Notes*. July 28. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** By far the best selling soyfood product type at Bob's store is soymilk, accounting for 50-65% of total soyfoods sales. The best selling brands, in descending order of sales volume, are Vitasoy (about 40% of soymilk sales, and rising; his store promotes it more in part because he sees sales reps longer and in part because the Vanilla Vitasoy is his favorite soymilk product), Edensoy (30-35% and falling; it used to be the best seller), Westsoy and Westbrae Malted (20% and rising), Pacific Soy (from Tree of Life), and Other (Wildwood Yosoy, Quong Hop, Soy Moo, AhSoy, 5%).

The next best selling soyfood type is tofu (accounting for about 20% of total soyfoods sales, and rising), followed by soy sauce & tamari (10%, stable), soy cheeses (4%, rising), tempeh (2%, falling), soy ice cream (1%, stable or falling), and miso (1%, falling).

Total per capita purchases of soyfoods have risen steadily since the mid-1970s. There have been no plateaus or declines.

Bob dislikes (but understands) the way soymilk manufacturers discount their products, basically forcing him to buy very large quantities—typically 60 cases at a time. This policy favors large retailers, ties up a lot of his capital up-front, and takes up a lot of space in his warehouse. So 95% of the time he buys Vitasoy and Edensoy soymilk when they are on sale at discount prices, then he sells these at discount/sale prices—a practice that he does not like since it seems to contradict the idea of a “sale.” Customers won't buy soymilk any more at “regular” prices. Bob would rather buy what he needs from week to week, then sell all products at a regular price most of the time, then have promotions once in a while. Vitasoy has played a lot of games with distributors to try to get them to buy more at one time, and Bob has heard that this is hurting the distributors and that they don't like it. They can't make money selling at an 8% margin, which they often must do. Edensoy's discount is constant whereas Vitasoy has on and off discounts—which makes buying harder for Bob. Westbrae/Vestro has a more typical discount policy and Bob sells Westbrae products at a regular price most of the time. Address: Owner, Berkeley Natural Grocery Co., 1336 Gilman St., Berkeley, California 94706. Phone: 415-526-2456.

3508. Gray, Sylvia Ruth. 1990. B-12 update. *Solstice* No. 44. p. 6-8. July. [2 ref]

• **Summary:** Her most current miso assay documents vitamin B-12 values 33 times higher than the negligible values reported by previous studies from the Netherlands [Dagnelie et al. 1988] and Cincinnati, Ohio [Specker et al. 1988]. Mercury inactivates B-12. The author is a strong believer in macrobiotics. Address: Strictly Macrobiotic, 315 First Ave., Salt Lake City, Utah 84103. Phone: 801-521-7936.

3509. Karta, Susani K. 1990. The market prospective for tempeh in the year 2000. In: Ontario Ministry of Agriculture and Food, ed. 1990. Soybean Buyers Mission from New Markets, July 1-7, 1990. Tokyo, Japan: Ontario Ministry of Agriculture and Food. 61 p. July. See p. 19-33.

• **Summary:** Contents: Introduction. Market situation for tempeh in Indonesia. Health and nutritional significance of tempeh. Tempeh for weaning food. Constraints and trends in the market development of tempeh. Recommended guidelines and strategies. Ideas for the diversification of tempeh utilization: Tempeh as a food ingredient, new tempeh food opportunities.

Tempeh flour (dried, ground tempeh) used in weaning foods could dramatically reduce the diarrheal diseases among children in Indonesia and other countries. The author estimates the potential demand for tempeh flour in weaning foods used for this purpose in the year 2000 to be 27,720 tonnes in Indonesia and 470,880 tonnes in all Asian developing countries. This assumes average tempeh flour

consumption of 10 gm/day per child or 3.6 kg/year per child.

In 1983 Indonesians consumed about 927,000 tonnes of soybean as food, increasing to 1,528,000 tonnes in 1958. About 50% of these soybeans were used to make tempeh, and 40% to make tofu; the remaining 10% were used to make soy sauce and “tauco” (a fermented whole soybean condiment [Indonesian miso]). In 1988 the average Indonesian consumed 6.45 kg/year of tempeh (equivalent to 4.3 kg of soybeans). In the past 5 years, consumption of soyfoods in Indonesia has increased by an average of 10% annually.

According to a 1988 report from the Indonesian Ministry of Agriculture, the average daily per capita consumption of calories is still below the recommended Indonesian guidelines. In 1988, calorie consumption was only 1,794 calories/capita/day, or about 28% below the recommended 2,500 calories. Protein intake was about 43.3 grams/capita/day, or about 21% below the recommended 55 gm. “Consumption levels of traditional soyfood such as tempeh will continue to grow as the population attempts to meet its protein needs. Moreover, in view of the purchasing power of the average Indonesian consumer, we can expect a continuing increase in the demand for tempeh as it is widely available at a much more affordable price than animal protein... For tempeh manufacturing, imported soybeans are preferred because they are larger and cleaner.” Address: MSc, RD, Manager, P.T. Indofood Interna Corp., Jl. Ancol No. 4-5, Ancol Barat Jakarta Utara 14430 Indonesia. Phone: 690-1365.

3510. Matsuo, Masako. 1990. Okara tenpe no seishitsu ni oyobosu komenuka no eikyô [Effects of rice bran on properties of “okara tempe”]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 64(7):1237-39. July. [6 ref. Jap; eng]

• **Summary:** The addition of 10% rice bran to okara which is then fermented by *Rhizopus oligosporus* modifies the enzymatic activity, the vitamin content, and the physicochemical properties of the resulting product. The emulsifying capacity and the taste of the fermented product are improved. The addition of rice bran also improves the nutritive value of okara tempeh.

Okara tempeh has a texture that is harder and less elastic than that of white bread. The capacity for water retention and the absorbability of oil, and the emulsifying properties are greater than those of wheat flour. The antioxidant activity is equivalent to that of soybean miso. Address: Lab. of Chemistry, Faculty of General Education, Gifu Women’s Univ., Taromaru, Gifu 501-25, Japan.

3511. Matsuo, Masako. 1990. Okara tenpe [Suitability of “okara tempe” as a foodstuff]. *Nippon Nogeikagaku Kaishi*

(*J. of the Agricultural Chemical Society of Japan*)

64(7):1235-36. July. [2 ref. Jap; eng]

Address: Lab. of Chemistry, Faculty of General Education, Gifu Women’s Univ., Taromaru, Gifu 501-25, Japan.

3512. GEM Cultures. 1990. Catalog [Mail order]. 30301 Sherwood Rd., Fort Bragg, CA 95437. 9 p. Aug. [4 ref]

• **Summary:** This catalog celebrates the company’s tenth anniversary. Contents: 1. Powdered cultures for soycrafters: Powdered tempeh starter, PTS (11 gm [\$2.25, makes 5+ lb of tempeh], 35 gm, 500 gm, 1000 gm). Starter cultures for miso, amazake, shoyu, and tamari. Introductory koji kits. Commercial spore packets for miso or shoyu. Powdered natto starter. Rice koji (cultured rice) for light misos, amazake, pickles. Most in home or commercial sizes. 2. Cookbooks with culture (lists 4 books). 3. Natural salts for curdling tofu: Natural nigari or Terra Alba calcium sulfate in 1 lb or 5 lb bags. 3. Self renewing cultures: Fresh villi culture, fresh kefir curds, fresh sourdough culture, seed miso. 4. Sea vegetables from the Mendocino Sea Vegetable Co. 5. Handy reusable items: Super sealers (lids for canning), cheesecloth (grade 60), gauze drawstring bags (for spices in mulled cider, whole herbs, etc.). Address: Fort Bragg, California. Phone: 707-964-2922.

3513. Sand, Avraham. 1990. Pioneering soyfoods and natural foods in Israel (Interview). *SoyaScan Notes*. Sept. 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Avraham first went to Israel in 1975 and stayed for about a year. During this time he and Avraham Leider and one other person founded Israel’s first natural foods company, named Amud Ha Shachar (Pillar of Dawn) and located in Jerusalem. The first product they made was granola, followed by whole wheat flour, bulgur wheat, brown rice (which they packaged), and date bars. With this company established, a number of Americans and other westerners who had recently immigrated to Israel and were connected with the company approached the Sachnut, the Jewish government agency which helps finance Jewish cooperative settlements. They asked to be given a moshav. A moshav is like a kibbutz (a cooperative agrarian, rural settlement) except that the families have their own homes and land, and the children live at home. In 1976 the Sachnut gave the group a piece of land, infested with scorpions, upon which nine other groups had tried and failed since 1948 to establish a successful community. The Sachnut also financed a small natural foods factory and bakery on the moshav, complete with an oven and a packaging machine. The moshav was named Moshav Me’or Modi’im, located at Doar Na Hamercaz, in the Judean Hills between Jerusalem and Tel Aviv, Israel.

Avraham returned to North America for several years. While living in a community of 5-6 people in Nova Scotia,

Canada, he was introduced to tofu by people who made tofu for the community, but he did not make tofu there himself.

Between 1975 and 1990 Avraham has spent a total of 8 years in Israel. The rest of the time he was in the USA or Canada or travelling. Avraham returned to the moshav in 1978 and that year he established Israel's earliest known tofu shop as part of Pillar of Dawn. The tofu was made in the same bakery room as the granola, especially in the evenings when the granola wasn't being made. Originally the community scale shop was established solely to make tofu for the 25 or so families living on the Moshav. Tofu production was small, averaging 50 lb/day of tofu one day a week, using a Corona mill grinder powered by a washing machine motor. The tofu was curded using bittern (nigari) from a salt factory on the Dead Sea. The Moshav owned the tofu company collectively and financed it. Avraham was the motivating force that got the operation started with temporary help initially from Yaacov Sack and Moshe Reuben. About 3-6 months after tofu production began, they started to make tempeh. Then Ben Zion Solomon joined Avraham 6-12 months after the company started and they worked together like equal partners for several years as the tofu and tempeh makers. Solomon was also making quite a bit of miso on the moshav (with a little help from Sand). They also introduced soymilk. At some point, they began to sell their tofu and miso at a few health food stores in Jerusalem. As far as Avraham knows, his was the first company to make tofu, tempeh, miso, or soymilk in Israel. They developed a 1-page informational pamphlet, written in Hebrew on one side and English on the other, explaining what tofu was and how it was made, plus some recipes. At that time Israelis, other than recent immigrants from America, didn't know what tofu was.

They reached the point where they decided to buy large scale equipment (from Takai) and set up a real commercial shop on the moshav that could produce 500 to 1,000 lb/day of tofu. The Sachnut indicated that they would be willing to help set up this new business. So in about 1979 or 1980 Avraham traveled to the USA and did a lot of study to learn about tofu equipment, products, and processes in small to medium sized shops. He visited about 20 tofu shops nationwide (most were very open and helpful) and collected information in a notebook. He worked at the Soy Plant in Ann Arbor, Michigan, for approximately a year in about 1980. From time to time he shared information with his father, Ralph Sand, who was doing research on non-dairy cheese and tofu at Anderson Clayton at the time. At the last minute the Sachnut pulled out and decided not to finance the project, so the expansion never took place. They continued to make tofu on a small scale. But the moshav was suffering economically so in about 1981 Avraham and his wife, unable to make a living there, left and returned to the USA. The little soyfoods plant dissolved but shortly thereafter a commercial operation (probably Golden

Jerusalem Tofu) started in Jerusalem and the people on the moshav bought their tofu from Jerusalem.

During the time that Avraham made soyfoods in Israel (1978-81) there was a lot happening with soya. There was a man called the "Soya King" ("Hamelech Soya," probably Eliahu Navot) who was famous in Israel as the country's soybean pioneer. Avraham thinks he lived in Herzlia/Herzliyya, just north of Tel Aviv, but he died in about 1979 or 1980 several months before Avraham was able to meet him. Avraham went to his home town and met his widow, who told him a little about her husband's work with soya.

The most popular food use of soybeans in the late 1970s was in textured soy flour (like TVP). These products were made in Israel by 1 or 2 big companies and sold in supermarkets in very stylish packages indicating that the manufacturers were well established. There were several flavors and large amounts were sold. He does not know the name or address of the manufacturer, but he got the feeling that Eliahu Navot had at least helped inspire these products; he may have helped to develop them.

In America, Avraham set up a soy deli named Sand-Munches in Madison, Wisconsin. They bought tofu from Bountiful Bean in Madison and made and sold tofu sandwiches, nori rolls, tofu salad, tempeh salad, various tofu spreads. They sold to health food stores and had a sandwich cart on the campus.

Avraham was in on the soyfoods wave at the very beginning, but after it became more established and mainstream he felt that his work had been done in that area, so he moved into the field of aroma therapy, inhaling aromatic essential oils from herbs, where he has been working for the last 8-9 years. It is a very powerful form of herbal medicine. He has developed several product lines under the Tiferet brand (a term taken from the Tree of Life in the Cabala) which he markets in health food stores in the USA and overseas. Address: 210 Crest Dr., Eugene, Oregon 97405. Phone: 503-344-7019.

3514. Ornish, Dean. 1990. Dr. Dean Ornish's program for reversing heart disease: The only system scientifically proven to reverse heart disease without drugs or surgery. New York, NY: Random House. xxxi + 638 p. Sept. Index and recipe index. 17 cm. [288* ref]

• **Summary:** This is a landmark, pioneering book—indeed a classic. In addition to carefully documented information on how to reverse heart disease, it offers 100 pages of vegan recipes, including a 21-day menu. It focuses on a low-fat, low-cholesterol diet, regular moderate exercise, stopping smoking, stress management through meditation and yoga, and (ideally) a support group.

Contents: Author's note. Foreword. Introduction—Heart and soul. Part one: Opening your heart. Part two: The opening your heart program. Part three: Opening your heart recipes. Introduction to the recipes by Shirley Elizabeth

Brown, M.D., and Martha Rose Shulman. Twenty-one days of menus. The recipes. Epilogue. Appendix: Nutrient analysis of common foods. Selected references.

In the chapter titled "Introduction to the recipes" a long section on "Soybean products" gives basic information about the following: Whole soybeans, soy flour, soy milk ("It is much higher in fat, lower in vitamin B-12, and lower in calcium than nonfat cow's milk."), soy sauce, tamari, miso, soy cheeses, tempeh, textured vegetable protein (TVP), isolated soy protein, and tofu ("Tofu is a miracle food; it is very easy to digest, very high in protein, low in calories and fat, economical, and extremely versatile").

In the chapter titled "Recipes" is a long section on "Tofu Dishes," which begins with a good introduction: "Tofu is one of the most versatile foods." "Tofu is very high in protein and the perfect substitute for cheese and eggs." Eleven recipes follow: Tofu cheese with fresh herbs. Marinated tofu. Scrambled tofu and vegetables. Lydia's Mexican casserole. Tofu stew with miso. Sweet and sour wok-cooked vegetables with tofu. Chinese eggplant and tofu. Steamed fresh vegetables and tofu with soba noodles (and Misoyaki sauce). Stuffed manicotti (with Marinara sauce).

At the start of each chapter are great quotations. The 288 selected references, listed chapter by chapter at the back, are a valuable addition. As early as 1972 Dr. Ornish was learning meditation and yoga techniques from Swami Satchidananda; these evolved into the stress management program described in chapters 7-9. In 1975 he first became interested in conducting research on heart disease, when he was a medical student at Baylor College of Medicine in Houston, Texas. In 1977 he had the privilege of studying with Dr. Michael DeBakey, assisting in the operating room when he performed bypass surgery. Though his surgical skill was amazing, Ornish began to see the "limitations of technological approaches that literally and figuratively *bypassed* the underlying causes of the problem. It was the difference between temporizing and healing." Most bypass patients "would go home and continue to do the same things that led to the problem in the first place. They would smoke, eat a high-fat, high-cholesterol diet, manage stress poorly, and lead sedentary lives."

For details on this book and its significance, see MacNeil/Lehrer Newshour. 1990. Dec. Address: M.D., Preventive Medicine Research Inst., Sausalito, California 33658. Phone: 415-332-2525.

3515. **Product Name:** Aduki Rice Miso. Renamed Azuki Rice Miso in 1992.

Manufacturer's Name: South River Miso Co. Inc.

Manufacturer's Address: South River Farm, Conway, MA 01341. Phone: 413-369-4057.

Date of Introduction: 1990. October.

Ingredients: Deep well water, organically grown brown rice and aduki beans, sun-dried sea salt, koji culture.

Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.

Wt/Vol., Packaging, Price: 1 lb plastic tub.

How Stored: Refrigerated.

New Product-Documentation: Talk with then Label sent by Christian Elwell. 1992. March 13. He started selling this miso in Oct. 1990. Label. 3.5 by 2 inches. Black on white. Self adhesive. "100% organic ingredients. Unpasteurized. Please refrigerate." On the plastic tub is beige, with black and brown printing. A blue, brown, black, and white sticker (1 inch square) on one side says "Aduki Rice. Vintage 11/91." There is a statement about traditional miso making signed by Christian and Gaella Elwell, a recipe for everyday miso soup, and an illustration of a silhouette of a mother handing a bowl of soup to her son seated across the table. This miso contains no soybeans.

Soyfoods Center taste test. 1992. March 18. Delicious. Has a little sweet taste like finger-lickin' miso, and a non-pasteurized homemade miso flavor.

3516. Jack, Alex. 1990. Soviets embrace macrobiotics: Special report from Moscow and Leningrad. *One Peaceful World (Becket, Massachusetts)* No. 6. p. 1, 7-10. Autumn/Winter.

• **Summary:** Physicians in the USSR are using miso to try to cure radiation sickness from the Chernobyl nuclear disaster which took place on 26 April 1986 in the Ukrainian SSR.

A sidebar on page 7 titled "Miso protects against nuclear radiation" states: "Scientists in Hiroshima reported this summer that in laboratory tests mice fed miso every day were five times more resistant to radiation than those not eating miso. The research, carried out by Prof. Watanabe at Hiroshima University, is the latest data showing that macrobiotic foods can bind and eliminate radioactive material from the body." A photo shows Cary Wolf offering miso soup to people in Moscow. Address: Box 10, Becket, Massachusetts 01223. Phone: (413) 623-5742.

3517. Kudou, Shigemitsu; Tsuizaki, I.; Shimoyamada, M.; Uchida, T.; Okubo, K. 1990. Screening for microorganisms producing soybean saponin hydrolase. *Agricultural and Biological Chemistry* 54(11):3035-37. Nov. [16 ref]

• **Summary:** Soybean saponins in miso and soy sauce are decomposed during fermentation by various species of *Aspergillus* mold. Address: 1&4. Kanesa Miso Co., Ltd., 202 Hamada, Tamagawa, Aomori 030; 2,3&5. Faculty of Agriculture, Tohoku Univ., 1-1 Tsutsumitori, Amamiyama-machi, Aoba-ku, Sendai 981. All: Japan.

3518. **Product Name:** Legume Hearty Vegetarian Stew (Made with Wheat Gluten).

Manufacturer's Name: Legume, Inc.

Manufacturer's Address: 116 Fairfield Rd., Fairfield, NJ 07006. Phone: 201-263-1013.

Date of Introduction: 1990. November.

Ingredients: Potatoes, wheat gluten [whole wheat flour, water, tamari soy sauce (water, soybeans, sea salt)], carrots, tomato paste, peas, water, sweet potato puree, canola oil, celery, parsley, onions, garlic, molasses, miso (soybeans, water, sea salt), tamari soy sauce (water, soybeans, sea salt), natural flavors, vinegar, oregano, spices, sea salt.

Wt/Vol., Packaging, Price: 10 oz plastic bag (boil-in-the bag).

How Stored: Frozen.

New Product–Documentation: Talk with Gary Barat.

1990. Oct. 31. This weekend at the Natural Foods Merchandiser show in Philadelphia, Legume will introducing 7 new boil-in-the-bag products. The Hearty Vegetarian Stew (made with wheat gluten) is delicious. The gluten manufacturer is Tabachnik in New Jersey.

Label sent by Gary Barat. 1990. Oct. 31. by 5.5 by 1.5 inches. Paperboard box. Green, white, and black. Full-color photo of the product in a white dish. "Low fat. No cholesterol. Microwaveable. All natural. Legume main courses."

3519. [Japanese in South America: Nishii Super Shoyu in Peru]. 1990. Television broadcast. Channel 26. California. Nov. 24. 7:00–7:30 P.M. 3 minutes. From Fuji TV channel 8, "Naruhodo da World," in Japan. [Jap]

• **Summary:** Nishii Shoyu, located in the Victoria district of Lima, Peru, is owned by Mr. Shinji Kawakami, age 75, the second-generation owner. The outside and inside of his shop, and the process by which he makes 5 tonnes/week of shoyu in the traditional hand-made way, are shown. He also makes miso. A close-up shows the 750 ml bottle and its colorful label, orange, blue, and green on yellow. One bottle costs the equivalent of about 300 yen. Address: Japan.

3520. Cederquist, Natalie; Levin, James. 1990. A vegetarians ecstasy: A healthy gourmet celebration of over 250 no cholesterol, no dairy, lowfat recipes devoted to long life and good taste. Glo, Inc., 2406 Fifth Ave., San Diego, CA 92101. 332 p. Dec. Illust. by Natalie Cederquist. Index. 28 cm. [13 ref]

• **Summary:** In this is innovative vegan cookbook, each recipe occupies 1 page and is accompanied by an illustration (line drawing). The glossary of ingredients mentions liquid aminos, miso, seitan, seaweeds, tamari, tempeh, and tofu. Page 28 is devoted to singing the praises of soy products. "Dairyless and eggless: With optimum health in mind, I have chosen to use soy products and egg replacer rather than dairy and eggs. Dairy is mucus forming, it contains cholesterol, fat and hormones, in addition to the pesticides and antibiotics used in the farming and dairy industry.

"Soy and seed cheeses, soy yogurts, soy cream cheese, soy sour cream, soy and rice based ice creams are delicious non-dairy products in the natural markets for you to try which are cholesterol free and low in fat."

The book contains 28 recipes for tofu, and 12 for tempeh. Other interesting recipes are: Sprouted soy salad (with 3 cups soy sprouts steamed for 3 minutes, p. 76). Orange miso dressing (p. 99). Miso soup (p. 162). Miso sesame rice (p. 206). Aduki bean and brown rice pot (p. 212). Féjoada (with soy sausages, p. 213). Mushroom seitan in wine sauce with wild rice (p. 241). Seitan sauté (p. 267). Amazake carob pudding (p. 290). Address: 2. M.D., San Diego, California. Phone: 1-800-854-2587.

3521. **Product Name:** Mellow White Miso, Brown Rice (Genmai) Miso, and Natto Miso (renamed Kickapoo Chutney in April 1995).

Manufacturer's Name: Traditional Foods Cooperative. Renamed Earth Fire Products Co. in Feb. 1994.

Manufacturer's Address: P.O. Box 92 (Corner of Grove and North Railroad Streets), Gays Mills, WI 54631. Phone: 608-735-4711.

Date of Introduction: 1990. December.

New Product–Documentation: Talk with Liz Coleman of Traditional Foods. 1991. Nov. 25. This company was started as a home business by Bob Mandel and Cindy Wiar. They now make 3 varieties of miso and seitan. Liz is the miso maker. The company is now located at P.O. Box 92 (Corner of Grove and North Railroad Streets), Gays Mills, WI 54631. Phone: 608-735-4711.

Talk with Mary Ruth of Traditional Foods. 1991. Nov. 25. Traditional Foods was started in about 1987 by Bob Mandel and Cindy Wiar. In April 1989 Traditional Foods was formally incorporated into a cooperative (a legal form of corporation in Wisconsin) with the same name, and was moved out of the home into a commercial bakery—purchased in the Aug. 1989. New people joined the group and new money was raised. Bob and Cindy became members of the cooperative (nothing was sold). In the fall of 1989 they started to make miso, beginning with a short-term (4-5 week) miso named mellow miso; it was ready for sale in late 1989. Then came a long-term brown rice (*genmai*) miso (ready last winter) and a natto miso [finger lickin' miso]—now made by Liz Coleman.

Traditional Foods now sells about 180-200 lb/month of miso. Mellow white is the best seller of the three types, but brown rice miso comes on strong in the cold months. The company sells about 35-40 lb/week of natto miso.

It is a struggle to make the business succeed. North Farm Cooperative is the major distributor for their little cop in Gays Mills, which is located several hours from Madison, Wisconsin, the headquarters of North Farm. All members of Traditional Foods are members of the local cop, which is a member of North Farm cooperative system.

Traditional Foods also buys some its raw materials from North Farm. The cooperative recently got a grant from the Presbyterian Church designed to help people in economically depressed areas to become more self-sufficient. They are using the money to buy new, larger equipment and to improve their food processing plant.

Talk with Bob Mandel. 1992. Jan. 11. He and his founding partner, Cindy, developed the natto miso—which is the first natto miso or Finger Lickin’ Miso made in the Western world. He wanted a new product so his new company could compete with established miso makers and importers. Initially he wrote William Shurtleff at Soyfoods Center to try to get a recipe for natto miso, but Shurtleff did not have one. Bob had eaten natto miso imported from Japan, so he began to experiment to try to get a similar flavor. Surprisingly soon he made a good product entirely from organic ingredients (the kombu comes from the Maine coast). It was first sold in about Feb. 1990 after they moved the business out of their home. This natto miso is made using a 3-step fermentation as follows. First make barley koji using whole, dehulled (but not pearled) barley. Then add an equal amount of soybeans, plus salt and water as if to start a mellow barley miso. Incubate at 80°F in a fairly large koji incubator for about 1 week, then take out unfinished mellow barley miso, and mix in chopped soaked kombu and gingerroot (run the kombu then the ginger through a sausage maker, with relatively large holes and a cutter blade behind it, attached to their Hobart; the resulting pellets are about 1/10th inch across). Put the mixture back in the incubator and let it ferment for another 4 weeks or so. Finally remove the mixture from the incubator, mix in sorghum molasses (made from crushed grain sorghum stalks), and package immediately in 1-lb plastic deli tubs or in bulk. The product is sold and should be stored refrigerated. The process is labor-intensive and the final product, made in batches of 35–40 pounds, wholesales for \$2.85/lb and retails for about \$3.75/lb or more.

Bob thinks the product has real potential in America. He often serves it in a spread with tahini or almond butter on a rice cake or a cracker, or just straight on a popsicle stick. He has found that many people who would not ordinarily eat miso like natto miso because of its distinctive flavor, natural sweetness, and lower salt content. Bob is not a part of the business any more but he still works at the co-op making koji for miso, and training another person to take it over from him. When he finishes this training, he and Cindy hope to continue their work with food.

Concerning the founding of the company: In the fall of 1986 he and Cindy started to make and sell tofu, seitan, and tempeh from their home in Gays Mills. The business name has always been Traditional Foods. In Dec. 1988 there was meeting called to establish a co-op. In April 1989 they incorporated as a co-operative. In Aug. 1989 they purchased a commercial bakery. The original plan was to start making

tempeh (to get initial cash flow) in the new building, and to develop a line of miso products. The first misos that were later sold started to be made in the fall of 1989. But the person who was supposed to make the tempeh was never able to—so they found themselves in a bind. Therefore in about Feb. 1990 they started to make seitan again. Real sales of the mellow miso and natto began in early 1990. The brown rice miso was not ready until the fall of 1990. To get things started, Traditional Foods sold their products to the co-ops in Madison. The co-ops asked North Farm Co-op (a natural foods wholesaler and distributor) to start distributing Traditional Foods products; North Farm became Traditional Foods’ first distributor in Feb. 1990—distributing to co-ops, other retail stores, and buying clubs. Soon Blooming Prairie was also distributing Traditional Foods’ products, especially west of the Mississippi to buying clubs. In Feb. 1990. Today the company makes seitan (packaged and in bulk) and 3 types of miso.

Talk with Cindy Wiar, founder of Traditional Foods. 1992. Jan. 12. She was unable to get large distributors like Great Eastern Sun and Mountain Ark to carry their natto miso because if that caused a drop in sales of their product imported from Mitoku in Japan, that could lead to a reduction in the volume discounts the distributors got from Mitoku. That was very frustrating to her—even though she could understand the distributors’ position. So they tried to find distributors who were not importing natto miso, and tried to educate consumers to demand the product from their retail stores. After Bob leaves the co-op, Cindy plans to get a straight job to earn money to pay for the house they are now renting. They will also do some market gardening. Eventually they want to start a non-coop traditional miso shop.

Talk with Bob Ribbens, owner of Earth Fire Products Co. (formerly Traditional Foods Cooperative). 1995. Nov. 1. The Brown Rice Miso (that is the product name on the label) was probably first available for sale in 1991, though it could have been late 1990. The natto miso was renamed Kickapoo Chutney in April 1995. Note: Kickapoo is the name of a river and a Native American tribe in southern Wisconsin. Various people outside the company criticized the company for using the word “natto” with a product that was not natto.

3522. Engel, G. 1990. Vergleich von Quark mit Sojaprodukten: Herstellung, Mikroflora, Zusammensetzung, Sensorik [Comparison of quark with soy products: Production, microflora, composition, and organoleptic properties]. *Deutsche Milchwirtschaft* 41(38):1272-75. 7 tables. Also published in *Kieler Milchtage*, 1990. [24 ref. Ger]*

• **Summary:** Compares the quality and nutritive value of cow’s milk and soymilk, and discusses criteria for evaluating the chemical, microbiological, and organoleptic

quality of tofu, okara, miso, tempeh, sufu, and other soyfoods. Address: Bundesanstalt Milchforschung, Inst. Mikrobiologie, Kiel, Germany.

3523. Horii, Masaharu; Ide, T.; Kawashima, K.; Yamamoto, T. 1990. Hypocholesterolemic activity of desalted miso in rats fed an atherogenic diet. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)* 37(2):148-53. [19 ref. Eng; jap]

• **Summary:** "Effect of dietary miso on the cholesterol metabolism was examined in rats fed the diet containing 0.5% cholesterol and 0.15% sodium cholate. The inclusion of 20% desalted miso to the atherogenic diet significantly decreased the concentration of serum cholesterol hepatic lipid concentrations at the time of sacrifice (30 days) were in no way affected by dietary miso. The ingestion of the miso preparation doubled the fecal excretion of acidic steroids, while it increased only slightly that of neutral steroids. The dietary miso appeared to exert the potent hypocholesterolemic activity primarily through the enhancement of the catabolism of cholesterol to bile acids in rats fed an atherogenic diet." Address: 1-2. National Food Research Inst., Ministry of Agriculture, Forestry and Fisheries, 2-1-2 Kannondai, Tsukuba, Ibaraki 305, Japan; 3. Food R&D Center, Japan Tobacco Inc., 6-2, Umegaoka, Midori-ku, Yokohama, Kanagawa 227, Japan; 4. Aomori Field Crops and Horticultural Experiment Station, Rokunohe, Kamikita-gun, Aomori 033, Japan.

3524. **Product Name:** [Nagatani-En Misogura Instant Miso Soup {Fresh Miso Type} (Spinach, or White Miso with Wakame)].

Foreign Name: Nagatani-En Misogura {Nama-miso taipu} (Hôrenso, Shiromiso).

Manufacturer's Name: Nagatani En.

Manufacturer's Address: Nishi-shinbashi 2-36-1, Minato-ku, Tokyo, Japan.

Date of Introduction: 1990.

Ingredients: Spinach: Packet #1: Fresh seasoned miso [chômi miso] (soybeans, rice, salt, alcohol), kombu extract, alcohol. Packet #2. Natural seasoning powder (monosodium glutamate, bonito powder, etc.), dried spinach, dried [frozen] soybean curd, dried wakame seaweed, dried wheat gluten.

Wt/Vol., Packaging, Price: 2.43 oz: Three 69-gram pairs of packets (3 servings) in a large foil pouch. Retail for \$2.25 (1/91, California).

How Stored: Shelf stable.

New Product-Documentation: Product with Label purchased at Diablo Foods, Walnut Creek, California. 1991. Jan. 17. 6 by 8.25 inches. Black, brown, red, blue, and white on light blue. Color photo of a wooden bowl of miso soup on front panel. Color illustration of a traditional Japanese treasure house and a nearby house with overhanging

wooden eaves. To prepare, place the contents of each of a pair of foil packets in a soup bowl, add 1¼ cup boiling water, mix well, cover with a lid, and allow to stand for 3-4 minutes. Nagatani-En is an old and very famous Japanese company. Their main business has always been making ochazuke mix.

Soyfoods Center product evaluation. Very nice flavor for an instant miso soup; lots of wakame. Excellent package design. But certain ingredients on the Japanese label are not listed on the English label (e.g. bonito flakes).

3525. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society of Food Science and Technology)*. 1990. Miso. 37:203-13. [Eng; jap]*

3526. **Product Name:** [Sobo fix Soya & Three-Grain Soup].

Foreign Name: Sobo fix Soja-Dreikorn-Suppe.

Manufacturer's Name: Sobo Naturkost.

Manufacturer's Address: Goltsteinstr. 43a, D-5000 Cologne 51, West Germany.

Date of Introduction: 1990.

Ingredients: Spelt (Dinkel; German wheat)*, soy flakes*, rye*, wheat*, yeast extract, sea salt, miso, onions*, parsley roots (Petersilienwurzeln)*, parsnips*, carrots*, celery*, herbs.* * = Organically grown.

Wt/Vol., Packaging, Price: 0.75 liters.

How Stored: Shelf stable.

New Product-Documentation: Label sent by Anthony Marrese. 1990. Dec. 12. 5 by 5.75 by 1 inch. Brown, orange, blue, and red on pastel green and white. Dry mix in a cellophane bag inside a paperboard box. "Can be prepared quickly. Makes three bowls of soup." Logo is a little bean with a smiling face, arms, and legs.

3527. **Product Name:** [Sobo fix Soya & Three-Grain Souffle].

Foreign Name: Sobo fix Soja-Dreikorn-Auflauf.

Manufacturer's Name: Sobo Naturkost.

Manufacturer's Address: Goltsteinstr. 43a, D-5000 Cologne 51, West Germany.

Date of Introduction: 1990.

Ingredients: Spelt (Dinkel; German wheat)*, rye*, soy flakes*, wheat*, potato starch, carrots*, yeast extract, sea salt, miso, celery*, corn*, parsley roots (Petersilienwurzeln)*, herbs*, spices. * = Organically grown.

Wt/Vol., Packaging, Price: 150 gm. Makes 2.

How Stored: Shelf stable.

New Product-Documentation: Label sent by Anthony Marrese. 1990. Dec. 12. 5 by 5.75 by 1 inch. Brown, orange, pink, and white on pastel blue and yellow. Dry mix in a cellophane bag inside a paperboard box. "Can be

prepared quickly. Makes 203 portions.” Logo is a little bean with a smiling face, arms, and legs.

3528. Product Name: [Viana Miso-Cucumber Spread].

Foreign Name: Viana Miso-Kuerbis Pastete.

Manufacturer’s Name: Viana Naturkost GmbH.

Manufacturer’s Address: Schmittenstr. 106, D-5030 Huerth 6, West Germany. Phone: (02233) 41323.

Date of Introduction: 1990.

Ingredients: Cucumber*, miso*, celery*, onions*, sesame seeds*, vegetable oil*, spices*, sea salt. * = Organically grown.

Wt/Vol., Packaging, Price: 200 gm.

New Product–Documentation: Talk with Bernd Drosihn, founder of Viana. 1990. April 7. His company is now making 2 short-term misos, plus a miso spread. He started to sell these 6 weeks ago and they are selling well.

Label sent by Bernd Drosihn. 1990. April 8. 4.75 by 1.5 inches. Self adhesive. Reddish-purple, black, brownish gold, and light purple. “A spicy spread for bread.”

3529. Product Name: [Viana Soy & Rice Miso].

Foreign Name: Viana Soya-Reis Miso.

Manufacturer’s Name: Viana Naturkost GmbH.

Manufacturer’s Address: Schmittenstr. 106, D-5030 Huerth 6, West Germany. Phone: (02233) 41323.

Date of Introduction: 1990.

Ingredients: Soybeans*, rice*, koji. * = Organically grown.

How Stored: Refrigerated.

New Product–Documentation: Talk with Bernd Drosihn, founder of Viana. 1990. April 7. His company is now making 2 short-term misos, plus a miso spread. He started to sell these 6 weeks ago and they are selling well.

Label sent by Bernd Drosihn. 1990. April 8. 3.5 by 3 inches. Self adhesive. Reddish-purple, black, brownish gold, and pea green. Dot matrix printed.

3530. Product Name: Westbrae Natural Ramen Express (Instant Steamed Ramen Noodles in a Cup) [Oriental Vegetable, Golden Chinese Style, Savory Szechuan Style].

Manufacturer’s Name: Westbrae Natural Foods (Product Developer-Distributor).

Manufacturer’s Address: 5701 South Eastern Ave. Suite 330, Commerce, CA 90040. Phone: 213-722-9817.

Date of Introduction: 1990.

Ingredients: Oriental Vegetable: Noodle pasta: Whole wheat flour, sifted wheat flour (sufficient for processing), sea salt. Seasoning packet: Natural flavors, miso* (soybeans, rice, salt), soy sauce powder (soybeans, wheat, salt), corn*, green beans*, peas*, onions*, carrots*, garlic*, spices, xanthan gum (vegetable gum), parsley*. * = Dried.

Wt/Vol., Packaging, Price: 1.1 oz (31 gm) paper cup with peel-off paper lid. Retail for \$1.29 at Open Sesame (2/91,

Lafayette, California).

How Stored: Shelf stable.

Nutrition: 1.1 oz (10 fl. oz as prepared): Calories 120, protein 4 gm, carbohydrate 22 gm, fat 1 gm, % calories from fat 7, cholesterol 0 mg, sodium 745 mg, potassium 165 mg, dietary fiber 1.5 gm.

New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 1991. Feb. 16. 3.5 inch diameter at mouth by 3 inches high. Paper cup. Red, black, green, and gold on white. On lid: “Westbrae Natural meals in minutes.” On side: “Low fat. No cholesterol. Recyclable. No hydrolyzed vegetable protein. Directions: 1. Fold lid back halfway. Empty seasoning packet into cup. 2. Add boiling water to ½ inch from top, stir well and re-cover with lid. Let stand 3-5 minutes. 3. Remove lid, stir and enjoy! Microwave: Boil water in separate container, then follow directions above. Savory broth with real ramen noodles, gently steamed, not fried, so there’s only 1 gram of fat. Enjoy a delicious satisfying meal in minutes!” Soyfoods Center product evaluation. Taste: very nice. The miso enriches the flavor of the broth. We like the environmentally friendly paper cup much better than the typical Styrofoam cup, and the paper seasoning packet better than its common foil counterpart. The package design is so-so. A counterpart product sold in supermarkets retails for about \$0.89 for 2.5 oz (with \$0.25 discount coupon) or \$0.356/oz. The Westbrae product sells for \$1.17/oz. or 3.3 times as much.

3531. Product Name: Westbrae Natural Fresh Miso (Instant Soup) [Mushroom, Snow Pea & Ginger, Green Bean & Sesame].

Manufacturer’s Name: Westbrae Natural Foods (Product Developer-Distributor).

Manufacturer’s Address: 5701 South Eastern Ave. Suite 330, Commerce, CA 90040. Phone: 213-722-9817.

Date of Introduction: 1990.

Ingredients: Mushroom: Noodle pasta: Whole wheat flour. Miso packet: Miso (soybeans, brown rice, water, sea salt), mushroom soup stock (shoyu, mirin, shiitake mushrooms, kombu), barley malt, spices, onion*, xanthan gum (vegetable gum). Spice packet: Honey powder, soy sauce powder (soybeans, wheat, salt), garlic*, natural flavor, onion*, mushrooms*, green onion*, spice. * = Dried.

Wt/Vol., Packaging, Price: 0.9 oz (25 gm) paper cup with peel-off paper lid. Retail for \$2.39 at Open Sesame (2/91, Lafayette, California).

How Stored: Shelf stable.

Nutrition: 0.9 oz (10 fl. oz as prepared): Calories 80, protein 3 gm, carbohydrate 14 gm, fat 1 gm, % calories from fat 11, cholesterol 0 mg, sodium 730 mg, potassium 125 mg, dietary fiber 2 gm.

New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 1991.

Feb. 16. 3.5 inch diameter at mouth by 3 inches high. Paper cup. Mushroom: Reddish brown, orange, blue, and yellow on white. On lid: "Westbrae Natural meals in minutes." On side: "Low fat. No cholesterol. Recyclable. Directions: 1. Fold lid back halfway. Empty fresh miso packet and spice packet into cup. 2. Add boiling water to ½ inch from top, stir well and re-cover with lid. Let stand 3-5 minutes. 3. Remove lid, stir and enjoy! Microwave: Boil water in separate container, then follow directions above. Delicious fresh miso soup, ready in minutes. Made with brown rice miso, fresh not dehydrated, for a deep, rich flavor. Delicately seasoned, with a sprinkling of tender noodles. A light, nutritious on-the-go soup."

3532. **Product Name:** Westbrae Natural Noodles Anytime! (Instant Soup) [French Onion, Country Style, Garden Tomato].

Manufacturer's Name: Westbrae Natural Foods (Product Developer-Distributor).

Manufacturer's Address: 5701 South Eastern Ave. Suite 330, Commerce, CA 90040. Phone: 213-722-9817.

Date of Introduction: 1990.

Ingredients: French Onion: Noodle pasta: Whole wheat flour. Seasoning packet: Onion*, honey powder, natural flavors, salt, Parmesan cheese (part-skim milk, cheese culture, salt, enzymes), garlic*, whey*, miso (soybeans, rice, salt), buttermilk*, spices, parsley*, xanthan gum (vegetable gum). * = Dried.

Wt/Vol., Packaging, Price: 1.4 oz (39 gm) paper cup with peel-off paper lid. Retail for \$1.29 at Open Sesame (2/91, Lafayette, California).

How Stored: Shelf stable.

Nutrition: 1.4 oz (10 fl. oz as prepared): Calories 140, protein 5 gm, carbohydrate 26 gm, fat 1 gm, % calories from fat 8, cholesterol 0 mg, sodium 800 mg, potassium 240 mg, dietary fiber 3.5 gm.

New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 1991. Feb. 16. 3.5 inch diameter at mouth by 3 inches high. Paper cup. French onion: Blue, red, green, and yellow on white. On lid: "Westbrae Natural meals in minutes." On side: "Low fat. Whole grain noodles. No cholesterol. Recyclable. Directions: 1. Fold lid back halfway. Empty seasoning packet into cup. 2. Add boiling water to ½ inch from top, stir well and re-cover with lid. Let stand 3-5 minutes. 3. Remove lid, stir and enjoy! Microwave: Boil water in separate container, then follow directions above. Tender, satisfying whole grain noodles in a tasty all natural broth. Just 1 gram of fat. No cholesterol. A quick nutritious meal... anytime!"

3533. Facciola, Stephen. 1990. *Cornucopia: A source book of edible plants*. Vista, California: Kampong Publications. ix + 678 p. Indexes (six!). 28 cm. [522* ref]

• **Summary:** "In your hands is one of the most remarkable efforts to come out of the struggle to preserve the genetic diversity of our planet... Steve Facciola has put together an easy-to-understand, easy-to-use compendium of the diversity of food plants available to consumer, gardener and scientist" (from the Preface). The largest and most comprehensive work of its kind, this book gives details on 3,000 edible plant species and 7,000 varieties.

Contents: Preface, by Noel Vietmeyer. Introduction. Acknowledgements. Botanical listings: Alphabetical listings of plant families (*Glycine max* and *Glycine tabacina* are listed in the family Fabaceae, pronounced fuh-BAY-see), fungi families, algae families, bacteria families. Cultivar listings (by common name for the most important and popular crops, e.g., shiitake, soybean, spinach, sprouting seeds). Sources (names, addresses and phone numbers of firms that sell seeds, plants, etc.: Domestic commercial, domestic non-commercial, overseas commercial, overseas non-commercial). Bibliography. Indices and appendixes: Index of principal vernacular names. Index of vernacular and other names occurring elsewhere in the text. Index of usage and edible parts. Index of species native to or naturalized in North America. Index of species not listed in Kunkel [Gunther Kunkel. 1984. *Plants for human consumption*. Koeltz Scientific Books, Germany]. Index of families and genera. Appendix A: Abbreviations used—For type of product offered, for annotated bibliographical citations, in descriptions for sources. Appendix B: Endnotes used in the cultivar listings.

As of Aug. 1994 an electronic version of this book is now available. It runs on Microsoft Windows and uses more than 25,000 hypertext links to cross reference information.

The main information on soybeans is found on pages 91 (Botanical listings for *Glycine max* and *Glycine tabacina*), p. 219 (*Aspergillus oryzae* culture), p. 221 (*Actinomucor elegans* culture for fermented tofu or sufu, and *Rhizopus* cultures for tempeh), p. 224 (*Bacillus subtilis* culture for natto), p. 482-83 (for "field soybeans," lists 5 black-skinned cultivars, and 7 yellow-skinned cultivars; plus 11 "vegetable soybeans"—Agate, Butterbeans, Envy, Extra Early, Fiskeby V, Hahto, Hakucho Early, Kanrich, Okuhara Early Green, Prize, and White Lion), p. 485-87 (sprouting seeds including soybean sprouts with directions for sprouting), and p. 500 (Soyfood cultures).

Additional information on food uses of soybeans is found throughout the book. Tofu: p. 9 (In Indonesia, a salt derived from the fruit of *Rhus javanica* (*Nurude*, *Mu-yen*) is used to coagulate tofu), p. 61 (In Japan the seeds of *Cannabis sativa*, called *asanomi*, are used in deep-fried tofu burgers (*ganmodoki*)), p. 76 (A vegetable curd similar to soybean tofu can be made from the seeds of the bottle gourd or calabash (*Lagenaria siceraria*)), p. 92 (The seeds of the Bonavista bean or hyacinth bean (*Lablab purpureus*) can be prepared as tofu), p. 127 (The seeds of okra, gumbo, or

lady's finger (*Abelmoschus esculentus*) can be made into tofu or tempeh). Kecap (Indonesian soy sauce): p. 9 (In Indonesia, the plant tuberose (*Polianthes tuberosa*) is added to the substrate in making kecap), p. 191 (In Indonesia, fresh leaves of kaffir lime, also called ichang lime, makrut, or djeruk purut (*Citrus hystrix*) are used to flavor kecap). Miso: The following can be used as a substrate for miso—p. 88 (Peanuts), p. 94 (seeds of the velvet bean, also called cowitch, cowhage, benguk (*Mucuna pruriens*)), p. 155 (barley (*Hordeum vulgare*)), p. 156 (proso millet (*Panicum miliaceum*)). Address: 1870 Sunrise Dr., Vista, California 92084. Phone: (619) 726-0990.

3534. Finnegan, John; Cituk, Kathy. 1990. Amazake rice beverage. Celestial Arts, P.O. Box 7327, Berkeley, CA 94707. 80 p. No index. 21 cm. [80 ref]

• **Summary:** Contents: History and development. Making amazake. Complementary foods, spices and herbs. Why use amazake? Rice. Koji. Almond amazake. Nutritional analysis. Makers of amazake. Amazake kefir-yogurt. Amazake as a baby food (with Bifidus and *Streptococcus faecium*). Milk substitutes. The future of amazake. Recipes (29 recipes, including variations). About the ingredients (incl. miso) Appendixes: I. About aseptic packaging. II. Sources of amazake and koji. Bibliography. Glossary.

Note: This book contains extensive information from the book *Amazake and Amazake Frozen Desserts: Industry and Market in North America*, by Shurtleff and Aoyagi (Soyfoods Center, 1988), used without acknowledgment or permission. Except for the chapters on "Recipes," and "Amazake as a baby food," it contains almost no new research or information.

Talk with Benjamin Hills. 1991. Sept. 18. This book reads like an advertisement for amazake. Grainaissance was originally thinking of hiring John Finnegan to write a book on amazake, but they decided to withdraw from the deal, so he went ahead and did it on his own.

Talk with Celestial Arts. 1991. Sept. 27. John Finnegan used to be the head of Elysian Arts, 20 Sunnyside Ave. Suite A161, Mill Valley, CA 94941. He now resides in Santa Monica, California. The book has sold about 800 copies to date.

Note: This is the earliest English-language document seen that uses the term "rice beverage" to refer to amazake and related products. Address: Santa Monica, California. Phone: 415-389-8925.

3535. Heiser, Charles B., Jr. 1990. Seed to civilization: The story of food. New ed. Cambridge, Massachusetts: Harvard University Press. vi + 228 p. Illust. Index. 24 cm. [83* ref]

• **Summary:** An outstanding work, written for the general reader. "This is a classic book about the origins of agriculture and the influence of its discovery on the

development of civilization"—Ghilleen T. Prance, Director of the Royal Botanic Gardens [England; on rear cover].

The Preface notes that this is a book about the plants (and animals) that stand between humans and starvation. The main subjects are ethnobiology, the study of plants and animals in relation to humans, and ecology, the study of organisms in relation to their environment. We humans "get all of our carbohydrates and nearly three-fourths of our protein from plant sources. Moreover, nearly all of the food we get from animals is in turn derived from plants. After all, life depends on photosynthesis; chlorophyll has been referred to as the green blood of the earth."

Table 5-1, "Estimated production of world's 32 major food crops" (p. 63) lists the top ten as (* = member of grass family; units in million metric tons): Sugar cane* 932. Wheat* 536. Corn* 481. Rice* 476. Potato 309. Sugar beet 286. Barley* 180. Manioc 137. Sweet potato 110. Soybean 95. Source: *FAO Production Yearbook*, 1986.

Chapter 7, "Legumes: The meat of the poor," contains a section on "Soybeans" (p. 129-33). It notes that there are no archaeological records of the soybean to help us determine when it was first cultivated, but it was mentioned in Chinese literature before 1000 B.C. Unlike most legumes, the beans are seldom eaten directly, but are used to make many different foods including bean sprouts, miso, tofu, soymilk (such as Vitasoy), tempeh, and soy sauce.

"The widespread cultivation and utilization of soybeans in the United States in the space of a few decades must be one of the most spectacular success stories in the recent history of agriculture."

Photos show: (1) A field of soybeans in the USA planted in rows, free of weeds. (2) Soybean plants ready for harvesting. (3) Soybean seeds. (4) A John Deere combine harvesting soybeans.

Note: Previous editions of this book were copyrighted in 1973 and 1981. Also discusses: Peanuts (p. 126-29). Potatoes and their remarkable history (p. 134-39). Tomatoes and their unusual history (p. 181, 206). Address: Distinguished Prof. Emeritus of Botany, Indiana Univ.

3536. Hesseltine, C.W. 1990. UJNR panel on toxic microorganisms. In: Albert E. Pohland, V.R. Dowell, Jr., and J.L. Richard, eds. 1990. *Microbial Toxins in Foods and Feeds: Cellular and Molecular Modes of Action*. New York: Plenum Press. xvii + 617 p. See p. 1-15. From a Symposium on Cellular and Molecular Mode of Action of Selected Microbial Toxins in Foods and Foods. Held 1988. Illust. 26 cm.

• **Summary:** The UJNR (United States–Japan Cooperative Program on Natural Resources) was established in May 1964. There were 7 original panels, one of which was Toxic Microorganisms. The initial emphasis was on botulism, soon followed by aflatoxins. The Panel consisted of 7 Japanese and 7 Americans; they comprised a mix a people

who were experts on fungal mycotoxins and bacterial toxins. The Panel conducted many activities including joint panel meetings and study tours, exchange of mutual interest items, publication of 6 books, symposia, development of regulations, and interaction with other societies.

The 1966 study tours in Japan were longer than usual because of the review of 4 projects supported by the USA involving the use of soybeans in foods. These 1966 tours included visits to the following Japanese organizations working with soybeans: (1) Universities: Nagoya Univ. (Mycotoxins and soybean fermentations), Tohoku Univ., Faculty of Agriculture (Miso fermentation), Kyoto Univ. (Fermented soybean foods), and Tokyo Univ. of Education (Soybean cheese). (2) Japanese government laboratories: Noda Institute of Research, Chiba (Shoyu fermentation), Institute for fermentation, Osaka (Culture collection and fermentation in General).

(3) Trade association laboratories (each in Tokyo): Japanese Tofu Assoc., Japanese Shoyu Institute, Central Miso Institute. (4) Companies: Sendai Miso Shoyu Co., Sendai (Miso production), Koji Sanzaemon Roho, Kyoto (Koji starter production), Takeda Chemical Industry, Osaka (Antibiotic & flavor fermentations), Kikkoman Shoyu Co., Chiba (Shoyu production).

Talk with Dr. Walter Wolf of Peoria, Illinois. 2000. Aug. 14. He was on the UJNR Protein Panel, which met for about 10-12 years, on alternating years in Japan and the USA. Thus he went to Japan 5-6 times—the last time being in about 1988. The purpose of the panel was exchange of information about protein. They met with their counterparts at the NFRI (National Food Research Institute, Tsukuba). At a typical meeting there would be formal presentations by members of both teams, followed by a field trip to numerous facilities. Address: NRRC, Peoria, Illinois.

3537. Moosewood Collective (The). 1990. Sundays at Moosewood Restaurant: Ethnic and regional recipes from the cooks at the legendary restaurant. New York, NY: Simon & Schuster. 734 p. Illust. Index. 24 cm. A Fireside Book. [55* ref]

• **Summary:** Since it opened in 1973 in Ithaca, New York, Moosewood Restaurant has become famous for its creative semi-vegetarian cuisine (fish are included on the menu and in this book) with a healthful emphasis. The restaurant is run by a group of 18 women and men, most of whom have worked together for nearly 10 years. Major decisions are made collectively. This is the Collective's second vegetarian cookbook. Each section, corresponding to the cuisine of 17 different geographical regions (e.g. Eastern Europe, Japan) and one ethnic group (Jewish) is written by a different member of the collective. The book contains many soy-related recipes: Tofu (20 recipes), tempeh (1), miso (1), soybeans (1), tamari roasted nuts (1), etc. The extensive "Guide to ingredients, techniques, and equipment" (p. 649-

87) describes: Beans (incl. soy), chick pea flour (besan flour), dashi, Hoisin sauce, miso, seitan, soy sauce (see tamari soy sauce), light soy sauce, tempeh, tofu, vegetable oil (incl. soy oil), Worcestershire sauce ("The formula remains a well-guarded secret, but we do know that the Lea and Perrins product contains molasses, anchovies or sardines, sugar, garlic, tamarind, soy sauce, vinegar and spices"). Address: Ithaca, New York.

3538. Morningstar, Amadea; Desai, Urmila. 1990. The ayurvedic cookbook: A personalized guide to good nutrition and health. Santa Fe, New Mexico: Lotus Press. 351 p. Foreword by Yogi Amrit Desai. Introduction by Dr. David Frawley. Illust. by Amadea Morningstar. Index. 23 cm. [40 ref]

• **Summary:** This is a lacto-ovo vegetarian cookbook based on Ayurvedic principles. Contents: Part I: General Information. History of Ayurveda. Nutrition from an Ayurvedic perspective. Discovering your constitution. Attributes and nutritional needs of each constitution. How to imbalance your constitution. Understanding Ayurvedic nutrition: Taste. Digestion. Food combining and preparation. Balancing *Agni*. The digestive organs. The *chakras* and dietary change. Eating with the seasons. Getting ready to cook. Planning balanced meals easily. Menus: *Tridoshic*, *Vata*, *Pitta*, *Kapha*. Part II: Recipes. Part III: Appendices. 1. Most frequently asked questions and answers. 2. Enlarged food guidelines for basic constitutional types (many soyfoods are included). 3. Some basic information about nutrients. 4. Glossary of English and Sanskrit terms. 5. Food name equivalents in Latin, Sanskrit, Hindi. 6. Bibliography. About the authors (autobiographical).

The three *Vatas* (tridosha, three doshas, constitutional or body types) are *Vata* (pure air, head/wisdom), *Pitta* (pure fire, action), and *Kapha* (pure water, love/heart). *Tridoshic* foods or herbs are suited to all 3 constitutions; these include ghee, basmati rice, and asparagus. Concerning soya: "Many *Vatas* handle certain well-spiced soy products well, like tofu or liquid soy milk. Some do not. Let your gut be your guide. Dairy is very calming to *Vata*, especially when it is warm" (p. 14).

"*Pittas* are often attracted to high-protein foods, and do seem to need a little more protein than other constitutions. Goat milk, cow milk, egg white souffles, tofu, tempeh, and the aforementioned cottage cheese are all effective in balancing *Pitta*. Most beans—with the exception of heating lentils—are excellent" (p. 16).

Anything which stimulates elimination tends to relieve *Kapha* (barley and beans being classic examples). *Aduki* beans are especially good, as are black turtle beans, though the latter are more difficult to digest. Soy beans and soy products are recommended less frequently. Over half of tofu's calories come from fat, surprisingly, while only 4% of

black beans' do. Still, soy products like soy milk tend to be less Kapha-enhancing than dairy products" (p. 19).

"Examples of oily food include ghee, vegetable oils, animal fats, soybeans, many vegetables and citrus. Dry foods include corn, buckwheat, rye, millet, most beans and dark leafy greens, to list a few. These latter foods will need moistening of some sort to be more easily digested by most people" (p. 28).

In the menu section, under each constitutional type (dosha, such as Vata), recommended menus are given by season for each meal. For example, soy-related foods included in Vata menus are: Summer: None. Fall: Dinner—Miso tofu, Amasake. Winter: None. Quick day: Breakfast—soymilk. Beverage—Amasake. Weekend day: Nothing. One the road (when travelling): Dinner' Chinese vegetables and rice (with tofu, if well tolerated).

Each recipe in the recipe section tells which constitution type it suits, how long it takes to prepare, in what seasons it is most healing, and how many it serves. For example,—Vata means that it calms Vata, + Vata means that it aggravates or increases Vata, and 0 Vata means that it is neutral for Vata. For brevity, we will give only Vata examples in the following. Soy-related recipes: About tofu (p. 102): Tofu and liquid soy milk tend to be cool and heavy, yet oilier than most other bean products. This oily lubricating quality helps their digestion, as does the pre-processing they have undergone as legumes... Eaten in excess, they will increase *Kapha*. Warming preparation, in the form of heat or warming spices such as ginger, tamari, cumin, turmeric, cinnamon or mustard seeds, aid their healthy breakdown in the system. Beans can be idiosyncratic in effect though; if your experience doesn't match the descriptions given here, trust your direct experience first. Some people have a hard time digesting tofu in almost any form; an allergy to soy may be present. It was popular in the sixties and seventies to serve tofu cold, cubed and plain at health food-type salad bars. This is about the most difficult way to try to consume an already chilling food. Try tofu marinated, spiced and cooked, then make up your mind about its digestibility for you."

Miso tofu (p. 102,—Vata). Tofu mushrooms (p. 104,—Vata). Tofu pesto (p. 104,—Vata). Sauteed tofu and vegetables (p. 105,—Vata, but mildly + Vata with frozen tofu). East Indian lima beans (with tofu, p. 114). Spicy rice and yogurt (with soy milk, p. 131,—Vata; "Made with soy milk, which is lighter and cooler than yogurt, it is suitable for Pitta and Kapha as well"). Vegetable barley soup (with tofu, p. 188, 0 Vata).

About oils (p. 202-03): "Ghee is the highly preferred fat in Ayurveda, being light, easy to digest and potentiating to many of the foods with which it is served." Sunflower oil is the next best choice, being agreeable to all doshas. "Sesame oil is specifically recommended when a warming effect is needed. It grounds Vata... The vast majority of oils are

warming and heavy in quality, including..." soy oil.

"Margarine is cold and difficult to digest and not often recommended by Ayurvedic physicians."

About condiments: Salt, tamari, miso, and pickled ginger all heat up a meal and stimulate agni (fire). A detailed discussion is given of the medicinal function of sea vegetables in Ayurveda (p. 216-17).

About soy milk: Liquid soy milk can be a good alternative to cow's milk, if you are sensitive to the latter. It is also less *Kaphagenic* (imbalancing to *Kapha*) than cow's milk, when properly prepared. Lighter than cow's milk in its effect on the body, it cooks up easily in recipes. Like most high protein foods it promotes building, not cleansing. It is best used in restorative and maintenance programs. It can be warmed with cinnamon, cardamom, nutmeg or ginger and black pepper. Some *Vatas* do not tolerate it well. Dried soy milk powder and soy protein powder are much more difficult to digest than the whole liquid soy milks. Only the most stalwart *Pitta* is likely to be able to consume them without gas, as they are cold, heavy and dry. Whole soybeans and tempeh are often gas-producing as well. For adequate digestion they require much cooking and spicing, good *agni*, and a *Pitta* constitution. Hot soy milk (p. 264).

Scrambled tofu (p. 281,—Vata).

In appendix II (p. 293). The following legumes, in moderation, calm Vata: Aduki beans, soy cheese, soy milk (liquid), tofu, black lentils, mung beans, red lentils, and tepery beans. But these aggravate Vata: Soy beans, soy flour, soy powder, tempeh, garbanzos and most other beans. Among beverages, icy cold drinks and many others aggravate Vata. Beverages that calm Vata are soy milk (well spiced and hot), miso broth, many herb teas. Tofu is calming to Pitta and mildly aggravating to Kapha. Cool in action, some *Vatas* tolerate it well, others do not.

Aduki beans are mentioned on p. 19, 106, 109, 116, 124, 293, 306. Address: 1. Faculty member, The Ayurvedic Inst., Albuquerque, New Mexico; 2. Wife of Yogi Amrit Desai, member of Kirpalu Center for Yoga and Health, Lenox, Massachusetts.

3539. Wagner, Lindsay; Spade, Ariane. 1990. The high road to health: A vegetarian cookbook. New York, NY: Simon & Schuster / Prentice Hall Press. xv + 288 p. Foreword by E. Lee Rice. Index. 24 cm. [54 ref]

• **Summary:** Lindsay Wagner, whose lovely color photo appears on the cover, first achieved widespread television in the early 1970s as "The Bionic Woman." Recently she starred in the Academy-Award winning film *The Paper Chase*. This vegan cookbook uses no meat, dairy products, or eggs. A section titled "Raising the Dairy Question" (p. 13) discusses problems with milk and concludes: "A terrific substitute for milk products comes from that little marvel, the soy bean. Soy milk has the look and consistency of milk, and some brands even taste like it. Try some on your

breakfast cereal, top your pies with our creamless Whipped Cream, spread your sandwiches with eggless Mayo Spread and enjoy Huevos-less Rancheros for brunch. You'll never look at another carton of milk."

Chapter 4, "About the ingredients," includes discussions of Braggs Aminos, cold-pressed oil, kuzu, lecithin, miso, mochi, nori, soy milk, soy sauce, tempeh, tofu. Soy-related recipes include: Huevo-less rancheros (with tofu and soy milk, p. 65). Vegetarian "salami" (with firm tofu, p. 82-83). Mayo spread II (with soy milk, p. 88). Ginger tamari dressing (p. 131). Creamy oil substitute (with soy milk, p. 134). Tofu sour cream (p. 134). Eden cheesy sauce (with soy milk, p. 136).

Chapter 10 (p. 141-59) is titled "Entrées for the meat lover"; most of the recipes are based on soyfoods: Marinated tempeh (p. 141). Marinated tofu. Barbecued tofu or tempeh. Tempeh marinade. Teriyaki tofu. Polynesian tofu. Tofu piquant. Tofu ribs. Grilled tofu with summer vegetables. Japanese eggplant and tofu Romano. Pecan herb loaf (with tofu and soy flour). Easy tofu burgers. Easy easy burgers (with Marinated tempeh or tofu). New Age Italian sausage I (with Marinated tempeh and Marinated tofu). New Age Italian sausage II (with Marinated tofu). Spicy tempeh stir fry. Tofu cacciatore.

Lasagna with zucchini and mushrooms (in Light sauce with soy milk, p. 166). Manicotti stuffed with zucchini and tofu cheese (p. 175). Tacos (with Marinated tofu and tempeh, p. 187). Eggplant al forno (with tofu, p. 213). Banana-strawberry tofu pudding (p. 231). Italian cheesecake (with tofu, p. 243). Coconut-mocha cream frosting (with soy milk, p. 260). Tofu fruit sauce (p. 261). Mock whipped cream (with soy milk, p. 262).

An interesting last chapter titled "Afterword: Meat—We can live without it! Here's why" discusses the role of an "animal-based diet" on destruction of the environment. Address: 1. California; 2. Woodland Hills, California.

3540. Zeffertt, Wendy. 1990. Cultured foods. Gentian Services, P.O. Box 2140, Olympic Valley, CA 95730. 151 p. Illust. by Nancet Zeffertt. Index and recipe index. 28 cm. Spiral bound. [32 ref]

• **Summary:** This book is a good introduction to the many kinds and benefits of cultured or fermented foods. Many chapters (and all soyfoods chapters) contain recipes. Chapters related to soyfoods are 1. Why cultured foods? 2. Cultured dairy products. 3. Miso. 4. Tamari and shoyu (soy sauce). 5. Amazake, sake and mirin. 6. Tempeh. Where to order starter cultures. Glossary.

Note: This is not a vegetarian book; poultry and fish are used in some of the recipes. Address: Olympic Valley, California.

3541. Fantastic Foods, Inc. 1991. Add some character to a quick lunch (Ad). *Health Foods Business*. Jan. p. 40 (A-B).

• **Summary:** The front side of the glossy full-page ad shows a girl smiling behind 7 different "Fantastic Meals in a Cup." The text begins: "Who says a healthy vegetarian lunch can't have a smile in it?" On the back, the ingredients in each of 6 products are listed. Cha-Ca Chili contains textured vegetable protein. All-O-Round Spaghetti contains "soy sauce powder (soybeans, wheat, salt)." Splittin' Peas contains "miso and soy sauce powder (soybeans, rice, wheat, salt)." Leapin Lentils over Couscous contains "miso powder (soybeans, salt)." And Rockin' A B C's contains "miso powder (soybeans, rice, salt)." Address: California.

3542. **Product Name:** Fantastic Cha-Cha Chili, All-O-Round Spaghetti, Splittin' Peas, Leapin' Lentils Over Couscous, Rockin' ABC's.

Manufacturer's Name: Fantastic Foods.

Manufacturer's Address: 106 Galli Dr., Novato, CA 94949. Phone: 415-883-7718.

Date of Introduction: 1991. January.

Ingredients: See below.

Wt/Vol., Packaging, Price: 2 oz (56 gm) paper cup.

How Stored: Shelf stable.

New Product—Documentation: Ad (full page color) in *Health Foods Business*. 1991. Jan. p. 40A-B, and in *Whole Foods*. 1991. Feb. p. 27. "Add some character to a quick lunch." The label of each cup is clearly visible. Ingredients: Fantastic Cha-Cha Chili uses textured vegetable protein as the second ingredient. Fantastic All-O-Round Spaghetti is seasoned with soy sauce powder. Fantastic Splittin' Peas is seasoned with miso and soy sauce powder. Fantastic Leapin' Lentils Over Couscous is seasoned with miso powder. Fantastic Rockin' ABC's is seasoned with miso powder. All the products are low in fat. Just add hot water and serve. Same ad in *Natural Foods Merchandiser*. 1991. Jan. p. 25 (insert).

3543. Fowler Brothers. 1991. Catalog: January 1991. P.O. Box 2324, San Rafael, CA 94912. 79 p. 28 cm.

• **Summary:** The company is a "distributor of natural foods." The following makers, distributors, and brands of soyfood products are listed: I. Bulk Products: Miso (American Miso, 8 products), Soy foods (Turtle Island tempeh and Soy Deli tofu burger). Soy Sauce & tamari (San-J domestic shoyu and tamari, Westbrae Johsen shoyu), Tofu (Quong Hop, 6 products).

II. Packaged products: Ah Soy (Westbrae, 7 soy drinks), Eden Foods (Edensoy, 6 soy drinks), Pacific Soyfoods (6 types of soysage), Pacific Tempeh (4 products), Quong Hop (11 soymilk and 4 tofu products), San-J (tamari crackers, 14 soy sauce & tamari products), Soy Deli (Quong Hop, 5 soy foods, 8 vacuum pack tofu), Sweet Earth (3 vegburgers), Turtle Island (10 tempeh products), Vitasoy (7 soy drinks), Westbrae (2 instant miso soups, 14 soy drinks, 14 types of

soy sauce and tamari). Address: San Rafael, California.
Phone: 415-459-3406.

3544. Kudou, Shigemitsu; Tsuizaki, I.; Uchida, T.; Okubo, K. 1991. Purification and some properties of soybean saponin hydrolase from *Aspergillus oryzae* KO-2. *Agricultural and Biological Chemistry* 55(1):31-36. Jan. [51 ref]
Address: 1&3. Kanesa Miso Co., Ltd., 202 Hamada, Tamagawa, Aomori 030; 2. Faculty of Agriculture, Tohoku Univ., 1-1- Tsutsumitori Amamiya-machi, Aoba-ku, Sendai 981. All: Japan.

3545. Miyazawa, Mitsuo. 1991. [Re: Early shipments of miso and shoyu from Sendai Miso Shoyu Co. Ltd. to Mitoku]. Letter to Chris Dawson of Mitoku, Feb. 22. Based on a request from William Shurtleff at Soyfoods Center. 1 p. [Jap]

• **Summary:** “In Oct. 1970 Jōsen Shōyu was shipped in 18 liter cans, and red (rice) miso was shipped in 20 kg cans.

“In March 1976 brown rice miso was shipped in 20 kg cans. According to our research, these were the earliest dates that each of these products was shipped.”

Chris Dawson adds: “I understand that Johsen was the first with brown rice miso, so this must be the first shipment ever of brown rice miso... I am trying to pull together information about the first shipments of miso and shoyu by Mitoku. It is a little difficult since we do not have the records on hand and some of our early customers are no longer in operation.” Address: Sendai Miso Shoyu Co. Ltd., Furujiro 1-5-1, Sendai 982, Miyagi prefecture, Japan.

3546. Eden Foods, Inc. 1991. Eden Foods product overview (Leaflet). Clinton, Michigan. 12 panels. Feb. 23 x 10 cm.

• **Summary:** Two panels of this leaflet contain a brief history of Eden Foods, plus a chronology of key events in the history of Eden Foods: 1967–The first checking account was opened for Eden Foods, a source of macrobiotic and organic foods in Ann Arbor, Michigan. 1968–Eden Foods, Incorporated became a registered business, with food service, retailing and food processing operations. 1970–Eden Organic Certification Standards were implemented. Eden products were distributed in Michigan and Ohio. 1972–Trade relationship began with Muso Company, Ltd. of Osaka, Japan. 1979–Fire at warehouse reduced records, equipment and inventory to rubble. Two weeks later Eden Foods reopened. 1982–Schmidt Noodle Company, maker of Eden organic pasta since 1976, was acquired by Eden Foods. 1983–Edensoy soy beverage introduced; historic new item in natural foods market. 1985–San Francisco, California sales office and warehouse opened to service the West Coast. 1986–American Soy Products opened to produce Edensoy in Michigan; first aseptic soy beverage plant in the United States. 1988–Eden Foods joined OCIA,

Organic Crop Improvement Association, for independent certification of crops. 1989–Eden and OCIA established standards for food processing as well as growing crops.

Six panels inside the leaflet describe the company’s main product lines and give color photos of leading products from each line: Edensoy soy beverage. Organic durum pasta. Organic tomatoes. Organic grain sweetener (100% barley malt). Oils & vinegars. Beans & grains. Fruit products. Seasonings (Sesame Shake = gomashio). Traditional Japanese pasta. Traditional Japanese miso. Japanese soy sauces. Japanese sea vegetables. Japanese oils & vinegars. Japanese chips & crackers. Japanese pickles. Japanese concentrated foods (plum, garlic, kombu). Japanese teas. Japanese specialty foods (macrobiotic).

The company’s trademark is now “Making a tradition of good health.” Address: 701 Tecumseh Rd., Clinton, Michigan 49236.

3547. **Product Name:** Meatless Healthy Bacon (Made with Tempeh).

Manufacturer’s Name: White Wave, Inc.

Manufacturer’s Address: 6123 E. Arapahoe Rd., Boulder, CO 80303. Phone: 303-443-3470.

Date of Introduction: 1991. February.

Ingredients: Soy tempeh (cultured organic soybeans, water), soy sauce (water, soybeans, whole wheat, salt), miso (soybeans, water, salt), dried yeast, beet powder for color, dehydrated onion, granulated garlic, natural liquid hickory smoke and spices.

Wt/Vol., Packaging, Price: 6.5 oz (184 gm) plastic pouch.

Nutrition: Per 1 oz.: Calories 27, protein 4 gm, carbohydrate 4 gm (incl. 3.3 g, dietary fiber), fat 1 gm, cholesterol 0 mg, sodium 310 mg.

New Product–Documentation: White Wave News. 1991. Vol. 4, No. 1. June. A photo shows the label. Like all White Wave products, Meatless Healthy Bacon is made with soybeans grown in accordance with Section 26569.11 of the California Healthy and Safety Code [i.e. organic soybeans]. A comparison of 1 oz. broiled/fried bacon (pork) with Meatless healthy Bacon shows: Fat: 14 gm vs. 1 gm. Saturated fat: 4.95 gm vs. 0.15 gm. Cholesterol: 24 mg vs. 0 mg.

Label sent by Lon Stromnes. 1991. July 30. 4.5 by 10.25 inches. Plastic pouch. Red, black, and yellow on white. “Cholesterol-free! Vegetarian breakfast strips. A great-tasting choice.”

3548. Dawson, Chris. 1991. Re: Chronology of early shipments of shoyu and miso from Mitoku to Europe and the USA. Letter (fax) to William Shurtleff at Soyfoods Center, March 8. 1 p.

• **Summary:** 1969–First shipment of organic shoyu (Sakae Shoyu brand) from Fukaya Shoten in Shizuoka prefecture,

Japan, to Mr. Sakaguchi of Le Bol en Bois in Paris, in 16 liter tins. This shoyu was made with MOA* ingredients.

1970, Oct.—First shipment of Jôhsen Shoyu and red rice miso from Sendai Miso Shoyu Co. Ltd. in Sendai, Miyagi prefecture.

1971—First shipment of Hatcho miso from Hatcho Miso Ltd. in Aichi prefecture to USA.

1976, March—First shipment of brown rice miso from Sendai Miso Shoyu Co. Ltd. in Sendai, Miyagi prefecture. In 20 kg tins.

1980, May—First shipment of Onozaki rice miso from Onozaki Koji-ten in Tochigi prefecture to Oak Feed in Miami, Florida. 84 cartons and 4 kegs.

1980—First shipment of buckwheat miso from Kamegen Jyozo in Nagano prefecture, to Europe. 100 packs of 500 gm each.

1984, Sept.—First shipment of organic tamari from Mansan Shoten in Aichi prefecture to Blake Rankin of Granum in Seattle, Washington. Four x 18 liters.

1984—First shipment of organic soybean miso from Mansan Shoten in Aichi prefecture to Jon Judson of Soy Source, Christchurch, New Zealand.

1987—First shipment of organic young (*waka*) Hatcho miso from Hatcho Miso Ltd. in Aichi prefecture to USA.

1989—First shipment of organic Hatcho miso from Hatcho Miso Ltd. in Aichi prefecture.

* Note: MOA refers to Mokichi Okada International Association, which is a commercial association related to the Japanese religion *Sekai Kyusei Kyo* which means “helping the world religion.” Its basic tenet is to “Make heaven on earth,” to bring peace on earth and health to all people. There are approximately 700,000 members in Japan. Mokichi Okada lived 1882-1955. The commercial company was formed in 1920 and is now known as MOA Trading Company. Its purpose is to promote natural and organic farming and provide natural products for people. Address: International Sales Manager, Mitoku Co. Ltd., C.P.O. Box 780, Tokyo 100, Japan. Phone: 3-3201-6701.

3549. Kudou, S.; Shimoyamada, M.; Okubo, K. 1991. A new isoflavone glycoside in soybean seeds (*Glycine max* Merrill), Glycetein 7-O-β-D-(6"-O-acetyl)-glucopyranoside. *Agricultural and Biological Chemistry* 55(3):859-60. March. [6 ref]

• **Summary:** Soybeans are known to contain the five isoflavone glycosides (genistin, daidzin, glycetein 7-O-β-D-glucoside, 6"-O-acetylgenistin, and 6"-O-acetyl daidzin) and their corresponding aglycones. Address: 1,3-4. Kanesa Miso Co., Ltd., 202 Hamada, Tamagawa, Aomori 303; 2&5. Faculty of Agriculture, Tohoku Univ., 1-1- Tsutsumitori Amamiya-machi, Aoba-ku, Sendai 981. All: Japan.

3550. Wasserman, Debra; Mangels, Reed. 1991. Simply vegan: Quick vegetarian meals. Vegetarian Resource Group,

P.O. Box 1463, Baltimore, MD 21203. 224 p. March. Illust. General index. Index of tables. 23 cm. [117 ref]

• **Summary:** A vegan cookbook. Contents: Foreword. Time-saving cooking suggestions: Microwave cooking. Sample menus: Menu analysis. Top recipes for calcium and vitamin C. Top recipes for iron. Recipes (one section is titled Soy Products: Tempeh Dishes, Tofu Dishes). Food definitions and origins. Herbs and spices. Vegan nutrition (written by Reed Mangels, PhD, RD. Each of the 18 topics is followed by a bibliography; includes a section on each major nutrient, pregnancy, lactation, feeding vegan kids, nutrition glossary, recommended reading list). Cruelty-free shopping by mail.

The Vegetarian Resource Group. The group also publishes a bimonthly magazine, *Vegetarian Journal*, and is considered by dietitians to be a good source of nutrition information for vegans.

This book contains more than 20 tofu recipes and 6 tempeh recipes. Address: VRG, Baltimore, Maryland. Phone: 301-366-8343.

3551. Paine, Heather. 1991. Soya and SIAL '90: Editorial. *SoyaFoods (ASA, Europe)* 2(1):1. Spring.

• **Summary:** “Last year’s SIAL (Salon International de L’Alimentaire) was certainly impressive and all the more so because soyafoods and products containing soya had a remarkably good presence... French soyafoods companies were well represented with many new products... In the ‘new products’ section a soya-oil based margarine from Denmark (Margarines AMA-Dragsbaek Margarine Fabrik S A) won a SIAL D’Or award and a soyamilk from Argentina (AdeS) was highly commended.” Address: editor, SoyaFoods, 27a Santos Rd., London SW18 1NT, UK. Phone: 081-874-5059.

3552. **Product Name:** Miso [Sweet White, Sweet Brown, Mellow White, Mellow Brown, Mellow Barley, English Field Bean Amakuchi (10.9% salt with Field Beans and Barley), and English Soy & Barley Amakuchi].

Manufacturer’s Name: Source Foods.

Manufacturer’s Address: Unit G, Arnos Castle Estate, Junction Rd., Arnos Vale, Bristol BS4 3JP, England. Phone: 0272-716-487.

Date of Introduction: 1991. April.

New Product–Documentation: Talk with Paul Chaplin, founder and owner of Source Foods, who called from England 1992. Feb. 26. He started to sell the miso he makes in April 1991 at a food show and was selling all within 1991. He makes only light, short-term misos. He learned to make miso by working for 5 weeks at Lima Foods in the south of France. He has both books on miso by Shurtleff and Aoyagi. During October and November 1985 he visited and studied with Don DeBona at American Miso Co. in North Carolina, USA. He is now making and selling 7 types of miso. Now he needs to move to another place in Bristol

(perhaps to 16 Pembroke Rd.) because his building is being demolished. Linda Perfect of Impulse Foods in Bristol (tempeh maker) has to move too and is considering moving into the same building. He has very little money.

Talk with Paul Chaplin. 1997. March 20. The new address of Source Foods (Organic Priority) is 9 Cwm, Business Centre, Marine Street, Cwm, Ebbw vale, NP3 6TB, Wales, UK. Phone and fax: +44 01495 371 698.

3553. Tatsumi, Yoshiko. 1991. Kotokoto fukkura–Mame ryôri [Simmer slowly and they expand: Bean cookery]. Tokyo: Zaidan Hôjin Nôsan Gyôson Bunka Kyôkai. 214 p. April 30. [Jap]

• **Summary:** The word *kotokoto* in the Japanese title describes the sound of bubbles coming up during simmering; it is sometimes translated as “pit pat.” This book contains a section of edamame recipes (p. 52-58). After that comes a section on tofu, miso, and shoyu (p. 59+). Address: Cooking teacher, Japan.

3554. Japan company handbook. 1991. Tokyo: Toyo Keizai, Inc. Spring 1991. Second section. [Eng]

• **Summary:** In the section on Foods, 1 page of statistics is given on each of the following soy-related companies: Torigoe Flour Milling, Marukin Shoyu (Japan’s 5th ranked shoyu maker, based in Shozu island), Yutaka Shoyu (based in Tokai area, also makes miso), Sanbishi (shoyu maker based in Tokai area), Kibun. Address: Tokyo, Japan.

3555. Starr, Sara. 1991. Soyfoods: Pleasing to the palate, easy on the planet. *Health Foods Business*. May. p. 34-39. [1 ref]

• **Summary:** “Based on data from the nation-wide study, 1990 HealthFocus on U.S. Consumers, about one in ten health active food shoppers say they eat soyfoods once every two weeks or more.” Address: Vice President, Health Focus Inc., Emmaus, Pennsylvania.

3556. Ohlund, Tim. 1991. Re: Early work with miso and koji in Sweden. Letter to William Shurtleff at Soyfoods Center, June 5—in reply to inquiry. 2 p. Handwritten.

• **Summary:** Tim did the pioneering work with miso and koji in Scandinavia. The following dates were carefully extracted from his records in response to a number of questions asked by William Shurtleff.

1973 summer (July)—I was in Japan to study miso and tofu making, etc.

1982 Feb.—I first sold miso in Sweden. That first year I sold about 35 kg of rice miso and barley miso to friends.

1983 Sept.—I first produced an organic miso (from all organically grown ingredients), using oat koji and yellow peas.

1984 April—I started using the name Malvabo (address: 19063 Örsundsbro, Sweden) and first sold miso to a retail

food store. The first varieties of miso I made were rice miso, barley miso, and oat miso. I also experimented with using peas instead of soybeans because peas are easier to grow in Sweden.

1985 Sept.—I first sold the organic miso developed in late 1983. Address: Timoteus Kojiprodukter HB, Härvestagård, 19 063 Örsundsbro, Sweden. Phone: 0171-65106.

3557. Miso, shôyu no rûtsu wa doko ka? O-shôyu sukii tanken-tai [Where are the roots of miso and shoyu? Two shoyu-lovers go exploring in China]. 1991. Television broadcast. Channel 26. California. June 9. Sat. 8-9 P.M. [Jap]

• **Summary:** This program is part of the series “Shin Sekai Kikô” (New World Homeward Voyage). In Japan, the two explorers first visit two historic places in Wakayama prefecture: In one shop, Kinzanji miso is still made. The Buddhist monk Kakushin from Shinshu in Japan learned to make this miso from a temple named Kinzanji in southern China. They also visit Kadocho, a shop where shoyu is still made in the ancient way. They then travel to China, arriving in Shanghai, and go directly to Hangchow (also spelled Hangzhou; Pinyin: Hangzhou; Japanese: Kôshu), the capital of Chekiang province, located a little to the southwest. In the market there they find a relative of Kinzanji miso, named *tien tou-shih* (sweet soy nuggets) sold at a soy sauce shop.

The shop owners suggest that they go to Chungking (pinyin: Chongching; Japanese: Jûkei), a major city in Szechuan province, to learn more. There they find *tou-shih*, which resembles Japan’s Hamanatto or Daitokuji Natto. Then they visit the ruins of Kinzanji temple where Kakushin learned to make miso. After walking up a long, steep rock path they discover that only a historic bell tower is left.

Now they travel to Yunnan province, in central southern China, wedged between Vietnam and Burma. They arrive at Kunming (pinyin: Kungming; Japanese: Konme). In this area the weather is semi-tropical and many types of fermented foods are made. Now they travel 800 miles by car to the southern tip of Yunnan to a mountain village named Shisan Panna. There lives the primitive Aini tribe, in thatched houses with barefoot children. An elderly woman shows them how she makes miso. Roast the soybeans in a wok, then add water and cook. Pour into a bamboo basket (1 foot diameter, 10 inches deep) lined with a banana leaf, fold the ends of the leaf over the top, and place then basket on a rack over the hearth sunk in the middle of the room’s floor (Jap: irori) for 2-3 days so that the warmth aids the fermentation. Transfer the fermented soybeans to a wooden mortar, add salt and hot chilies (no grain), then pound to a paste. Shape this into 3-4 inch diameter patties, put these on a shallow 2.5 foot diameter bamboo tray, and place on the

rooftop in the sun for 3 days. Broil the patties directly over the fire, put in a mortar, add more salt and chilies, and pound to a paste. Now add boiling water and serve. The result is a spicy miso soup with a bit of a natto flavor (Japanese: natto-jiru). Thus, the Japanese apparently did not invent miso soup! Address: Japan.

3558. Kandler, O. 1991. Bedeutung der Milchsäuren Gärung fuer die Herstellung von Sojaprodukten [Significance of the lactic acid fermentation for the production of soy products]. In: F. Meuser and P. Suckow, eds. 1991. Soja in Lebensmitteln: Vortraege 2. Hamburger Soja-Tagung. Berlin: Technische Universitaet Berlin, Institut fuer Lebensmitteltechnologie und Gaerungstechnologie-Getreidetechnologie. 171 p. See p. 45-62. [32 ref. Ger]

• **Summary:** Contents: Introduction. Overview of lactic acid bacteria and lactic acid. Occurrence of lactic acid in soy products. Lactic acid fermentation in the production of soy sauces and pastes. Fermented lactic acid soy beverages. Conditions for growth and acidification. Acidification and carbohydrate content. Selection of bacteria. Future developments. Summary. Address: Botanisches Institut der Ludwig-Maximilians-Universitaet, Munich, Germany.

3559. Messina, Mark; Messina, Virginia. 1991. Increasing use of soyfoods and their potential role in cancer prevention. *J. of the American Dietetic Assoc.* 91(7):836-40. July. [56 ref]

• **Summary:** Contents: Abstract. Introduction. Historical perspective. Soybeans and the US food supply: Soy protein products, retail soyfoods sales. Nutrient contribution of soyfoods. Soybeans and cancer risk: Experimental studies (isoflavones, protease inhibitors, epidemiology, breast cancer, colorectal cancer). Conclusions. Implications.

“Soybeans contain, in relatively high concentrations, several compounds with demonstrated anticarcinogenic activity. Two of these compounds—protease inhibitors and phytic acid—have traditionally been viewed as antinutrients... It may not be appropriate to evaluate soybeans on nutrient content alone; dietitians need to know about the nonnutritive dietary compounds, called phytochemicals, which may have anticarcinogenic effects... Overall, the epidemiologic data suggest that soy consumption may lower colorectal cancer risk, whereas there is only moderate support for the role of soy in reducing breast cancer...”

Table 1 (p. 838) gives the “Proximate composition and selected nutrient content of various soyfoods in common serving sizes and in 100-gm edible portions” (based on Haytowitz 1986). The soyfoods are: Miso, natto, okara, roasted soybeans (dry- or oil roasted), soy sauce (tamari), tempeh, firm tofu (raw), regular tofu (raw). Address: 1. Diet and Cancer Branch, Div. of Cancer Prevention and Control,

National Cancer Inst., Bethesda, Maryland 20892; 2. Registered Dietitian, private practitioner, Washington, DC.

3560. Tara, Bill. 1991. Pioneering macrobiotics and soyfoods in London (Interview). *SoyaScan Notes*. Aug. 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Starting in the late 1960s, the pioneering work with soyfoods in London was done by Craig and Greg Sams. They and their parents were Americans, and they had gone to college in America. Their father was employed by the U.S. armed forces as an historian; they spent a lot of their time growing up between America and England. Greg fell out of a tree while going to college in Berkeley in the late 1960s and was paralyzed from the waist down, so he was confined to a wheelchair, but was still very active and innovative. In the late 1960s they set up a macrobiotic natural foods cafe/restaurant on Portobello Road in London, then changed it into Ceres Grain Shop, a natural foods retail store. As volume increased, they began to distribute their products out of the back of their shop, and in about 1971 founded Harmony Foods Ltd. as a distribution company located in a warehouse on Ladbrooke [sic, Latimer] Road. The model and evolution was similar to that of Erewhon in Boston. Harmony Foods was the first natural foods distributor in England, and probably the second in Europe after Lima Foods of Belgium. Soon they were importing macrobiotic foods from Japan, and distributing organically grown grains from England and from The Camargue (a marshy island in the delta of the Rhone River in the south of France), etc.

Among their early Japanese imports were bulk miso and “tamari” (actually shoyu), imported from Muso in wooden kegs. They repackaged the miso and shoyu in glass bottles under the Harmony Foods label in London. This was the first Japanese miso and shoyu sold in England. In about 1972, as soon as Erewhon started having miso and shoyu packed in Japan, the Sams had the same thing done with theirs, then they applied their own labels in London. But they continued to import in bulk as well. A Chinese company in London made tofu and [mung] bean sprouts, then sold the tofu to the Sams brothers; they sold it unpackaged in open trays in water. At that time, tofu was not emphasized much in macrobiotic circles so not much was sold; it was considered too yin. The Sams also sold deep-fried Rissoles filled with TVP instead of meat; as early as 1970 the Rissoles were being made by an Israeli guy (name?) who owned a shop (name?) by the Hempstead Heath. Marigold Foods also used TVP in the mid-1970s.

In 1970 Bill Tara, then a vice president at Erewhon in Boston, passed through London on his way to India. One purpose of his trip was to scout out the possibility of Erewhon setting up a distribution point or center in England. Paul Hawken was president of Erewhon at the time, and Erewhon was importing miso and tamari from

both Muso and Mitoku in Japan. Bill and Paul had been roommates in a warehouse in San Francisco, then they took over the Erewhon food store from Evan Root, Paul starting 2-3 months before Bill. In London, the Sams brothers were just opening a new natural foods restaurant in the Notting Hill area so Bill and Paul Petrofsky spent 2 weeks fixing it up. Paul later started Baldwin Hill Bakery with High Lerner. Bill stayed in London 2-3 months during this first visit.

In about 1972 Bill returned to London with Russel Demerais, on the Erewhon payroll, again to start and Erewhon distribution center. But Erewhon went through a cash crisis and Harmony foods had grown dramatically. So Bill and Peter Bradford (an Englishman who had come to America in about 1970 and worked for Erewhon doing organic agriculture at Erewhon Farms near Keene, New Hampshire) began to work for the Sams brothers both at Ceres Grain Shop (the retail store) and Harmony Foods (in the warehouse). Bradford, who now has a very successful natural food store in England named Clearwater Natural Grocer, has been one of the most important promoters of soyfoods in the UK. At this time, Craig Sams set up a bakery. By now, miso and tamari sales had increased; Harmony was still affixing its own label to unlabeled packs.

In 1974 Bill and Peter established Sunwheel as a natural food/macrobiotic distributor. They picked up exotic Japanese imports that Harmony found unprofitable and wanted to drop—so there was little or no competitive feeling with the Sams. By late 1974 Sunwheel Hacho Miso, Mugi Miso, and Tamari were on the market, imported from Muso (Yuko Okada) in Japan. Sunwheel also made granola and peanut butter. Sunwheel never sold any other soyfood products; they had very limited warehouse space and no refrigeration.

Note: On 17 Aug. 1975 Renée Tara wrote William Shurtleff in California. She was living at 30 B Market St., Bradford-on-Avon, Wilts., England. She is writing a European Macrobiotic Cookbook. She requests information on miso and invites Shurtleff to visit.

In about 1977 Sunwheel acquired a retail store that had been started in and by the Community Health Foundation. By 1979 Sunwheel was very successful, but it needed to be recapitalized or sold. So the partners decided to sell it to a larger health food company; Peter kept the retail store.

In Nov. 1975 Bill established the Self Health Center which by 1976 grew into the Community Health Foundation (CHF). By 1976 CHF was offering classes in soyfoods. Paul Jones was the key man with tofu; he taught classes and started making tofu out of his home in the Highgate area. Paul Jones was definitely the first Caucasian to pioneer tofu in England. Simon Bailey, a baker who was originally with one of the first natural foods stores in England, located in Bath, taught about tempeh. These people were experimenting in the kitchen with soyfoods and taught in a sort of an apprenticeship program. Jon Sandifer, who is still

with CHF, learned tempeh from Simon Bailey. CHF sold some tofu and tempeh through its own sit-down restaurant named The Seven Sheaves, then renamed The Natural Snack and changed to a cafeteria. A few people did experiments with miso but it never got to a commercial scale in part because of persistent rumors that Lima Foods was going to start making it.

By the late 1970s soyfoods were growing in popularity in the UK. Two separate groups promoted them; the vegetarians and animal rights people (who liked TVP), and the natural foods and macrobiotic people. Marigold Foods also used TVP in the mid-1970s.

Much of important pioneering commercial work with soyfoods in Europe was done by macrobiotic groups in the Netherlands and Belgium. Bill often went there to teach in 1974-79. Tofu, and later tempeh, were emphasized by groups such as Manna in Amsterdam and De Brandnetel in Antwerp. Macrobiotics was much more active in the Lowlands than in England.

The Sams brothers later started Whole Earth as a marketing company for their jams. They sold it fairly soon. Greg Sams (disabled) is no longer in the food business; he runs The Chaos Shop in London which sells photographic reproductions of computer-generated chaos patterns. Craig started Realeat Co. and now may be with the Haldane Foods Group. Address: Director, Nova Inst., P.O. Box 4648, Estes Park, Colorado 80517. Phone: 303-586-6265.

3561. Stackler, Ben. 1991. Macrobiotics and soyfoods in the Soviet Union (Interview). *SoyaScan Notes*. Aug. 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The macrobiotic movement in the West has recently been very active in Eastern Block countries. The leaders there are mostly medical doctors. They are treating Chernobyl radiation patients using macrobiotics. Two areas of greatest activity in the USSR are Leningrad (now named St. Petersburg), and a city in the Ural Mountains (east of Moscow) named Chelyabinsk (also spelled Cheliabinsk; a subdivision of the Russian S.F.S.R.). The St. Petersburg doctors have many ambitious plans. They want to manufacture miso and tempeh on a commercial in cooperative with a brewery in St. Petersburg. A year ago there was a macrobiotic conference in Yugoslavia; 500 people from all over Europe attended and Michio Kushi was the featured speaker. In October 1990 Ben went to Moscow and St. Petersburg with 6 macrobiotic people. He had hundreds of pounds of donated miso sent by airlift to the USSR. The *One Peaceful World* newsletter, published by the Kushi Institute in Massachusetts, did a story on his October trip; it includes the names and addresses of the interested people. He will be making a second trip to the USSR within one week, revisiting people he met before.

Note: The MacNeil/Lehrer Newshour reported on 14 Feb. 1992 that a top-secret Soviet nuclear weapons complex

is located near the city of Chelyabinsk. It is one of ten which together produced all of the former Soviet Union's nuclear weapons. Address: 1400 Shattuck Ave. #7-2, Berkeley, California 94709. Phone: 415-527-9389.

3562. Sams, Craig. 1991. Pioneering macrobiotics and soyfoods in England, 1967-1979 (Interview). *SoyaScan Notes*. Aug. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Craig and Greg Sams were both born in America. Their mother is from Nebraska and their father from Pittsburgh, Pennsylvania. Greg is 4 years younger than Craig. During the 1950s and 1960s the family went to England periodically, largely because Craig's father worked in England as a historian for the U.S. Air Force. In 1965 Craig took a year off from college, traveled around the Indian subcontinent, and got hepatitis. Upon returning to the Univ. of Pennsylvania in Philadelphia for his final year, he fell in with 3 followers of macrobiotics and got interested in macrobiotics. In about Feb. or March of 1966 he went to the Paradox, a macrobiotic restaurant in New York and decided that he wanted to start a similar restaurant in London. In late 1966 Craig's brother, Greg, fell out of a tree in Berkeley, was paralyzed from the waist down and was confined to a wheel chair.

In Feb. 1967 Craig started a restaurant named the Macro at 10-A Airlie Gardens, Holland Park, London. Yoko Ono, John Lennon's wife, was one of the first regulars. She was the first person Craig met in London who was aware of macrobiotics; she had learned about it in Japan. But Craig had to close Macro after 2 months because of zoning problems. In mid-1967 Greg joined Craig in London and in Dec. 1967 they opened a new macrobiotic / natural foods restaurant named Seed at 136a Westbourne Terrace, W.2, London—a few minutes walk from Paddington Station. Soyfoods were a part of the menu. They got Kikkoman shoyu, shiro-miso, and Hatcho miso from a Japanese import company named Mikado-ya, which was run by Japanese in southeast London out of the basement of a house and supplied Japanese embassies in Europe and Africa. At that time Craig thinks there were no Japanese restaurants or retail stores in London. Seed soon started to import Hatcho and barley (mugi) miso from Muso in Japan. Seed never used any of Lima's soyfood products. Seed also used fermented tofu; they mixed it with tahini, spread it on bread, and called it a Rarebit—an alternative Welsh Rarebit, which is cheese on toast. Seed purchased fresh tofu and [mung] bean sprouts from a Chinese company named Lung Kee on Fermoy Road, Paddington, London, right on the banks of the canal. It was run by one Chinese man who employed about 15 West Indian / Jamaican women who made the foods. Bean sprouts accounted for most of Lung Kee's business. Craig has no idea when Lung Kee started making tofu. In addition to its mainstay, brown rice, Seed served the

tofu diced in miso soups, or sauteed with vegetables such as nitsuke carrots, etc., or as a dessert with tofu and apple concentrate whipped with fruit to a thick creamy consistency and chilled. The restaurant did well. It was soon famous for its "groovy vibes" and its free meal of brown rice, veggies, and green tea for those who could not afford to pay. Although the Sams brothers were not "proponents of the brown rice and marijuana regimen" (as Kotzsch had implied in 1985, p. 221), Seed was a favorite hangout for a host of '60s counterculture celebrities such as The Beatles, The Rolling Stones, Yoko Ono, and others. Americans such as Bill Tara, Peggy Taylor, Eric Utne, and Paul Petrofsky also worked there. Then people began to ask the Sams if they could buy staple foods from the restaurant. So food was soon packaged and sold over the restaurant counter.

In about March 1969, to meet the growing consumer demand, the Sams brothers opened Ceres, a natural foods / macrobiotic retail store, at 8-A All Saints Road, 2 blocks from and parallel to Portobello Road. Ceres also did extremely well, with Greg and various managers having the main responsibility while Craig focused on the restaurant. Soyfoods retailed by Ceres included Hatcho and mugi miso, tamari, fermented tofu, and fresh tofu sold in trays immersed in water. Eventually Bill Tara and Peter Bradford took over management of Ceres. Soon other people began to open restaurants and natural foods / macrobiotic stores like Ceres in college towns in England: Infinity Foods in Brighton (at Sussex University; Peter Deadman, Robin Bines, Simon Bailey were involved), Arjuna in Cambridge, Harvest in Bath, and On the Eighth Day in Manchester. In 1970 the Sams developed a large mobile tent macrobiotic restaurant and made a lot of money by taking it to various big rock festivals.

In Aug. 1970 Harmony Foods was established as a natural foods / macrobiotic import, product development, and distribution company. The money from the mobile restaurant was used to rent a building at No. 10 St. Luke's Road in London (only about 300 yards from the Ceres shop), and to import enough products to start a line / range of products under the Harmony Brand (the logo was a yin / yang sign). They stored and packed these in basement at Harmony Foods. Starting in 1969, the first imports for the restaurant and for Ceres had come from Muso in Japan, and from a macrobiotic society in Vietnam came red rice and green tea. In 1970 they started to import 4-5 tons of organically-grown brown rice from The Camargue in the south of France. Grown by the same man who grew brown rice for Lima Foods, it became the company's main product. Harmony Foods started out with about 20 customers—16 conventional health food shops and 4 of the new wave of natural foods stores (which the natural foods stores called "grain shops"). Wholefood of Baker Street was the pioneer "organic shop" that started in the 1950s. They were part of the Soil Association, so organic growers used it as an outlet

for the first organically grown produce retailed in England. They soon became an important outlet for Harmony Foods as well. In addition a man named Ivan Cerilla?? would collect food (mostly produce) from the organic growers and deliver it to restaurants like Seed and Manna in London. One other product that was grown organically was Pimhill Flour. Harmony Foods was a pioneer in developing new organic growers (such as Stewart Patterson who farmed wheat with horses) and in putting organically grown foods into retail outlets.

By Aug. 1970 Harmony Foods was distributing soyfoods, including Hatcho miso, mugi (barley) miso, and tamari from Muso in Japan—imported in wooden kegs and packed in glass jars. These were the first miso and shoyu products available at retail outlets in England.

In Jan. 1971 Harmony Foods outgrew its building on St. Luke's Rd. and moved into a larger warehouse at 191 Latimer Road (Maidenhead), a former cosmetics factory. Just before the move, Bill Tara informed the Sams that he was in London to set up Erewhon Europe to compete with Harmony. The restaurant, Seed, was sold in the spring of 1971 and reopened as The Magic Carpet. In 1971 Ceres was renamed Ceres Grain Shop and relocated at 269 A Portobello Rd.

In mid-1972 the shop next to Ceres closed. The Sams took it over and made it into Ceres Bakery. It transformed large amounts of wheat, organically grown in England, into unique and delicious naturally leavened breads. The enzymes in the freshly-milled flour helped to leaven the bread.

When they closed down Seed, the restaurant on All Saints Road, there was still a demand for simple macrobiotic food, so in about Feb/March 1971 they opened Green Genes, a sort of macrobiotic workingman's café on a much smaller scale. Each person picked up her or her food from a counter; there was no table service. It was open for lunch only whereas Seed had been open only in the evenings.

In 1972 they began to publish a magazine titled *Seed: The Journal of Organic Living*. Bill Tara and Peter Bradford helped with it occasionally. It continued for 6 years. That same year, above Ceres Bakery, started Ceres Bookstore, which only last for 1½ years.

Meanwhile Bill Tara and Peter Bradford had expanded and transformed Ceres Grain Shop, but in a way that led to extensive shoplifting, so it was scaled back to near its original size and finally sold in 1979 to Jack Weller. By that year all efforts and resources were focused on Harmony Foods, the wholesale business. Peanut butter (non-organic), the first product manufactured by Harmony, was now in two of the leading supermarket chains, Safeway and Waitrose. Address: 269 Portobello Road, Notting Hill, London W11 1LR, England. Phone: 071-229 7545.

3563. Gray, Sylvia Ruth. 1991. Vitamin B-12: A disappearing act? *Gold Mine Gazette (San Diego, California)*. Summer. p. 1, 6. [5 ref]

• **Summary:** Theorizes as to why the vitamin B-12 content of our foods may be decreasing. "In the 1960s, tests using the protozoan *Ochramonas malhamensis* showed B-12 values for beef liver, beef heart, Swiss cheese and chicken breast to be 122, 14.2, 1.71, and 0.5 mcg/100 gm, respectively. Tests in 1989 by the same protozoan and procedure identified no B-12 in any of these foods and only 2.19 mcg/100 gm in "natural" beef heart—little more than one-seventh of the previous value. Similarly in the 1960s, tests using the bacterium *Lactobacillus leichmannii* showed B-12 values for egg yolk and canned tuna to be 9.26 and 2.8 mcg/100 gm. Tests on these same foods by the same bacterium and procedure in 1990 revealed B-12 values of 1.28 and 0.5 mcg/100 gm," respectively.

"Happily a number of foods used in the macrobiotic and vegetarian communities appear superior to their flesh food counterparts. Wakame, kombu, and nori showed B-12 levels above 9 mcg/100 gm, while mekabu and alaria were approximately 2. (Note: Since bacterial synthesis of vitamin B-12 occurs mostly on the sea vegetables' surface, they are weighed dry and tested unwashed. Findings need to be divided by four to obtain mcg/100 gm cooked portion, and consumers should strain and use the rinse water in cooking.) Aside from sea vegetables, one brand of tempeh was above 4 mcg/100 gm of B-12 and three quality misos ranged between 0.74 and 0.16 mcg/100 gm."

Vitamin B-12 was the last of the vitamins to be discovered (in 1948). It can only be produced in nature by bacterial synthesis. Address: Strictly Macrobiotic, 315 First Ave., Salt Lake City, Utah 84103. Phone: 801-521-7936.

3564. McSweeney, Daniel. 1991. Consumer survey 1991. *Whole Foods*. Aug. p. 34-36, 39, 41.

• **Summary:** This survey was conducted at 18 natural foods stores throughout the USA. Product purchases. Percentage of respondents who purchased a type of product at a natural foods during the past 12 months: Cheese substitute 28%, meat 34%, miso 34%, sea vegetables 33%, soy milk 51%, soy sauce 36%, tamari 52%, tempeh 33%, tofu 57%, yogurt (dairy) 64%.

3565. *One Peaceful World (Becket, Massachusetts)*. 1991. Whole foods in the Soviet Union. No. 8. p. 4. Summer.

• **Summary:** "Macrobiotics continues to spread in the U.S.S.R. In Cheljabinsk [Chelyabinsk, Cheliabinsk], doctors report that the thousands of pounds of food airlifted to Russia by OPW last fall is being put to good use. 'Miso is helping some of our patients with terminal cancer to survive,' report Drs. Lidia Yamchuk and Hanif Shaimandarov. 'Their blood (and blood analysis) became better after they began to use miso in their daily food.' They

also hope to grow soybeans and request seeds that will ripen in a short, cool summer.

“To help, contact: Lidia Yamchuk or Hanif Shaimardanov, Br. Kashirini Str. 108A 141, Cheljabinsk 454136, U.S.S.R. Or: Yuri Stavitsky, 23 Bolshaya Raznochinaya Flat 12, Leningrad 197110, U.S.S.R.”
Address: Box 10, Becket, Massachusetts 01223.

3566. Pickarski, Ron. 1991. *Friendly foods: Gourmet vegetarian cuisine*. Berkeley, California: Ten Speed Press. 277 p. Illust. Index. 23 cm. [23 ref]

• **Summary:** This is a stylish vegan cookbook, with a wealth of sophisticated and delectable soyfoods recipes. The author recommends only high-quality ingredients. Brother Ron grew up in Michigan and during high school spent time in the restaurant business flipping hamburgers. Later he became a Franciscan monk (OFM). A look at his own health revealed the need to change his diet. So Brother Ron changed to a natural vegetarian diet and experienced weight loss and renewed energy. Now he considers himself a food missionary—helping people transform their lives through food. Friendly foods are “foods that are friendly to our bodies, our pocket books, our busy schedules, and our environment.”

In the section on dairy-like products, the author recommends soy milk and some “tofu ice creams.” He recommends use of soy cheeses sparingly since they are high in fats (especially the softer types). He considers nondairy creamers to be a less healthful than their dairy counterparts, since they are high in saturated fats and artificial additives. “Typically, nondairy creamers contain corn syrup solids, partially hydrogenated vegetable oil (including coconut oil, cottonseed oil, palm oil, or palm kernel oil), sodium caseinate, sodium phosphates, mono- and diglycerides, sodium silico aluminate, and artificial color. I do not consider this type of product to be an example of a high-quality food.”

Soy-related recipes include: Marinated vegetables with marinated tofu (p. 41). Shish kebabs (with marinated tofu, p. 42). Marinated tofu with scallions (p. 43). Gefilte tofu with horseradish and charoset sauce (p. 49-50). Zucchini bisque (with tofu, p. 66). Tofu wakame salad (p. 82). Tofu cottage cheese (p. 89). Vegan sour cream (with soy milk, p. 90). Soy mayonnaise (with tofu, p. 90). Silken tofu mayonnaise (p. 91). Lemon cream dressing (with tofu, p. 92). Oil-less miso dressing (with soy milk and white miso, p. 96).

In the chapter on entrees, there are detailed descriptions of tofu, tempeh, and seitan. Soysage (with cooked soybeans and soymilk, p. 105). “Meatballs” (with cooked soybeans, p. 107). American loaf (with silken tofu, p. 112-13). Tofu spinach pie (p. 120). Auberge Hanfield pie (with silken tofu, p. 121). Russian vegetable pie (with silken tofu and tofu cottage or ricotta cheese, p. 122). Greek moussaka (with

tofu topping, p. 128-9). Sweet and sour tempeh (p. 133). Southern fried tofu (p. 134). Tofu Swiss steak (p. 135). Tempeh stew (p. 136). Thanksgiving day tofu (p. 137). Tofu Jamaican run down stew (p. 138). Tofu paneer (p. 139). Seitan (p. 140-43). Seitan à la Normandie (p. 144). New England boiled dinner (with tofu or seitan, p. 145). Seitan Parmesan (with vegan cheese made with tofu, p. 147-48). San Francisco stir-fry (with seitan or tofu, p. 151). Berner platte (with protein accompaniments made with tofu and Soysage, p. 155-56). Vegan Béarnaise sauce (with silken tofu, p. 161). Miso sauce (p. 164-65). Tahini lemon sauce (with silken tofu, p. 165). Steamed kale with lemon miso sauce (p. 176).

In the dessert section, there is mention to tofu chocolate as an alternative to chocolate. Carob cake (with tofu chocolate, p. 217). Chocolate cream couscous cake (with filling made with silken tofu, p. 220). Silken tofu chocolate “cheesecake” (p. 221). Key lime shamrock torte (with silken tofu, p. 222). Raspberry sabayon sauce (with silken tofu, p. 232). Tofu chocolate “buttercream” icing (p. 234). Tofu chocolate ganache (p. 234-35). Mocha grain coffee (with any grain coffee substitute, cocoa, brown rice syrup, and soy milk, p. 238). Christmas soy nog (with soy milk and lecithin granules, p. 238).

The last section of the book, titled “The Culinary Olympics,” gives recipes that Brother Ron prepared while competing in these Olympics, starting in 1978. These Olympics are held every four years at Frankfurt, Germany, by the International Cooks Society. The American Culinary Federation is the U.S. organization that promotes the competition. “In 1978 I won a gold medal in the national competition, which qualified me to compete in the 1980 Culinary Olympics. In 1980 I founded the American natural foods team and, with this team, international competition to gain widespread competition for vegetarian cuisine. In that year, I became the first professional vegetarian chef to compete in the Olympics and win a medal for totally vegetarian foods. I also competed in 1984 and 1988... My team won bronze and silver medals in all three years that we entered the competition.” Soy-related recipes dominate this section, and include: Baked tofu pâtés (spinach, tarragon, or carrot, p. 241-42; won a bronze medal in 1984). Tofu and sea vegetable quenelles (beet, spinach, or carrot, p. 243-45; won a silver medal in 1988). New York cima roll (with tofu, p. 248-49; won a silver medal in 1988). Tofu seitan Wellington (p. 250-51; won a bronze medal in 1984). Vegan London broil (with seitan, miso, and tamari, p. 251-52; won a bronze medal in 1984). Southern blackened tempeh with tomato-apricot-ginger coulis (p. 253-54; won a silver medal in 1988). Carrot cream in squash shell (with soy milk and tofu, p. 255-56; won a silver medal in 1988). Chocolate squash confection (with Tofu Chocolate Ganache, p. 259-60; won a silver medal in 1988). Address: O.F.M., St. Anthony’s Shrine.

3567. Stepaniak, Joanne; Hecker, Kathy. 1991. Ecological cooking: Recipes to save the planet. Mobilization for Animals, Pennsylvania, Inc., P.O. Box 99762, Pittsburg, PA 15233. 228 p. Index. 23 cm.

• **Summary:** This vegan cookbook contains 500 recipes, including many using tofu, tempeh, miso, and soy milk. Almost all the recipes are uncomplicated, and the directions are short and simple to follow. Many can be prepared quickly. Sales and proceeds benefit Mobilization for Animals. Reviewed by Debra Wasserman in *Vegetarian Times* (May 1992, p. 97).

Note: The author self-published this book for a while, then the Book Publishing Co. in Summertown, Tennessee, became the publisher. Address: Pittsburg, Pennsylvania. Phone: 412-232-5106.

3568. Spear, Bill. 1991. Soyfoods in Yugoslavia (Interview). *SoyaScan Notes*. Sept. 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bill just returned from a 1-week macrobiotic summer camp at Kumrovec, Croatia, Yugoslavia; 75 people plus staff attended—during the current civil war. Last year he attended the same event, along with 600 other people. There are presently an estimated 5,000 to 10,000 macrobiotic people in Croatia. The major activity is in Zagreb. Croatia has most of the money and industrial productivity in Yugoslavia and that is a major reason that Croatians want independence. The Serbians are a relatively poor majority.

There are two commercial and at least three home-based soyfoods manufacturers in former Yugoslavia. The best contact is Ivan Jugovac (about 40 years old), owner of Anyo located at Skolska Ulica 43A, 51215 Kastav (near Rijeka), Croatia, Yugoslavia. Ivan knows the names of the other soyfoods companies in Yugoslavia and is part of a loosely-knit soycrafters network there. Anyo, which started about 2-3 years ago, makes 250-300 kg/week of tofu (100 kg/day in 4 or 5 batches) and 150-200 kg/week of seitan. From the tofu they also make smoked tofu, grilled tofu, deep-fried tofu, and tofu spread (with okara). The tofu is made in a 100-liter steam jacketed kettle and the nigari is imported from Japan. Their soybeans (which are not organically grown) come from Becej (pronounced BECH-ay) in Serbia, Yugoslavia. The business is doing well. Ivan makes natto for his personal use. He wants to start making miso and amazake commercially, and is looking for sources of koji and koji starter.

A second soyfoods shop in Belgrade, Serbia (name, address, and contact person unknown) makes tofu, seitan, and tempeh on about the same scale as Anyo. It probably started at about the same time as Anyo. There are 1-2 small tofu shops in Zagreb, and one in Novi Sad, Serbia; in each, the tofu is made in a home kitchen. In Slovenia, a tofu company that will be the largest in Yugoslavia is nearly

ready to begin operation in Slovenia, but the current civil war has delayed their opening. They plan to make 100 kg/day of tofu.

The man who knows the most about soyfoods in Yugoslavia is Zlatko Pejic, a peace activist who is president of the Society for the Improvement of the Quality of Life and head of the macrobiotic community in Zagreb. His wife is a cooking teacher. He invited Bill to Yugoslavia, has been to the USA, and lectures throughout Yugoslavia. He has visited most of the soyfoods companies in Yugoslavia, has a fax, and like Ivan speaks pretty good English.

Basically all of the interest in soyfoods in Yugoslavia grew out of macrobiotics. Several of the people who started companies attended the Kushi Institute in London. Two years ago, others attended the International Macrobiotic Institute in Kiental, Switzerland. In both places there are classes in soyfoods production (miso, tempeh, tofu, etc.) taught by various macrobiotic teachers such as Roberto Marrochhesi. Most companies have some books from Soyfoods Center. Bill is still actively affiliated with The Bridge in Connecticut and is a teacher of macrobiotics. Address: North Road, Bantam, Connecticut 06750. Phone: 203-567-0554.

3569. *SoyaScan Notes*. 1991. The concepts of alkaline (*arukari-sei*) and acidic (*sansei*) foods in Japan (Overview). Sept. 20. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** It is common knowledge among most typical Japanese that foods can generally be classified along a continuum that ranges from alkaline at one end to neutral (*chusei*) in the middle, to acidic at the other end. Alkaline foods (those with an alkaline ash) are generally considered to promote and protect health. It is widely believed that one should try to keep one's blood a little on the alkaline side of neutral. According to E.C. Grey's *The Food of Japan* (League of Nations, 1928) and *Inshoku Jiten (Encyclopedia of food and drink)*; Motoyama 1958; see arukari) and to discussions with numerous Japanese, well-known alkaline foods are as follows. Each food is followed by an "alkaline value" in parentheses taken from Grey (1928, p. 56-111; the "alkalinity is due to lime and magnesia"): sea vegetables including kombu (88.9), wakame (55.8), nori (35.3); black soybeans (40.2), yellow soybeans (38.1), soyfoods (and Soyfoods Center) including yuba (25.6), kinako roasted soy flour (25.2), Hamana natto (Hamanatto 24.8), natto (19.3), green soybeans (ao-daizu, dry; 17.8), Misozuke (vegetables preserved in miso, 16.3), shoyu (14.3); red miso (11.5), okara (9.0), white miso (8.1), edamamé (green vegetable soybeans, 5.8), aburage deep-fried tofu pouched (6.7), soy milk (3.8), tofu (1.1), shiitake mushrooms (41.0), azuki beans (27.0), umeboshi salt plums (3.1), dried fruits including dried fig (46.8), dried persimmon (21.3), raisins (15.3), cheese (18.0), most fresh fruits including yuzu

(citron, 11.7), buckwheat (7.0), fig (6.3), lemon (5.9), banana (4.6), mikan (mandarin orange, 4.0); root vegetables including potatoes (13.9), tororo imo (11.5), daikon radish (5.0); most green vegetables such as komatsuna cabbage (11.3), or daikon leaves (10.9), pickled vegetables such as takuan (14.6). Alkaline beverages or liquids include tea, coffee, dairy milk (2.6), condensed milk (8.0), powdered milk (26.6), grape wines, and vinegar.

Acidic foods, which the Japanese believe should be used in moderation, include: white sugar (0), mizuame [rice syrup] (0), chocolate (3.0) and other sweet foods, eggs (2.8), flesh foods including chicken (5.2), pork (5.2), beef (5.1), fresh fish (avg. 5.3), alcoholic beverages including amazake (0), beer (0), sake (0); animal fats including butter (1.6), margarine (0.9).

Many Japanese find that acidic foods, when consumed in excess, give them acid indigestion. Neutral foods include rice (0.5-2.9), wheat (3.5-6.6), barley (2.7-4.6), and wheat gluten (1.0).

Note that this classification system is unrelated to the yin-yang continuum used by macrobiotics; most Japanese are unaware of macrobiotics. The latter, for example, considers meat to be yang (alkaline), whereas wines, fruits, and milk are yin (acidic).

3570. South River Miso Co. Inc. 1991. Catalog no. 10 [Mail order]. South River Farm, Conway, MA 01341. 8 p. Sept. 21. 28 cm. [3 ref]

• **Summary:** "Since 1979. Made by the Elwell Family. Authentic farmhouse style miso. Made from 100% organic ingredients. Processed and packed entirely by hand. Unpasteurized, full of life." Black ink on tan paper with many illustrations. Contains an introduction and 3 sections titled: What is miso?, What is koji?, and Amazing amazake. There is a recipe for Winter Day Miso Soup. The company now sells the following types of miso: 1. Hearty varieties: Three year barley, black soy barley, brown rice miso, dandelion-leek miso. 2. Sweet tasting, mellow miso varieties: Sweet tasting brown rice miso (formerly named Mellow brown rice miso), Chick pea miso. 3. More sweet tasting types: Golden millet miso, Aduki miso, Kasha (buckwheat) miso. Address: Conway, Massachusetts. Phone: (413) 369-4057.

3571. Gerner, Bob. 1991. The origins and early history of Westbrae Natural Foods in California, through December 1971 (Interview). *SoyaScan Notes*. Sept. 29 and Oct. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Westbrae started as a natural foods distribution company in July 1970 before it opened a retail store. Bob Gerner worked as the manager of the coffee house at the University of California at Davis. They had their own baker (a woman), and they baked everything from scratch. She was interested in natural foods, and Bob was starting to get

interested. Occasionally he would visit the Sacramento Real Food Company (1500 Q St., Sacramento). Bob's girlfriend, Kristin Brun, who lived in the Santa Cruz mountains, taught Bob how to make granola and bread. So the people at the coffee house at Davis started make and serve granola there. At one point, Bob got so interested in natural foods that he decided he wanted to go into the new field. The baker was also interested, so they decided to open a store, even though they had no money. Bob quit his job as manager of the coffee house but stayed on as a cook. He met four other couples who planned to open natural foods retail stores, so they joined together.

In May 1970 the ten partners (none of whom had any money) opened the Natural Food Works on Olive Drive in Sacramento. (It still exists, though on G Street.) The store opened during final exams of Bob's senior year, so he skipped his last 3 finals and never graduated. Bob was chosen to be manager, since he was the only partner with any business experience. One of the store's main products was granola, which Bob made at night on the stove in the coffee house at Cal Davis (on the sly, from midnight until 6 o'clock in the morning).

Buying the ingredients for granola in bulk and merchandise for the store from suppliers involved a lengthy truck route. Since Bob was manager of the store and no one else wanted to do the route, Bob was elected. He drove a truck weekly to the San Francisco area and bought rolled oats from The Food Mill in Oakland, cashew nuts from Hirschfelder in San Francisco, 2 barrels of honey from Les Garabaldi (a bee-keeper in Canyon), miso and soy sauce from Chico-San in Chico, apple juice from Heinke's in Paradise. Then he stored all the ingredients in his room that he rented in a farmhouse in Dixon, a farm community near Davis. He weighed and bagged the ingredients in his room.

One of the partners suggested that they start a small farm or garden. So on a ½-1-acre plot behind a church he planted an organic garden and grew vegetables for the store. But the store couldn't sell them all, so Bob decided to try to distribute them and granola to other young natural food stores in Berkeley.

In late June 1970 Bob attended the founding meeting of Organic Merchants (OM), held outdoors on the side of Mt. Shasta. OM was the first trade association for natural food retailers on the West Coast and the first organic trade association.

In July 1970 Bob started distributing granola, fresh vegetables, and Heinke's apple juice in the company truck. He delivered these foods to various natural food retail stores in Berkeley: Wholly Foods (2999 Shattuck Ave. at Ashby), Good Natured Foods (on Solano), the Granary (and a macrobiotic retail food store on Shattuck near Vine), and Ma Revolution (on Telegraph).

Soon his granola ingredients and other items were added to his line (these were his sole worldly possessions): 2,000

lb dried organic pears (dried on a farmer's lot while camping out in the Santa Cruz mountains), fresh apples, fresh tomatoes, etc. Later, when Bob got too busy, Heinke's delivered their juice to his sister Margaret's house in El Sobrante, and he used her house as a juice warehouse.

Originally the distribution company had no name; it was Bob Gerner doing business as Bob Gerner with no business license. It was strictly cash and carry.

Some of the training in how to run the store was provided by Fred Rohé of New Age Natural Foods in San Francisco in early 1970. One of the partners went to work at Rohe's store, where he learned many of the basics, such as how to stock shelves, mark-up prices, etc. Fred ran this free training program, which took several days, for anyone who wanted to open a natural food store.

After a few hectic weeks as manager of this unwieldy, undercapitalized 10-person partnership, Bob decided to quit. He could see it wouldn't work. But he still kept working for them until someone else volunteered to do the truck run free of charge.

Being out of a job, Bob decided to start a new natural foods company with a smaller number of closer friends—though he still had no money. Bob's sister (Margaret), and his brother-in-law (Bob Ortiz) got together and founded the new company. Kristin was not interested in becoming a partner at that time. Bob found a truck. Ortiz, who was a teacher and a mechanic, retired as a teacher getting \$500 from his pension fund, bought the truck for \$100, and became the truck driver. Originally the company was run out of Margaret and Bob Ortiz's home. While looking for a warehouse and granola factory, the 3 partners found a vacant market (originally a small Safeway supermarket, more recently a market with a Chinese tenant, but it had had no tenant for 18 months) at 1336 Gilman St. in Berkeley. They signed the lease on 10 Aug. 1970. But the building was zoned for a retail store, so they opened a retail store in the first 12 feet of the building, and used the other 80% for a kitchen and warehouse for their wholesale business. The company still had no name, and in fact it did not have enough money to take down the sign on the building that said "Westbrae." So, what the heck, they decided to call the company "Westbrae Natural Foods." On 2 Feb. 1971 the store opened for business and got a business license.

Companies that began distributing natural foods in northern California before or at about the same time as Bob Gerner were Landstrom and K&L (Kahan & Lessin; both big, old-line distributors of health foods and supplements, from Los Angeles, started in the 1930s), The Food Mill in Oakland (1930s), Chico-San in Chico (about 1965; Bob bought their Spiral Foods soy sauce and miso in bulk wooden tubs from the Osoba Noodle Nook Restaurant [2505 Hearst in Berkeley] and from a garage in San Francisco), and New-Age Natural Foods in San Francisco (Fred Rohé; he started retailing in 1965-67, then began

distributing in the early 1970s). Bob recalls that he would go to New-Age Natural Foods, buy many bulk staples such as 50-pound sacks of whole grains (wheat or rye berries) and beans from Arrowhead Mills. Rohé sold these to Bob and others like him from his retail store at wholesale prices. Westbrae had a flour mill to grind its own fresh flour. By about early 1971 Fred opened a separate natural foods wholesale facility (named New Age Distributing) in San Jose. At first they wholesaled only produce. Then they branched out into dry goods, working with Dennis Morgan. The company changed its name to The Well in about 1972-73, then later it was renamed Pure and Simple. Address: Owner, Berkeley Natural Grocery Co., 1336 Gilman St., Berkeley, California 94706. Phone: 415-526-2456.

3572. Gray, Sylvia Ruth. 1991. Re: Vitamin B-12. Letter to William Shurtleff at Soyfoods Center, Sept. 29. 2 p. typed.

• **Summary:** Sylvia initiated the vitamin B-12 project in 1988 after reading various scientific studies showing low levels of B-12 in common macrobiotic and vegetarian foods. "At present, more than fifty vitamin B-12 food assays have been completed on 12 vegetarian cobalamin sources and 12 animal product sources. Seven cobalt assays have also been completed. A very recent assay on the brain of range fed/finished beef showed vitamin B-12 content of 1/46th of previously norms for this organ." Assays cost \$85 each.

"In my estimate, the concentration of toxic and/or antinutritive factors in all beans and bean products (with the exception of very aged products such as miso and shoyu) renders them 'iffy+' for daily use." A color photo of Sylvia, her youngest daughter, and two granddaughters is enclosed. Address: Strictly Macrobiotics and The Vitamin B-12 Project, 315 First Ave., Salt Lake City, Utah 84103. Phone: 801-521-7936.

3573. Kudou, Shigemitsu; Fleury, Y.; Welti, D.; Magnolato, D.; Uchida, T.; Kitamura, K.; Okubo, K. 1991. Malonyl isoflavone glycosides in soybean seeds (*Glycine max* Merrill). *Agricultural and Biological Chemistry* 55(9):2227-33. Sept. [21 ref]

• **Summary:** Isoflavone concentration in the soybean hypocotyl is about 5-6 times higher than in the cotyledons. Nine kinds of isoflavone glycosides were isolated from the hypocotyls of soybean seeds. Three kinds were proved to be malonylated soybean isoflavones. The principal conjugated forms of isoflavones in the soybean hypocotyl were 6"-O-malonylglucosides. "All of the isoflavone components produced intensely undesirable taste effects such as bitter, astringent and dry mouth feeling."

A graph (p. 2229) shows "Isoflavone accumulation during maturation of Maple Arrow soybean seeds." The accumulation of daidzin, genistin, glycitin and their corresponding malonylated forms in immature seeds during

development began at about 35 days after flowering and increased until about 60 days after flowering. Malonylgénistin and the genistin content increased during the late development of the beans, whereas malonyldaidzin and daidzin accumulated throughout the whole period. Address: 1&5. Kanesa Miso Co., Ltd., 202 Hamada, Tamagawa, Aomori 030, Japan; 2-4. Research Centre, Nestlé Ltd., P.O. Box 44, Vers-Chez-Les-Blanc, CH-1000 Lausanne 26, Switzerland.

3574. Nishimoto, Miyoko. 1991. *The now and Zen epicure: Gourmet cuisine for the enlightened palate*. Summertown, Tennessee: The Book Publishing Co. 250 p. Color photos. Index. 24 x 21 cm.

• **Summary:** This is a gorgeous, delightful vegan cookbook (though it uses honey), loaded with color photos. Most recipes, designed for entertaining, embody an atmosphere of elegance with a sense of fun, capturing the best of traditional European cuisine, offering gourmet recipes with an element of Japanese style, simplicity, and flavor. Each recipe is accompanied by a nutritional analysis, and most are remarkably low in fat.

The author is founder and owner of the Now & Zen Bakery (1838 Golden Gate Ave., San Francisco, CA 94115) which is well known for its tofu cheesecakes and other delights, and which sells dried okara. She is also a jazz vocalist and vegetarian chef. Born in Japan to a Japanese mother and an American father, she moved to Mill Valley, California, with her parents when she was age 7 and became a vegetarian at age 12. A photo on the rear cover shows Miyoko Nishimoto. She shows great virtuosity in the use of soyfoods—and wheat gluten. The section on ingredients contains excellent, detailed information on miso, nut milks and creams (almond milk and cashew milk, which the author prefers for some uses to soymilk), agar, okara, soy milk and soy cream, soy sauce, soy sour cream, soy yogurt, tamari, tempeh, tofu, frozen tofu, and pressed tofu.

Soy-related recipes include: Tofu “cheese” (p. 32). Tofu “boursin” or herb-garlic cheese ball (p. 33). Tofu “feta” cheese (p. 35). Tofu cream cheese spread with herbs (p. 36). Eggplant and tofu pâté (p. 51). Smoked tofu, mushroom, and garlic canapés (p. 53). Tofu “mornay” sauce (p. 65). Tofu aioli (p. 82). An introduction to quick and tasty tofu cream soups is given on p. 108. Each of the following cream soups contain tofu. Cream of pumpkin soup (p. 109). Cream of corn soup (p. 110). Cream of green pea soup (p. 111).

Mediterranean eggplant and tofu gratin (p. 115). Tofu burgers suprême (p. 118). Creamy tempeh curry (p. 119). Tempeh mexicali (p. 121). Sweet and sour tofu (p. 122-23). Whole cabbage with hearty tempeh stuffing (p. 124-25). Herbed soybean casserole or stew (p. 132). Savory tempeh and vegetable stew (p. 134-35). Tofu bourguignon (p. 138-39). Homemade tofu pasta (p. 142-43). Ginger tempeh with

green peppers (p. 145). Homemade gluten, Tempeh and gluten burgers, and the Great gluten turkey with dressing (p. 150-160). Tempura tofu (p. 163). Marinated tofu (p. 164). Smoky marinated tofu (p. 165). Believable bacon (with tofu, p. 166). Beans and “bacon” casserole (with tofu, p. 167). Orange-soy dressing (p. 177). Tofu sour cream (p. 179). Tofu mayonnaise (p. 180). Tofu thousand island dressing (p. 182). Tropical coconut banana ice cream or sauce (with tofu, p. 212). A different pumpkin ice cream (with tofu, p. 213). Italian cheese-less cake (with tofu, p. 216). Cashew cheesecake (with tofu, p. 217). Tofu crème (p. 218).

For a lengthy and very positive review of this book by Carol Flinders, see *Vegetarian Times* Nov. 1991, p. 86-87. Address: San Francisco, California.

3575. South River Miso Co. Inc. 1991. *Cooking at home with South River Miso* (Leaflet). Conway, Massachusetts. 10 panels. Front and back. 14 x 10 cm. [6 ref]

• **Summary:** Printed with brown ink printed on tan paper, this leaflet contains 11 recipes, some interesting information about miso, and several illustrations. Address: South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

3576. South River Miso Co. Inc. 1991. *Storing miso at home* (Leaflet). Conway, Massachusetts. 6 panels. Front and back. 14 x 10 cm. [6 ref]

• **Summary:** Printed with purple ink on gray paper, this leaflet describes how to store different amounts of miso at home, and deals with the problem of mold growth. Contains 4 illustrations from *The Book of Miso*, by Shurtleff & Aoyagi. Address: South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

3577. Kennedy, J. Robert. 1991. *History of Chico-San's distribution and import operations* (Interview). *SoyaScan Notes*. Oct. 3. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Chico-San never really developed its own distribution company. It used other established distributors, such as Balanced Foods in New Jersey, K&L (Kahan & Lessin) in Los Angeles, Landstrom in San Francisco, and Health Foods Incorporated in Chicago. “We had a tough time getting started in selling macrobiotic foods. Chico-San also sold a lot of macrobiotic foods through its mail-order service because most of the large distributors only wanted the best-selling items such as rice cakes, soy sauce, and sesame salt; they wouldn't take the complete macrobiotic line.” In late 1962, shortly after the company was established, Chico-San got a few vans and began a few small routes down to the San Francisco Bay Area and as far north as Redding, distributing 2 types of whole-grain bread (a rice loaf and an unleavened whole-wheat bread) and

gluten-nut crackers to the Berkeley Co-op and established (old-line) health food stores. The Berkeley Co-op was one of the first to carry the full line of macrobiotic products. These routes continued until about 1964-65.

Chico-San's first really successful product was rice cakes. They were introduced in 1963 but initially the big distributors took showed interest. That changed starting in about 1964 when a new generation of rice cake machines began to make a better product and a few of the big distributors started to carry them. By 1965 Chico-San's rice cakes and other popular products were being sold at more than 150 California outlets. It was the national popularity of the rice cakes that kept Chico-San from developing its own distribution company, and relying instead on larges established distributors—and later brokers.

By about 1966-1967 rice cakes and rice chips (*senbei*) were beginning to cut a wedge into the mass market nationwide, so Chico-San created the Spiral Foods brand for these mainstream products, keeping the Chico-San brand for the health food market.

Concerning imports of miso and soy sauce from Japan, Chico-San first imported directly from George Ohsawa; he located the manufacturer, put the order together, and shipped it himself. Then came Nippon C.I., which was started by George and some of his disciples in Tokyo, but it didn't last very long. In 1966 Chico-San started importing from Muso Shokuhin in Osaka. But after Muso started selling a lot to Erewhon (which became a major competitor for Chico-San), Bob felt that product quality began to decline, so he began to do all his importing from Ohsawa Japan, a company that was developed by George's sister-in-law (Lima Ohsawa's sister), Flora Tanaka, at George's request. Bob felt the quality of products from Ohsawa Japan was better than from Muso, but the prices were higher and the company was not quite as professional in its business dealings.

Concerning the sale of Chico-San to Heinz, Bob is overall not very happy with the outcome. Granted, rice cakes are now much more widely known and sold in supermarkets, but the loss of Chico-San "put a big hole in the process of selling macrobiotic foods." Bob and Herman Aihara bought back the macrobiotic line from Heinz and created Ohsawa America in Chico to try to sell it. Early general managers were Marty Roth, then Lane Seiger (who had previously worked for Bob at Chico-San). But the volume was not there on relatively few products to sustain a company profitably and eventually the company ran up debts of \$300,000. At that point Bob basically gave the company to Sierra Natural Foods in Brisbane, California. Sierra had several thousand products; they only paid for the inventory. Bob is now working to develop new products from rice—such as a rice-crust pizza and crackers. Address: Chico, California. Phone: 916-891-0970.

3578. Ebine, Hideo. 1991. Nutritive value and physiological function of miso. In: K. Okubo, ed. 1991. Japan part of Proceedings of the International Conference on Soybean Processing and Utilization. 130 p. See p. 89-94. [17 ref]
 • **Summary:** In 1989, approximately 599,000 tonnes of miso were produced commercially in Japan; of this, 80% as rice miso, 10% barley miso, and 10% soybean miso. In addition, an estimated 40,000 tonnes of miso were made at home. Per capita consumption was 5.2 kg/year. 90% or more of all miso in Japan is used as an ingredient in soups. Table 1 shows the 3 basic varieties of miso (rice, barley, and soybean), the 8 subvarieties based on taste and color, and the principal areas where each subvariety is produced. Discusses the basic process for making miso, the chemical composition, fatty acid composition and vitamin and mineral composition of 5 basic types, plus the amino acid composition of 4 basic types. Research is summarized which indicates that miso consumption reduces gastric cancer mortality (Hirayama 1984), miso contains an antimutagen against benzo(a)pyrene and trp-p-1 (Kitamura 1984), miso reduces hepatic [liver] tumors caused by neutron radiation of mice (Ita et al. 1989), a miso component depresses tumor formation by Sarcoma-180 inoculated in mice (Miyazaki 1989), salt-free miso has a cholesterol-lowering effect (Horii et al. 1990), and regular miso has antioxidative activity (H. Kato, 1989). Address: Central Miso Research Inst., Shinkawa 1-26-19, Chuo-ku, Tokyo 104, Japan.

3579. **Product Name:** [Tempast {Vegetarian Tempeh Spread}].

Foreign Name: Tempast.

Manufacturer's Name: Lima Foods (Marketer).

Manufacturer's Address: Edgar Gevaertdreef 10, B-9830 Sint-Martens-Latem, Belgium.

Date of Introduction: 1991. October.

Ingredients: Water, tempeh*, sunflower seeds*, whole meal bread*, sunflower oil*, miso, free range eggs, onion*, pumpkin*, dulse (seaweed), ume [plum] vinegar, sea-salt, herbs. * = Organically grown.

Wt/Vol., Packaging, Price: 150 gm glass jar. Retails for DM 6.70 (10/91, Bremen, Germany).

How Stored: Shelf stable; refrigerate after opening.

New Product-Documentation: Label sent by Anthony Marrese of Bremen, Germany. 1991. Oct. 7. 9.25 by 1 inches. Paper. Black on light orange. Color photo of the spread on a slice of bread, topped with a slice of radish and cucumber. CINAB organic certification symbol. Nature et Progres organic certification symbol. Ingredients are listed in Dutch, French, German, and English.

3580. **Product Name:** [Tofu, Tofu Mayonnaise, Hot Squash Pies with Miso-Tofu Topping, Tofu Tart (with

Cocoa or Carob), Tofu Salad with Tahini, Vegetarian Spring Rolls (Filled with Rice, Tofu & Soy Sprouts), Seitan].

Foreign Name: Tofou, Tourte au Giraumon (Nappage Miso, Tofou et Umé), Tarte au Tofou (cacao-pays, ou fruits de saison), Salade de Tofou (Tofou, crème de Sésame, tamari, aromates), Nems, Seitan.

Manufacturer's Name: Pascal Pinault.

Manufacturer's Address: "Caplet," 97226 Morne Vert, Martinique, French West Indies 0033. Phone: +59 6 55 56 57.

Date of Introduction: 1991. October.

New Product–Documentation: Talk with Pascal's sister, Marie, who calls from Orange County, California, to enquire about a source of tempeh starter for Pascal. 1993. March 17. Pascal has been very involved with soyfoods for many years. He has been making tofu and tofu products out of his home in Martinique for several years; he sells these mostly to restaurants. He would like to start making tempeh.

Letter, price list, and resume sent by Pascal Pinault at the above address. 1993. April 2. In Martinique he has been making an average of 12 to 20 pounds of tofu every week since Oct. 1991. His business has no formal name. He uses most of the tofu he makes to produce second generation products such as tofu mayonnaise, hot squash pies with miso-tofu topping, tofu & cocoa (or carob) sweet pie, tofu salad, spring rolls (*Nems*). For details see entry for the letter.

Note: This is the earliest known commercial soy product made in Martinique or any French Overseas Department.

3581. Saio, Kyoko; Watanabe, Tokuji. 1991. Food use of soybeans in Japan. In: K. Okubo, ed. 1991. Japan part of Proceedings of the International Conference on Soybean Processing and Utilization. 130 p. See p. 35.

• **Summary:** In 1988 some 47,000,000 tons of soybeans were consumed in Japan; 79% of this amount was used to make edible and 19% (8,900,000 tons) was used for foods. In the process of making edible soy oil, more than 3,000,000 tons of defatted soybean meal were produced; 89% of this was used as livestock and poultry feeds, and 12% was used in foods (mostly for soy sauce, but with some for soy protein products and others). There has been a rapid increase in consumption of edible oil and defatted meal in Japan, accompanied by an increase in animal protein in the diet.

In 1988 Japan produced only 290,000 tons of soybeans domestically, and most of this amount was used for foods, especially tofu (60%), miso (24%), natto (9%), and other foods (dried-frozen tofu, yuba, kinako, etc.). The consumption of these foods have risen proportionally to the increase in Japan's population, which means that over all per capita consumption is static.

A recent survey conducted in Japan showed that 82% of Japanese ate soyfoods more than 3 times/week, and that Japanese people had a rather good image of these foods,

describing them as healthy, natural, tasty, good for daily use, inexpensive, and delicious.

Japanese enjoy both traditional and modern soyfoods. The technologies for making "Vegetable Protein Products" from soybean meal have been introduced from the USA since 1970, but these have been modified and adapted to suit Japan's tastes and needs. "The importance of soybean foods in Japanese dietary life cannot be too much emphasized. We love them as traditional but also new foods." Address: 1. Research Council Secretariat, MAFF; 2. Tokyo Metropolitan Food Technological Research Center. K. Saio is presently at: National Food Research Inst., MAFF, 2-1-2, Kannondai, Tsukuba 305, Japan.

3582. Smoky Mountain Natural Foods. 1991. Fall/Winter 1991. Natural foods price list [Mail order catalog]. 15 Aspen Court, Asheville, North Carolina 28806. 23 p. 28 cm.

• **Summary:** This is a "Catalogue of natural foods, body care and home products for a healthier, more natural way of life." This mail-order company, which began operation in Jan. 1991, sells products made by other companies; it does not do any manufacturing and does not have its own brand on any products. Their specialty is macrobiotics products, and they buy their Japanese imports from Macrobiotic Wholesale Co. They sell miso (Miso Master American Miso, Mitoku Japanese miso, Traditional Foods domestic miso, and instant miso soups from Edward & Sons), black soybeans and azuki beans (organic are grown in the USA, non-organic from Hokkaido), sea vegetables, soy sauce (San-J shoyu and tamari, Mansan tamari, Sakae shoyu, Johsen shoyu), San-J teriyaki sauce and Szechuan sauce, Nasoya dressings and Nayonaise, Natto miso chutney, Sesame miso sprinkle, Tekka condiment (jar or bag), jinenjo tekka, MMB [Mitoku Macrobiotic, a premium brand] organic farmhouse tekka, seitan, MMB traditional dried tofu, Tofu burger, scrambler, and stroganoff, Sweet Cloud sesame miso munchie, Sweet life miso candy.

John Troy is not connected to this company, nor is John Belleme; John is the wizard, and now he makes sauces from the Wizard's Cauldron. He also works with John Belleme at Traditional Foods making seitan. Address: North Carolina. Phone: 1-800-926-0974.

3583. **Product Name:** Kasha Miso [With Buckwheat Koji].

Manufacturer's Name: South River Miso Co. Inc.

Manufacturer's Address: South River Farm, Conway, MA 01341. Phone: 413-369-4057.

Date of Introduction: 1991. October.

Ingredients: Deep well water, organically grown buckwheat, organically grown soybeans, sun-dried sea salt, koji culture. Organically grown and processed in accordance with Section 26569.11 of the California Health and Safety Code.

Wt/Vol., Packaging, Price: 1 lb plastic tub.

How Stored: Refrigerated.

New Product–Documentation: Talk with then Label sent by Christian Elwell. 1992. March 13. Soybeans are a major ingredient in this miso, but the koji is made with buckwheat. His company sold 300-400 lb. He started selling this miso in Oct. 1991. Label. 3.5 by 2 inches. Black on white. Self adhesive. “100% organic ingredients. Unpasteurized. Please refrigerate.” There is a statement about traditional miso making signed by Christian and Gaella Elwell, a recipe for everyday miso soup, and an illustration of a silhouette of a mother handing a bowl of soup to her son seated across the table.

3584. **Product Name:** Meat of Wheat Sun Burgers, Grilled Burgers, Chicken Style, Sausage Style, Hearty Original (Seitan Loaf), or Chicken Style Chili.

Manufacturer’s Name: Ivy Foods.

Manufacturer’s Address: Office: 7613 S. Prospector Dr., Salt Lake City, UT 84121. Phone: 801-943-7664. Fax: 801-943-7311.

Date of Introduction: 1991. November.

Ingredients: Sun Burger: Wheat gluten, brown rice, tamari, miso, onion, garlic, lemon juice, bean flour [white bean, black bean, garbanzo], yeast, flour, walnuts, vegetable oil [canola oil], xanthan gum, spices and natural seasonings.

Wt/Vol., Packaging, Price: 16 oz plastic bag inside a paperboard box.

How Stored: Refrigerated.

Nutrition: Per 98 gm.: Calories 221, protein 26 gm, carbohydrate 28 gm, fat 2 gm, cholesterol 0 mg, sodium 277 mg.

New Product–Documentation: Talk with Goldie Caughlan of Puget Consumers Co-op in Seattle. 1992. Feb. 7. The company is selling gluten-based products under two trademarks: Wheat Meat and Meat of Wheat. Ivy Foods, the maker, is a member of Ivy International. Some of the products are of excellent quality. The company, a new company, will be showing the products shortly in Tacoma, and then at Anaheim. They were at the Anaheim show in early 1991 scoping out the market. She is not sure whether or not they have any products for sale yet. They also seem to be selling some Worthington products (Morningstar Farms line).

Talk with Mira Blue Machlis (pronounced MAK-liss) of Ivy Foods. 1992. Feb. 7. She and her husband, Mark, own this company. Mark has been in the restaurant business all his life, and his father originally owned all the Farrel’s Ice Cream parlors in the northwest. Their company introduced their products in 1991 at Anaheim as Wheat Meat. The government was 9 months late in letting them know that they couldn’t use that Trademark, because it was already registered. Their attorney did a trademark search and they got a copy of the trademark application and found out the person who owns the trademark. The trademark was

registered in about 1982 although it states that the owner first started making the product in 1977. The owner of the trademark no longer lives where the Trademark was registered, but they have his phone number. Their company is now test marketing 5 gluten-based products in Salt Lake City and the surrounding area. And these products are available by mail order. They plan to make a gluten-based chili, which Sysco, a restaurant supply company, is now carrying. Ivy Foods, a regular business, is a member (not a division) of Ivy International, a contemplative group. “We are considering opening the company up to be a cooperative after a while. We’re not in this to make money. We’re in this more to set up a model business. We make all of our decisions through contemplation. We try to do things a little more consciously, and to recognize that food really is a vehicle for nurturing. This country has kind of forgotten that. When we moved to Salt Lake City we opened up a little vegetarian restaurant, the Sun Bun Café, with 2 partners. Mark started developing the Sunburger for them. It became so popular that we decided to take it to the natural foods show at Anaheim to see what the response was. The response was overwhelming. Now we are ready.” Originally they considered food service operators their main potential customers, but now they hope to establish their base among natural food consumers. The little natural food store in town sells about 100 lb/week. After that base is stabilized, they plan to focus more on mainstreaming.

They have applied for a trademark on Meat of Wheat. They manufacture the products and their temporary plant will soon be moving to a new location.

Talk with Mark Machlis of Ivy Foods. 1992. Feb. 27. Most of their products (Chicken, Sausage, and 2 burgers) were first available for sale in Nov. 1991 at several stores in Salt Lake City. They now have a mail order program which allows them to ship their products in bulk as cheaply as they can put them in a store. This is good for people in outlying areas.

Products (Sun Burger, Chicken Style) with Labels sent by Mark Machlis. 1992. March. 4.25 by 6.5 by 2.75 inches. Paperboard box. Chocolate brown, red, white, green, gold, and tan. Sun Burger: Color photo of two patties on a wooden cutting board surrounded by grains and vegetables. “Vegetarian. Gourmet grain protein.” Contains three preparation hints. At the top of one side panel is a symbol of one green circle inside another. Between the two is written “Animal Free” in bold green letters. In the central circle is an illustration of a lion and a lamb.” The text reads: “As citizens of the world seek ecological balance, consciously made food choices open new options for Animals and Mankind... ‘The frog does not drink up the pond in which he lives’ (Buddhist Proverb).”

“Ivy International seeks to assist more conscious shoppers with an easily recognizable symbol which will clearly identify a vegan food product from lacto-ovo

vegetarian products. For the free brochure, 'More Conscious Nourishment,' write to: Ivy International, Brighton Star Route, Brighton, Utah 84121.

Soyfoods Center Product Evaluation: Sun Burger. Package design: Generally excellent, but the term "Wheat Meat" is a registered trademark owned by another person, and a refrigeration statement should appear more prominently. The ingredients terms "bean flour" and "vegetable oil" are ambiguous. Sensory evaluation: All liked the product (score of 8); good texture and flavor. Chicken Style: Sensory evaluation: Some liked the product (score of 8), but one person did not (2), saying it reminded her of bread. The pieces are like torn pieces of chicken.

Leaflet. "Meat of Wheat Gourmet Grain Protein." A black and white photo shows each of 4 products. "All natural ingredients. Low fat. No cholesterol. High protein. Animal free." Ingredients in other products: Chicken Style: Wheat gluten, bean flour, vegetable oil, spices and natural seasonings. Sausage Style: Same as Chicken Style. Hearty Original: Wheat gluten, tamari, onion, garlic, lemon juice, bean flour, yeast, walnuts, vegetable oil, spices and natural seasonings. In a chart titled "Nutritional Comparisons," each of 4 products is compared with its meat counterpart and a Worthington counterpart. In each case the Ivy Foods product has a lower percentage of calories from fat (9-17%).

Wheat of Meat recipes: Contains 8 recipes on the front and back of one sheet. The Chicken-Style Chili is available only for institutional and restaurant use.

Spot in Natural Foods Merchandiser. 1993. Sept. p. 76. Receive up to 20% off on Meat of Wheat Sausage Style.

Ad in Vegetarian Times. 1993. Sept. p. 50. "Meat of Wheat." Available in: Grilled Burgers, Sun Burgers, Chicken Style, Sausage Style, Hearty Original. Order from your health food store or call Ivy Foods direct at 1-800-280-1313. Gives a recipe for Meat of Wheat Magnificence.

Ad in Vegetarian Times. 1993. Oct. p. 32. "Meat of Wheat." "Sausage Style ideas: Pizza topping, manicotti & lasagne, tacos & burritos, tossed with pasta.

Ad in Vegetarian Times. 1993. Nov. p. 20. "Giving Thanks." Make a vegetarian "no Tom" turkey using Wheat of Meat Chicken Style.

3585. Teegarden, Ron. 1991. Founding and early history of the food co-op (in Ann Arbor, Michigan) that later became Eden Foods (Interview). *SoyaScan Notes*. Dec. 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ron ran a business named the Teegarden-Leabu General Store located in the basement of Marshall's Bookstore (that sold radical and anarchist literature), which was below the Herb David Guitar Studio at 209 South State Street a few blocks off Main Street in Ann Arbor. The store was financed by his partner and best friend Vic Leabu (pronounced luh-BOE then but luh-BUU now; it's Romanian not French), and Gloria Dunn worked there a lot.

A very kind black lady named Rose from Marshall's Bookstore rented Ron and Vic the space for \$50.00 a month because she liked the creative work they were doing and Marshall's was using the basement. The store sold antique clothing from the 1920s, art from local artists, and records; it was not a thrift store.

In about the summer of 1969 Ron and Gloria Dunn started a small food-buying co-op. The co-op was an eccentric, inventive, creative expression—and food was part of it. Co-ops were very new in those days. Within a few weeks some friends, who were also involved in macrobiotic cooking, joined the circle of people that were buying food together. These included Vic Leabu, Tim Redmond, Mark and Nancy Retzliff, and Bob Thorson. The informal group ordered food from Erewhon roughly 3-5 times; Gloria and Ron put together the orders which were probably pre-paid. When the food arrived, those who had participated in the order divided it up at the Teegarden-Leabu General Store. Ron Teegarden brought whole grains and miso into the co-op. Vic Leabu's influence gradually increased, while Gloria's declined. At the maximum, no more than 12 people were ever involved with the food co-op to which Ron belonged. It was never thought of as a business, it had no assets nor board of directors, and it never paid any money for the space that it used occasionally. It was just a bunch of people buying together.

When the co-op first started, there was only one little old-line health food store in Ann Arbor; the room was about 10 feet square and it did not sell natural or macrobiotic foods except very expensive brown rice in little bags.

To go back a bit: In early 1968 Ron felt he was becoming severely debilitated—from smoking pot (as was the fashion in those days) and the incessant pressure of being a varsity tennis player at Michigan on a full athletic scholarship and a pre-med student with a heavy academic load. In retrospect, he felt like he almost had chronic fatigue syndrome from burning the candle at every end. So he wrote a letter to George Ohsawa (not knowing that Ohsawa had died) asking for advice. He got a great letter back from Herman Aihara saying, in effect: "Eat miso soup and tekka every day, use them to help you give up coffee, and if you ever come to California, please come and stay with me."

Ron was deeply impressed with Herman's kind and generous offer to a person he didn't even know. So Ron sold his dope to buy an airplane ticket to California, and appeared at Herman's door in long hair and a beard. They took him in and within a week his life changed and has never gone back. "It was a revelation." He became thoroughly macrobiotic, quit drugs, and returned to Ann Arbor; thereafter his memory became clearer and he dropped everything to start what has become a lifelong interest in Oriental medicine and healing. Ron notes: "I am eternally grateful to Herman as great man." Shortly thereafter Ron and Iona, who had known each other for years

but ever gotten along well, were married; she then quit drugs, started a macrobiotic diet, joined the co-op, and soon became a fantastic cook. In 1971 she wrote a cookbook titled *Freedom through cooking: The macrobiotic way*.

Jimmy Silver was not a member of the co-op but he was a key influence because he had been macrobiotic for about 2 years, he had an advanced understanding of the philosophy and practice, he had long hair and was very hip, but he did not use drugs—which was very rare at that time. He was so healthy, his wife was very beautiful, and they were both very pure. He managed a rock group named the MC-5 whose motto was “Sex, drugs, and rock and roll.” People looked up to him as the leader of the macrobiotic movement in Ann Arbor. Ron doesn’t know where Jimmy got his food—he never came into the co-op. Nor does he recall that the co-op ever had a bank account and he does not see why they would have needed one.

But after 2-6 months the local health department wouldn’t let them keep grains in the basement of Marshall’s Bookstore, so they moved it to an upstairs location at 514 East William Street; that was when Bill Bolduc and Tim Redmond (with important guidance from Jimmy Silver and help from Mark Retzloff) began to organize the co-op and transform it into a company, which was first given a name—Eden Organic Foods. At that same time, Ron greatly decreased his involvement in the food co-op. He shopped at the co-op quite a bit but he does not recall ever working there. He was busy with his own store and he became motivated to try to finish school (he was in school but carrying a light load), then he wanted to move to California, so he and Iona sold their second-hand general store for \$300.

The question arises: When was Eden Foods established? Ron Teeguarden believes that the idea for Eden Foods was born in mid-1969 with the establishment of the original unnamed food co-op that ordered macrobiotic foods. “That was when the seed was planted, though it didn’t bloom until later that year when the name Eden was coined and a real macrobiotic food company came into existence.” Ron is happy to have been connected with this group and to helped to plant the seed that has become one of America’s most successful natural food and macrobiotic food companies—Eden Foods—but he feels that he deserves very little credit for what he did and he certainly does not want to be called “the founder.” “Most of the credit for establishing the company goes to Bill Bolduc.” He is now deeply involved with Chinese herbs, has just raised close to \$1 million, and plans to build an upscale store in Hollywood by late 1992, and eventually take his concept nationwide.

Follow-up talk with Ron. 1993. March 6. The time from 1967 to 1969 is quite hazy in his mind. It seems like another life and another world. “It’s a funny, fuzzy feeling to know that I was part of Eden and part of Erewhon when it first started.” Ron also started the Acupressure Center in

Berkeley. Ron did not follow developments at Eden Organic Foods after he left Ann Arbor in 1970. He does not recall having ever met Michael Potter, and he still does not recall that the food co-op ever had a bank account or that he ever signed a signature card for that account (yet “We probably did have a bank account; Maybe Vic got it and I might have signed it. Maybe that’s where the money went every day.”) And he has never been aware that the name “Eden” may have been derived from letters in his last name—but he is not sure that his recollections are correct. His new Herbal Emporium in Hollywood is coming along very nicely. Address: The Tea Garden, 1334 Abbott Kinney Blvd., Venice, California 90291. Phone: 310-450-0188.

3586. **Product Name:** [Sweet Simmered Miso, and Soy & Sunflowerseed Miso].

Foreign Name: Nerimiso, Sun-Miso.

Manufacturer’s Name: Soy & Rice.

Manufacturer’s Address: Via A. Canale 8/c, 10078 Venaria Reale (TO), Italy. Phone: 011-402-0380.

Date of Introduction: 1991. December.

New Product–Documentation: Letter and Labels sent by Bosco Franca and Garafola Carmelo of Soy & Rice. 1992. Feb. 4 by 2.75 inches. Black on white. Self adhesive. The logo is that developed by Mitoku which states in Japanese characters “*I Shoku Dô Gen*” (Medicine and food come from the same source, or Your food is your best medicine). Store at 4°C [39.2°F]. The company began to make this product on a test basis in about Dec. 1991. Both products are sweetened with corn malt (Malto di Mais).

3587. Tsuiseki: Iya-dôfu [Chase: Stone-dofu] 1991.

Television broadcast. Channel 26. California. Dec. 29. Sun. 7-7:30 P.M. [Jap]

• **Summary:** In 1185 when the Genji (Minamoto) clan defeated the Heike (Taira) in a famous naval battle on the Inland Sea, some of the Heike survivors fled to mountainous central part of Shikoku island, where their descendants still live today in the remote village of Iya. Shizue Fukushima, a 73-year-old woman, is the village tofu maker. Her Iya-dofu, also called *iwa-dofu* or *ishi-dofu* (meaning “stone tofu”), is much harder than most Japanese tofu. Made by hand, with nigari as a coagulant and without machines, it takes 3 times as long to make as most tofu. The curds are broken into small pieces by vigorous stirring and they are then pressed with a heavy weight for a long time. The finished tofu, dropped onto a stone floor from a height of 1 meter, remains unbroken. A favorite preparation in the village is named *Dekomawashi* derived from the words Dengaku plus *mawasu* (to turn). Slabs of tofu are skewered, and spread with miso. The base of each wooden skewer is then placed nearly upright into the hearth ashes around a fire. Small potatoes are also skewered on separate skewers.

When one side is nicely grilled, the tofu is turned so that the other side can also be grilled. Address: Japan.

3588. **Product Name:** Mitoku Goma-Muso Sesame-Miso Sprinkle.

Manufacturer's Name: Mitoku Co. Ltd. (Distributor).
Made in Japan.

Manufacturer's Address: C.P.O. Box 780, Tokyo 100-91, Japan. Phone: 33-201-6701.

Date of Introduction: 1991.

Ingredients: Barley miso (whole soybeans, barley, sea salt), toasted whole sesame seeds.

Wt/Vol., Packaging, Price: 2.8 oz (80 gm) plastic bag. Retails for \$2.39 (11/91, USA).

How Stored: Shelf stable.

New Product–Documentation: Product with Label purchased from Smoky Mountain Natural Foods, Asheville, North Carolina. 1991. Nov. 15. 3 by 3.5 inches. Self adhesive, on a 4.5 by 6.5 inch plastic bag. Reddish orange, yellow, and white. "A traditional Japanese condiment... Sprinkle freely on brown rice, vegetables and other favorite dishes to impart extra goodness, flavor and nutritiousness."

3589. **Product Name:** Sweet Life Candies: Miso Drops–Natural Brown Rice Malt Candy.

Manufacturer's Name: Mitoku Co. Ltd. (Distributor).
Made in Japan.

Manufacturer's Address: C.P.O. Box 780, Tokyo 100-91, Japan. Phone: 33-201-6701.

Date of Introduction: 1991.

Ingredients: Traditional rice malt (selected whole brown rice, organic sprouted barley, pure spring water), natural brown rice miso (whole soybeans, whole brown rice, water, sea salt).

Wt/Vol., Packaging, Price: 1.76 oz (50 gm) plastic bag. Retails for \$1.19 (11/91, USA).

How Stored: Shelf stable.

New Product–Documentation: Product with Label purchased from Smoky Mountain Natural Foods, Asheville, North Carolina. 1991. Nov. 15. 4.5 by 6 inches. Plastic bag. Gold and white on brown with see-through window. "The original sugar-free sweets from Japan... Sweet Life Candies contain no sugar or any artificial sweetening whatsoever; just the rich goodness of rice malt, with exciting natural flavors. The perfect taste treat for all the family." There are 12 other flavors in this natural candy line. The miso flavor is hard, not chewy.

3590. **Product Name:** Jinenjo Tekka: Tekka Condiment.

Manufacturer's Name: Mitoku Co. Ltd. (Distributor).
Made in Japan.

Manufacturer's Address: C.P.O. Box 780, Tokyo 100-91, Japan. Phone: 33-201-6701.

Date of Introduction: 1991.

Ingredients: Hatcho miso (whole soybeans, water, salt), jinenjo (wild mountain yam), lotus root, carrot, burdock, ginger, toasted sesame oil.

Wt/Vol., Packaging, Price: 3.5 oz (100 gm) plastic bag. Retails for \$5.99 (11/91, USA).

How Stored: Shelf stable.

New Product–Documentation: Product with Label purchased from Smoky Mountain Natural Foods, Asheville, North Carolina. 1991. Nov. 15. 3.5 by 2.75 inches. Self adhesive, on a 6 by 4.5 inch plastic bag. Blue on white.

3591. **Product Name:** Mitoku Natto Miso Chutney: Barley/Soybean/Vegetable Relish.

Manufacturer's Name: Mitoku Co. Ltd. (Distributor).
Made in Japan.

Manufacturer's Address: C.P.O. Box 780, Tokyo 100-91, Japan. Phone: 33-201-6701.

Date of Introduction: 1991.

Ingredients: Barley, whole soybeans, barley malt, kombu, ginger, water, sea salt.

Wt/Vol., Packaging, Price: 10.5 oz (300 gm) plastic crock. Retails for \$3.99 (11/91, USA).

How Stored: Shelf stable.

New Product–Documentation: Product with Label purchased from Smoky Mountain Natural Foods, Asheville, North Carolina. 1991. Nov. 15. 3 inch diameter. Self adhesive. Red and yellow on metallic gold.

Soyfoods Center product evaluation. 1991. Dec. 3. Good name! This condiment, which resembles Indian chutney in its chunky consistency, but is a little more salty and less sweet, is actually a type of Finger Lickin' Miso (namé miso). Flavor: Very nice. Label design: Terrible–too hard to read.

3592. Shinshu-Miso Research Institute. 1991. *Report of the Shinshu-Miso Research Institute* No. 32. p. 1-130. [Jap; eng]

Address: Nakagoshō 469-6, Nagano-shi 380, Japan.

3593. **Product Name:** "Beefy" Burrito (Renamed Mexican Tofu Burrito), and Mexican Tofu Sloppy Joe.

Manufacturer's Name: Soy Devine.

Manufacturer's Address: Box 668, Miranda, CA 95553.

Date of Introduction: 1991.

New Product–Documentation: Talk with Mara Devine. 1995. June 1. In 1995 Cajun Barbecue Style was renamed and divided into two products: Vegan Cajun Burger, and Cajun Tofu Sloppy Joe. She moved from Miranda to Arcata, California, in June 1993.

3594. **Product Name:** Simply Delicious Vinaigrette Un-Dressing [Tofu Poppyseed, Lemon Tahini, Miso Sesame, Herb Garlic], and Miso Magic.

Manufacturer's Name: Wizard's Cauldron, Ltd.

Manufacturer's Address: P.O. Box 969, 108 S. Church St., Hillsborough, NC 27278. Phone: 919-732-9445.

Date of Introduction: 1991.

Ingredients: Tofu Poppyseed: Canola oil, well water, apple cider vinegar, honey, organic tofu (White Wave), clear shoyu, garlic juice, white wine, pepper mash, lemon juice, mustard, poppyseeds, natural herbs & flavours, natural vegetable gum.

Wt/Vol., Packaging, Price: 10 fluid oz (300 ml) glass bottle.

How Stored: Shelf stable.

New Product–Documentation: Talk with John Belleme. 1992. July 11. John Troy is back in business after American Natural Foods went bankrupt—with the help of designer / marketer John Fogg. He now owns and runs a company named Wizard's Cauldron, located about 100 miles from where Belleme lives. Of his 30-35 products, the one Belleme likes best is Miso Magic, which is a sauce and/or dressing in his Simply Delicious line. John Troy has been very successful. He just spent \$200,000 upgrading his operation. He has a totally automated bottling and labeling line. His specialty is interesting combinations of esoteric ingredients. He makes two lines for Joel Dee under the Edward & Sons label.

Products sent by John Troy. Reddish brown and dark blue on pastel labels. Stylish. Lemon Tahini contains "clear shoyu" as the fifth ingredient. Herb Garlic contains "clear shoyu" as the sixth ingredient.

Talk with John Troy. 1999. May 3. His plant is now located at 8411 Hwy. N.C. 86 N, Cedar Grove, North Carolina 27231. He does a lot of work out of his home. Two thirds of his business is private label; he makes 14 SKUs for Whole Foods (such as Soy Ginger), Wizard's Hot Stuff for Joel Dee of Edward & Sons, Miso Mustard Dressing (fresh refrigerated organic) for Alberts, etc. He is in the process of removing the honey in some of his products and switching to agave nectar, to make them vegan and to give them a lower glycemic index; agave nectar is about to be approved as a sweetener for diabetics. Products he makes under his own Simply Delicious brand for the natural foods trade are three flavors of organic vinaigrette—each of which has a soy ingredient. They were introduced in about 1991.

3595. **Product Name:** Troy's Micro-Saucery Organic Ginger Sauce, Peanut Sauce, Chipotle Sauce.

Manufacturer's Name: Wizard's Cauldron, Ltd.

Manufacturer's Address: P.O. Box 969, 108 S. Church St., Hillsborough, NC 27278. Phone: 919-732-9445.

Date of Introduction: 1991.

Wt/Vol., Packaging, Price: Bottle.

New Product–Documentation: Talk with John Troy. 1999. May 3. His plant is now located at 8411 Hwy. N.C. 86 N, Cedar Grove, North Carolina 27231. Two thirds of his business is private label. Products he makes under his own

Troy's brand for the natural foods trade are three organic sauces—each of which has a soy ingredient. They were introduced in about 1991. Chipotle refers to smoked jalapeño; it is like a miso barbecue sauce, with a southwestern flavor profile. The ginger and peanut sauces each contain soy sauce.

3596. Chelf, Vicki Rae. 1991. *Cooking with the right side of the brain: Creative vegetarian cooking.* Garden City Park, NY: Avery Publishing Group Inc. viii + 283 p. Illust. incl. many color plates. Index. 28 cm.

• **Summary:** This vegetarian cookbook, which contains over 500 healthful recipes, shows a strong macrobiotic influence. The extensive glossary of ingredients includes good descriptions of adzuki beans, many sea vegetables, amaranth, amasake, gluten, gluten flour, koji, kudzu, miso, mochi, natto, natto miso, okara, quinoa, seitan, shoyu, silken tofu, soybeans, tamari, tempeh, tofu, and T.V.P. (Textured Vegetable Protein). All of these ingredients are used in recipes. There are at least 26 tofu recipes, 6 seitan recipes, and 4 tempeh recipes.

The author, who also illustrated this book, has been a vegetarian for 16 years. While living in Quebec, Canada, she wrote several French-language vegetarian cookbooks. The right side of the brain controls thoughts and actions that are creative, intuitive, spontaneous, and artistic, whereas the left side controls more logical, concise, analytical, and scientific thinking. Conventional education encourages development of the left side of the brain. This book encourages creative experimentation and improvisation with the recipes given.

3597. Clearspring Ltd. 1991. *Macrobiotic quality wholefoods.* London: Clearspring. 1 p. 1 sheet. 21 cm. *

• **Summary:** This leaflet advertises Clearspring's line of largely Japanese malt syrups, Japanese teas, sea vegetables, miso, soya sauces, amazake, umeboshi, pasta, sauces and crackers.

3598. Hesseltine, C.W. 1991. Peoria, an international center of fermentation excellence. *Transactions of the Illinois State Academy of Science* 84(1-2):1-11. [11 ref]

• **Summary:** This paper was presented on 28 Sept. 1989 as the after-dinner address for the 50th Anniversary Celebration of the Peoria (Illinois) Branch of the American Chemical Society. Contents: First fermentations. Hiram Walker Co. (1816-1899; for many years they operated the world's largest bourbon whiskey plant in Peoria). Takamine. Northern Regional Research Center. Penicillin & Dr. Andrew Moyer. Penicillin—others (incl. Dr. Kenneth Raper). USDA's Agricultural Research Service (ARS) culture collection (which dates back to 1904). Polysaccharides. Mycotoxins. Fermented foods (especially soyfoods such as miso, shoyu, and tempeh). Fermentation in Peoria today

(ADM uses the old Hiram Walker distillery to make fuel alcohol from corn). Honors and awards. References.

“Dr. Jokichi Takamine was the father of commercial enzymology and one of the pioneers of biotechnology. He was born in 1854 in Japan and received his Doctor of Pharmacology and Ph.D. in Engineering. He became very interested in Western concepts that would be useful to the Japanese but he also was interested in Japanese contributions to the West in science, industry and culture. In 1884 he married an American girl whose father helped him financially start the Takamine Ferment Company in Peoria in 1890. This company’s business was to produce ‘diastase,’ a mixture of glucoamylase and α -amylase. This mixture of amylases was produced by the koji molds (*Aspergillus oryzae* and *A. soyae*) and it was here in Peoria that fungal amylase was first introduced to the West. In the production of alcohol from grain it is necessary to break down the starch to sugar, which is then fermented to alcohol. Up to this time the starch conversion step of grain was brought about by the use of malt produced by the germination of grains.

“In the Takamine process the malt was replaced by fungal α -amylase and, therefore, was a process in direct competition with malt utilization. Apparently this new innovation was greeted with apprehension by the malt manufacturers. There was labor agitation and a propaganda campaign against Takamine. In 1894 the distillery where he worked was burned to the ground. Arson was suspected but never proven. The distillery which used fungal amylase was rebuilt, but the company dissolved the Takamine corporation and Takamine left Peoria in 1894. In 1894 Takamine obtained a U.S. patent on his enzyme diastase preparation called Taka-diastase.

“Later Takamine founded the Takamine Laboratories in the East [Clifton, New Jersey] and the Sankyo Pharmaceutical Company of Tokyo. He also isolated crystallized adrenaline at the same time that this was done by J. Abel at John Hopkins. Takamine obtained patents on adrenaline. He is also known for arranging for three thousand cherry trees for planting at the Tidal Basin in Washington. Recently a book on Dr. Takamine was prepared and printed by the Miles Company, which some years ago bought the Takamine Laboratories. The book contains his writings translated into English along side the original Japanese.”

“The ARS Culture Collection is one of only two large culture collections in the USA, and its primary function is to find and maintain useful or potentially useful microbial and genetic taxonomic material. This collection dates back to 1904 when Charles Thom was hired by the USDA to investigate the mold cheeses. In making these studies, Thom secured several hundred strains of *Penicillium* and *Aspergillus* which became the nucleus of the ARS Culture Collection. At first Thom was at the Connecticut

Agricultural Experiment Station, but in 1913 he moved to Washington, DC, taking his cultures with him. The oldest mold culture in the Collection is a strain of *Actinomucor elegans* isolated in 1892. Thom’s collection had no formal recognition, and the story is told how Thom worked in the Laboratory on weekends to transfer his collection. In 1940 when the Fermentation Laboratory was established at NRRC, the Thom Collection was moved from Washington, DC, to Peoria and was formally recognized as one of the fermentation groups with Dr. K. Raper in charge. Dr. J. Wickerham joined the group to be curator of the Yeast Collection, and W.C. Haynes was selected to maintain a Bacterial Collection. Since then the number of curators has increased from 3 to 6. Some famous private collections were added in 1940, including the Harvard Collection which had strains isolated before 1900.” Address: 5407 Isabell, Peoria, Illinois 61614.

3599. Homma, Gaku. 1991. The folk art of Japanese country cooking: A traditional diet for today’s world. Translated by Emily Busch. Miso, miso soup, miso-dama, and tamari (Document part I). Berkeley, California: North Atlantic Books. xii + 270 p. Illust. Glossary and index of Japanese words. Recipe index. 26 x 20 cm.

• **Summary:** This is a remarkable book by a remarkable man, with many deep insights into both traditional and modern cultures in Japan and the USA; it gives a unique, authentic view of Japanese culture, and makes liberal use of the Japanese names for things, such as food, utensils, techniques, homes, etc.

Here we will discuss only those parts of the book relating to miso, miso soup, miso-dama, and tamari: The author arrived in Denver, Colorado, in 1977. One day an Aikido student of his took him to a local health food store. In the Japanese section he found hijiki, wakame, nori, miso, and soba. To his surprise, he found that although the foods were expensively priced, each was of “third-rate quality” (p. 5).

He started a Japanese restaurant in Denver, but never advertised it as a health food restaurant. Would anyone serve unhealthy food in a restaurant? Occasionally there would be customers with questions such as, “What kind of miso or shoyu do you use?” He realized that many customers were worried about their diets, rather than being grateful that they had enough food and that they could had the freedom to choose to eat whatever they wanted (p. 11).

He was born in Akita, in northeastern Japan, where the winters are harsh, and traditional people stored foods for winter survival. Some vegetables were buried in miso (soybean paste). Some soybeans were also preserved by making them into miso, which was a *hazonshoku* (preserved food) (p. 16, 18).

During the Kamakura period [1185-1333] Zen Buddhism became very popular with the samurai. Since Zen

forbade the consumption of any warm-blooded animals, the diet was strongly affected. One popular food was “*kanbutsu* (lightly salted, dried fish) flavored with a mixture of soy sauce and miso called *hishio*” (p. 26). A photo shows Zen priests, heads shaved, eating in a monastery, Note: *Hishio* was similar to Chinese soybean *jiang*, a mash with the consistency of thin congee [rice porridge] or apple sauce; it could be separated by straining or filtering into liquid soy sauce [like *tamari*], with the solid residue being somewhat like miso, although with less flavor.

During the Muromachi period [1336-1573], Zen Buddhism continued to influence the Japanese diet, which consisted mainly of rice, cooked vegetables, and an early form of miso named *namé miso* (“lick miso” [finger lickin’ miso]) (p. 27).

In traditional Japanese farmhouses, fish or fowl were sometimes marinated with salt and miso or *tamari* (juice from making [soybean] miso), “flash-seared on both sides to seal in juices and flavor, then stuck into the *venkei* (bamboo basket stuffed with rice straw used to store foods above the sunken fire place {*irori*}) to be smoked” (p. 32).

In traditional farmhouses, if there was more meat than could be eaten during lunch and dinner, “the rest was marinated in miso and *tamari*. The miso would keep the meat from spoiling during the night. The next morning the meats were rinsed lightly, seared, and put in the *venkei*” for the rest the working day. When the family returned for a meal, the meat was ready to eat” (p. 38).

Fishermen would mix their cooked rice with *umezu* (the juice left over after pickling *umeboshi* salt plums). And they would eat fresh fish with their *umezu* rice balls. First they would split the fish in half from the inside out—without using a knife. Then they would dip the fish in *tamari* or miso, and eat it uncooked, on the spot. Sometimes the *tamari* was mixed with wasabi (Japanese green horseradish) as a dip. Wasabi is a sterilizing agent, served with sushi to this day (p. 39).

A dish found in Homma’s home town of Akita is called *kayaki* or *kai yaki*, which means “shell bake.” “A large scallop shell is placed over the fire and filled with fish, tofu, and seasoned vegetables. Miso, soy sauce, or *shottsuru* (juice from pickling fish) as added for taste” (p. 40).

In the Owu mountain range of northeastern Japan, men whose livelihood depends primarily on hunting are called *Matagi*. “These people also farmed, but they were takers of life.” So their lives, like those of the fishermen, were restricted and controlled by religious customs. On long hunting trips, the only food or “flavoring they carried was a dried ball made out of soybean paste called *miso dama*. All they had to do was to add water to make miso or miso soup (p. 42).

After the Tokyo Olympics in 1964, “Japan became a country inspired by consumerism.” Japanese wanted to be like Americans. In “modern” families, the husband and wife

both began to work outside the home. In the evening, just as the husband walked through the door, the wife would tear open a pouch of instant *misoshiru* (miso soup) and add hot water—“looks so real and tastes so good”—as they chased the American dream (p. 46).

Table manners: “When you are being served a meal, your chopsticks should lay horizontally in front of you at the close edge of the table. Your rice bowl is on your left and your miso soup is on the right...” In Japanese restaurants in the USA, when serving dinner, they usually serve a salad and then *misoshiru* or *osumashi* (clear soup) before the meal (p. 56-57).

When you are a guest in a Japanese home, you “can only ask for *misoshiru* a second time. This is very formal; if it is a casual situation the rules are not as strict, yet manners are important in all situations” (p. 58).

Slightly sour Chinese cabbage mixed with tofu and chopped *negi* (Japanese onion [or leek]), “simmered with water, miso, and *sakekasu* (rice wine lees), makes a delightfully sour dish...” “The first bulbs to appear after the winter snow melted belonged to the *fuki* (butterbur) plant. “These bulbs were seasoned with miso and roasted, or made into *sunomono*” (seasoned with rice vinegar) (p. 66).

“Miso and *tamari*—soybean by-products: Making miso was traditionally a community effort that began May 21st or 22nd (*haru higan* or the spring equinox).” Soybeans are soaked overnight, boiled, drained, and poured into a large tub. Men wearing rice-straw shoes to protect their feet crush the beans. The women then shape the crushed beans, while they are still warm, into pyramids, squares, or balls, depending on the locality [just like with *meju* in Korea]. After the shapes have cooled, they are tied with rice-straw rope and hung under the eaves of the house (see 2 photos, p. 68). When the naturally occurring fungus [mold] begins to grow on the soybean shapes, it is said that “the flower has opened.” When the shapes are covered with a fragrant bloom of mold, they are transferred to the *misodaruru* (large cedar miso tub). Just before miso making time this tub is filled with water or weighted with rocks and soaked in a river so that the wooden staves would swell tight. It is then tested for leaks Salt and water are added and the tub is covered. From time to time the cover is removed and the miso is stirred to enhance the fermentation process. This farmhouse method of making soybean miso is simpler than that which requires the use of *koji*, and the miso has a saltier taste.

While soybean miso is fermenting, a dark, rich, delicious liquid gathers at both the top and bottom. This is collected and called *tamari* (or miso-damari), and is used in traditional farm houses like soy sauce. In the countryside, *shoyu* (soy sauce) was traditionally made “as a cash crop to be sold in the cities. The mountain people and country farmers couldn’t afford *shoyu*, so they used *tamari* or *taremisu* instead.

As a child, it was Homma's job to crush the boiled soybeans. His family used koji. The traditional farmer keeps a storage shed for the tubs of miso and pickles near his house—but not too near. "City people sometimes use the phrase 'you smell like miso' to mean that you come from" the countryside.

"Sometimes on larger farms, miso was stored for up to eight years. To have old miso in your house meant that you had a large, prosperous family" (p. 67-69). Continued. Address: Former owner and head chef, Domo restaurant, Denver, Colorado. Founder and chief instructor Nippon Kan Aikido ad Cultural Center, Denver, Colorado.

3600. Homma, Gaku. 1991. The folk art of Japanese country cooking: A traditional diet for today's world. Translated by Emily Busch. Miso, miso soup, miso-dama, and tamari (Document part II). Berkeley, California: North Atlantic Books. xii + 270 p. Illust. Glossary and index of Japanese words. Recipe index. 26 x 20 cm.

• **Summary:** Continued (p. 72): *Kojikabi* is the koji mold [*Aspergillus oryzae*]. Koji (made from either steamed rice or barley) and its mold serve as a source of enzymes, which break down [hydrolyze] starches into sugars and proteins into amino acids, in the process of making both miso and shoyu. Koji is also used to make sake, and in farmhouses it was used to make *nigorizake* (unrefined sake, also called *doboroku* or *ohho*) in parts of the northeast provinces. *Nigorizake* has been made from *genmai* (brown rice) since the Edo period (1600-1868). (p. 72).

Japan's traditional "seasonings are still undergoing change to suit current tastes [and lifestyles]: witness 'lite' soy sauce and reduced-salt miso!" (p. 74).

A photo shows *miso dama* [which could be called miso koji] and konnyaku dama hanging from the eaves of a traditional farmhouse (p. 83, 85).

There are many ways to preserve fish; one way is to marinate them with miso or tamari (which also add a subtle flavor) and then to dry them. Fish and shellfish (*gyokai-rui*) which have been dried are called *himono* (p. 90).

Homma has childhood memories of morning kitchen sounds. Rice being washed, snapping of kindling to start a fire under the *kama* (rice pot), "the sounds of chopping, as the tofu and scallions were cut for the miso soup" (p. 104).

A whole fish can be used by a single person with no waste. "One section can be eaten fresh that day. The second can be marinated in shoyu or miso for six to seven hours and frozen; this way it is ready to bake and eat at any time" (p. 112).

Breakfast—Setting the table. The simplest breakfast includes *ichihan*, *ichiju*, and *issai*, which means one bowl of rice, one bowl of soup, and one side dish. This simple breakfast is served during religious training, eaten for four or five days consecutively before a fast, or eaten to change one's diet or to lose weight." "The *ichiju* is either a kombu-

or shiitake-based miso soup or a clear soup. The *misoshiru* contains a good balance of tofu and vegetables." The many *issai* include *tsukemono* (a variety of vegetables pickled with miso, salt, shoyu, or *nuka* {rice bran}), and *yakimono* (fish grilled either plain or marinated in shoyu, miso, *sakekasu* {rice wine lees} or *nuka*) (p. 122).

Okayu is rice porridge. "If you take plain okayu and mix in vegetables, fish, and miso or shoyu, you have *zosui* (p. 125).

"Morning side dishes: *Tsukemono*—pickles. Originally *tsukemono* were vegetables pickled in miso. Miso was called 'ko' in earlier times. *Ko no mono* [literally "fragrant things"; *ko* is the Japanese character for "fragrance"] is the old name for pickles." Today miso pickles are still made in Japan, but salted pickles are more popular (p. 126).

Recipe for *miso zuke*—Pickles made with miso (p. 132).

Yakimono—Grilled and broiled dishes (for breakfast):

One way to prepare fish for breakfast is to marinate them for 1-3 days in miso, shoyu, or *sakekasu* (saké lees). A recipe for *Kasu zuke yaki*—Fish marinated in rice wine lees is given (p. 144, 146).

Recipes for *Nasu no miso ni*—Japanese eggplant sauteed with miso, *Tekkamiso*—Soybeans and burdock sauteed with miso (p. 151).

Misoshiru—Miso soup: *Misoshiru* is an integral part of the traditional Japanese breakfast. Japanese farmers started their workday very early. Traditionally they began their day with a large pot (*nabe*) of grains, cereals, vegetables, and miso mixed together to make a porridge like *zosui*. In the last 50 to 60 years the *misoshiru* and rice have been served separately in the traditional Japanese breakfast. There follows a detailed, very interesting 7-page discussion of the art of making and consuming miso soup. Homma has found nothing that evokes as much gratitude and delight from Japanese traveling in the USA as to be served real miso soup. "For myself, if I think of my mother's *misoshiru* I become the most homesick!" "The most important point to consider when making *misoshiru* is timing." The best time to add the miso (which has been mixed with a small amount of dashi to dissolve it) to the soup is just as everyone is sitting down to the table to eat. "As soon as it starts to boil, remove it from the heat and serve." Three recipes are given for making *misoshiru dashijiru*: (1) With kombu and shiitake. (2) With kombu and katsuobushi. (3) With niboshi or yakiboshi (dried sardines or anchovies). Thirteen miso soup recipes are given: (1) Tofu and wakame. (2) Wakame and potato (*jagaimo*). (3) Wakame and shiitake. (4) Sliced tofu and negi leeks. (5) Bits of tofu (*kuzushi tofu*) with spinach. (6) Cabbage with agé (deep-fried tofu puff), (7) Soybean sprouts (*daizu no moyashi*) with agé. (8) Snow peas with agé. (9) Daikon (Japanese white radish) and carrots. (10) Onion and potato. (11) Kabocha (Japanese pumpkin). (12) Sweet potato (*satsuma imo*). (13). Asari or hamaguri (short-neck clam or regular clam). Diagrams (p.

158) show 3 ways (from 3 dishes to 6) of setting the breakfast tray (*ozen*).

Aemono recipes: *Shiraae*—Vegetables and tofu flavored with miso. *Kaiso no ume shiraae*—Sea vegetables and tofu flavored with miso and pickled plum. *Burokkori no shiraae*—Broccoli and tofu flavored with miso and pickled plum. *Nanohana no ume shiraae*—Rapeseed leaves and tofu flavored with miso and pickled plum. *Sayaingen no goma misoae*—Green beans flavored with miso and sesame seeds (p. 178-80).

Nabemono (one pot) recipes: *Tsumire nabe*—Fish ball and vegetable casserole flavored with soy sauce [and miso]. *Nabemono* with miso flavor base: *Butaniku or toriniku nabe*—Pork or chicken and vegetable casserole flavored with miso. *Gyuniku nabe*—Beef and vegetable casserole flavored with miso. *Kaisen nabe*—Seafood casserole flavored with miso (p. 226-28). Address: Former owner and head chef, Domo restaurant, Denver, Colorado. Founder and chief instructor Nippon Kan Aikido ad Cultural Center, Denver, Colorado.

3601. Shufu-no tomo. 1991. Anzen shokuhin no hon: Munôyaku, mutenka no honmono shokuhin otoriyo se gaido [The book of safe foods: A guide for getting real foods without agricultural chemical or additives]. Tokyo: Shufu-no-tomo-sha. 144 p. Illust. 26 cm. Tokubetsu henshû (Special edition). Shufu-no-tomo Seikatsu Series. 26 cm. [Jap]

• **Summary:** This beautiful book is about Japanese natural foods, organically grown without agricultural chemicals and processed without chemical additives. It is packed with color photos and descriptions of the products, the people and companies that make them, and the places where they are made. The name, address, and phone number of each company is included. Miso (p. 16-20). Shoyu (p. 21-27). Natto and tofu (p. 76-78).

Amazake (p. 16-17): Koji-ya Saburouemon, Nakamura 2-29-8, Nerima-ku, Tokyo, Japan. Phone: 03-3999-2276. 100 years old, 6th generation.

Miso & Shoyu (p. 18): Sendai Miso Shoyu, Kojo 1-5-1, Wakabayashi-ku, Sendai-shi, Miyagi-ken 982, Japan. Phone: 022-286-3151.

Miso & tamari (p. 19): Nakamura Jozo, Tatsuno-cho 1536, Yokkaichi-shi, Mie-ken 510, Japan. Phone: 0593-26-0456. Started 70 years ago. 3rd generation. About 15 years ago started to make naturally fermented soy products.

Miso (incl. barley miso; p. 20): Shirouza Shoten, Meihama 3-3-27, Nishi-ku, Fukuoka-shi, Fukuoka-ken 819, Japan. Phone: 092-881-0413.

Shoyu made with whole soybeans (p. 21): Kikkogo Shoyu Kondo Shoyu Moto, Yamada 733, Itsukaichi-machi, Nishitama-gun, Tokyo 190-01, Japan. Phone: 0425-95-1212.

Shoyu (p. 22-23): Kadocho, Kita-machi 7, Yuasa-machi, Arita-gun, Wakayama-ken 643, Japan. Phone: 0737-62-2035. 5th generation.

Shoyu (p. 24): Yamaki Shoyu, Kotobuki 3-3-16, Honsho-shi, Saitama-ken 367, Japan. Phone: 0495-24-6161.

Unpasteurized miso, and shoyu (p. 25): Shoku Seikatsu Kenkyu-kai, Miroku-ji 83, Fujisawa-shi, Kanagawa-ken 251, Japan. Phone: 0466-22-0635. Started in about 1970.

Shoyu, amazake base, koji, miso (p. 26): Inoue Shoten (Igeta Shoyu brand), Owari-machi 57, Kitakyo, Nara-shi 630, Japan. Phone: 092-741-5360. 4th generation. Started during the Genji era (1864-65).

Shoyu (p. 27): Jokyu, Daimyo 1-12-15, Chuo-ku, Fukuoka-shi 810, Japan. Phone: 092-741-5360. Started 135 years ago.

Natto (p. 76): Kuroishi Natto, Fukuroi 1-74, Kuroishi-shi, Aomori-ken 036-03, Japan. Phone: 0172-52-3958. Started 60 years ago.

Natto (p. 77): Shojiki Mura, Nishitakao 5-237, Kitamoto-shi, Saitama-ken 364, Japan. Phone: 0120-421351. A relatively new company.

Tofu (p. 78): Kurihara Shoten, Endo 2022, Fujisawa-shi, Kanagawa-ken 252, Japan. Started in about 1977. Address: Tokyo.

3602. Tremblay, Yvon. 1991. La santé de la terre: le petit guide santé des années 1990: le soya et ses dérivés (lait de soya, tempeh, miso, etc.) ainsi que le sarrasin et le seitan [The health of the earth: the little health guide for 1990: soybeans and soyfoods (soymilk, tempeh, miso, etc.) as well as buckwheat and seitan]. Rosemère, Quebec, Canada: Presses Libre-choix. 157 p. Illust. by Mario Gailloux. 21 cm. [Fre]*
Address: Que.

3603. Yokotsuka, Tamotsu. 1991. Proteinaceous fermented foods and condiments prepared with koji molds. In: Arora, Dilip K.; Mukerji, K.G.; Marth, E.H., eds. 1991. Handbook of Applied Mycology. Vol. 3: Foods and Feeds. New York, NY: Marcel Dekker, Inc. x + 621 p. See p. 329-73. Chap. 11. [118 ref]

• **Summary:** Contains a great deal of very interesting information. Contents: 1. Introduction. 2. Fermented soybean foods in East and Southeast Asia: A. Douchi (China), Hama-natto (Japan), and in-yu (Taiwan). B. Shuidouchi (Shandong province, China), thua-nao (Thailand), kinema (Nepal), and natto (itohiki natto) (Japan). C. Tempe [Tempeh] and Oncom [Onchom] (Indonesia) (Making soybean tempe, volatile flavor of tempe, chemical composition and nutritional value of tempe, tempe bonkrek). D. Fermented tou-fu (soybean curd) products: Sufu (China and Taiwan), Tofu-yo (Okinawa, Japan).

3. Fermented salty condiments in a slurry or paste made from soybeans and cereals: A. Doujiang (touchiang) (China) and Tauco [taucho] (Southeast Asia). B. Doubanjiang (Toupanchiang). C. Tianmianjiang (Tienmienchiang). D. Gochujiang and Doenjang (Korea). E. Hishio (Japan). F. Miso (Japan) (Production and consumption of miso, making rice miso and barley miso).

4. Fermented salty liquid condiments made from soybeans and cereals: A. Japanese shoyu (Manufacture of koikuchi and usukuchi shoyu, manufacture of tamari shoyu). B. Soy sauce produced in east and southeast Asian countries other than Japan (Korea, Taiwan, Hong Kong, Singapore, Malaysia, Indonesia, Thailand, People's Republic of China {the process, acid hydrolysis illegal until recently}, chijhi or whole soybean soy sauce still made in the basins of the Zhujiang {Pearl} River and the Huanghe {Yellow} River).

5. Biochemistry involved in shoyu and miso manufacture: A. Selection of raw materials. B. Contribution of improved cooking methods of raw materials to increase the enzymatic protein digestibility. C. Selection and improvement of koji molds. D. Improvement in koji making. E. Microbial and chemical control of salty mash fermentation. F. Flavor evaluation of koikuchi shoyu. G. Stability of color of pasteurized shoyu. H. Nutritional concern about shoyu and miso (salt content). Safety of koji molds and shoyu (aflatoxins).

6. Conclusion.

Tables show: (1) Chemical composition of kinema, thua-nao, and douchi. (2) Changes in nitrogenous compounds during Natto Fermentation. (3) Changes of nitrogen compounds in sufu making. (4) Constituents of some types of miso. (5) Chemical composition of various kinds of genuine fermented shoyu in Japan. (6) Effect of cooking conditions of thoroughly moistened defatted soybean grits on the enzymatic digestibility of protein. (7) Differences between *A. oryzae* and *A. sojae* used for shoyu fermentation. (8) Proteinases produced by *Aspergillus sojae*. (9) Enzyme composition of koji as influenced by the difference of material. (10) Various metabolic patterns by lactobacilli in shoyu mash. (11) Digestibilities of protein in shoyu, miso, natto, and tempe fermentations. (12) Results of quantitative analysis of flavor constituents in koikuchi shoyu.

Figures show: (1) Flow sheet of tempe making. (2) Flow diagram of sufu making. (3) Diagram of rice-miso fermentation. (4) Diagram of koikuchi shoyu fermentation. (5) Tamari-shoyu fermentation. (6) Microflora changes in shoyu mash fermentation. (7) Classification of *Aspergilli*. (8) Fermented foods and condiments made from soybeans mixed with or without cereal grains or flour. Address: Research Div., Kikkoman Corp., Noda City, Chiba prefecture, Japan.

3604. Hayakawa, Tsuneo. 1992. Re: Hacho miso company is now building its own miso museum. Letter to William Shurtleff at Soyfoods Center, Jan. 8. 1 p. Typed. [Eng]

• **Summary:** The museum is intended to let people know the old way of miso production and to make them more familiar with the company. Using several mannequins, old tools, and some documents owned by the management, the company has almost completed the main part of the museum. Tsuneo, a younger brother of the president, is in charge of collecting historical materials for the museum. He began work on this project 2 years ago; before that he worked for a newspaper company. He intends to make a miso literature corner in the miso museum. Mr. Kaneko, former chief of the general affairs section, retired 10 years ago. Address: Hacho Miso, 69 Okan-dori, Hacho-cho, Okazaki-shi, Aichi prefecture 444 Japan.

3605. Hayakawa, Tsuneo. 1992. Re: Building a Hacho miso museum in Okazaki City, Japan. Letter to William Shurtleff at Soyfoods Center, Jan. 8. 1 p. Typed, with signature. [Eng]

• **Summary:** "Hacho Miso Company (Goshikaisha Hacho Miso in Okazaki City, Japan) is now building its own Miso Museum to let people know what the old way of miso production was and to make them familiar with the company." He asks for ideas and advice. Shurtleff responds with three specific suggestions. Address: c/o Hacho Miso, 69 Okandori, Hacho-cho, Okazaki-shi, Aichi prefecture, Japan.

3606. Dinh, Daniel. 1992. Present status of soyfoods in Vietnam (Interview). *SoyaScan Notes*. Jan. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Tofu and soymilk are the only two soyfoods that are widely known and used in Vietnam. Daniel's relatives made fish sauce (*nuoc-mam*) in Vietnam. Before 1975 there was a trade association of fish sauce manufacturers in Vietnam and their company was one of only 12 major manufacturers in the association. Then in 1975 when the Communists took over, he had to flee the country, and his family decided to destroy their fish sauce factory, lest they face death or prison as capitalists. Now the situation is ripe for his return to Vietnam, and he is interested in learning to make miso and soy sauce, and perhaps starting production in Vietnam. Address: 22821 Sherman Way, West Hills, California 91307. Phone: 818-704-6432.

3607. **Product Name:** Tempeh Starters, and Miso Starters.

Manufacturer's Name: Future Foods.

Manufacturer's Address: 3 Tai Madog, Stablau, Llanrug, Gwynedd, LL55 3PH, Wales, UK. Phone: (0286) 870606.

Date of Introduction: 1992. January.

New Product-Documentation: Letters from Owen Smith of Future Foods. 1992. Oct. 27 and Dec. 2. He has a small

company selling unusual seeds of food plants as well as tempeh and miso starters. He obtains the cultures from GEM Cultures in California, and started selling them in Jan. 1992. His company is planning to start making its own tempeh starter using the method described in books on tempeh by Shurtleff and Aoyagi.

3608. Morgenroth, Lynda. 1992. Luisa Baranda: There's more to macrobiotic cooking than brown rice, as this gentle, spiritual Boston woman can demonstrate. *Yankee* 56(1):88-92, 94. Jan.

• **Summary:** For Luisa (nicknamed Luchi) cooking is a meditation. Born in Chile, she spent years in Paris (France) and Spain, but now teaches macrobiotic cooking in Boston. When flavoring soup with miso, she would never just dump a blob of miso into the soup. Instead, she lowered a ladle with a little miso into the pot, massaged some broth into the miso, then "eased the stock-thinned paste into the soup." Also discusses adzuki beans and various seaweeds (kombu, wakame, dulse, and arame). Includes recipes for: Miso soup (with wakame). Hiziki (hijiki) with vegetables. Scrambled tofu. Steamed greens and tofu dressing.

3609. **Product Name:** Lite & Spicy Flavormates: Miso Magic.

Manufacturer's Name: Redwood Company (The). Div. of JRJ Trading (Importer-Marketer-Distributor). Made in America.

Manufacturer's Address: 243 The Broadway, Muswell Hill, London, N10, England.

Date of Introduction: 1992. January.

Ingredients: Incl. miso.

Wt/Vol., Packaging, Price: Retail for £2.49.

New Product-Documentation: Health Food Business (London). 1992. Jan. p. 12. "Vegetarian breakfast treats with JRJ's organic bacon." These products spice up all manner of dishes.

3610. Roller, Ron. 1992. The U.S. miso market (Interview). *SoyaScan Notes*. Feb. 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** During the past 3-4 years, the U.S. miso market seems to be growing, but only slowly. Ron has been away from direct contact with sales of Eden Foods' miso for the last 8 months (when he ceased to be president of Eden Foods, Inc.), but he still has a good sense of what is happening. He sees miso as a macrobiotic product—macrobiotics are the main user base other than Asian-Americans. It is also a very Japanese food. There are now so many natural foods products on the market that miso must compete with, that convenience has become a big factor for consumers. Miso is not very well understood by many American consumers. The sodium level in miso may hurt the growth of miso sales in America—especially for new

consumers; it will probably not have much of an effect on those who use miso and know what it is.

Ron's estimates of the U.S. Caucasian market share of the main miso types is as follows: Barley miso 35%, salty rice miso 25%, sweet rice miso 25%, Hatcho and other soybean misos 12%, specialty misos (natto miso, buckwheat miso, etc.) 3%.

More barley miso is sold in bulk than other types. Ron sees sweet rice miso (sweet white miso; shiro miso) as having the most future potential for Americans—especially for those who are not macrobiotics. Eden imports sweet white miso from Japan; it is pasteurized to prevent spoilage, but it does turn brown over time. Ron thinks miso is a great food that is not adequately appreciated. It may have great potential as an ingredient sold to the food industry for use in processed foods.

Ron, personally, has a deep interest in Japanese natural foods, in food production, and in how the raw materials (such as soybeans and grains) are produced, i.e. in organic crop production. "The word 'macrobiotic' is a word that I personally rarely use, though the exposure to that philosophy has taught me a great deal. The interest in macrobiotic foods is increasing. The old dreams about locally-produced, organically-grown foods have come true. They are widely available and nicely packaged and marketed." Address: President, American Soy Products, 1474 N. Woodland Dr., Saline, Michigan 48176. Phone: 313-429-2310.

3611. O'Connell, Michael. 1992. History of Ploughshares Foods Ltd. in Glastonbury, England (Interview). *SoyaScan Notes*. Feb. 27. Conducted by Anthony Marrese in England.

• **Summary:** This company was founded in 1984 in the Essex countryside by Michael O'Connell and Fiona Bruce under the name "The Emperor Liu An's Tofu Palace." Liu An was the legendary inventor of tofu in China. The business was an 8-tonne mobile catering truck and kitchen on wheels which went to open-air shows and festivals; its purpose was to serve vegan organic food (including tofu), demonstrate tofu-making, and promote veganism. They started operating the truck in Aug. 1984. Recipes prepared in the mobile restaurant in 1984/85 included tofu blueberry mock cheesecake, tofu mayo, tofu sweet cream, tofu lasagna, tofu pudding, tofu ice cream, tofu burgers, tofu gulash, and tofu pizza. In 1985/86 they launched okara steam pudding with dates, okara shepherd's pie, and okara burgers.

In Aug. 1986 the company moved to Glastonbury, started a non-mobile restaurant, and changed the company name to Ploughshares Foods Ltd. (after the Old Testament Biblical expression from The Book of the Prophet Isaiah 2:4 "They shall beat their swords into plowshares, and their spears into pruninghooks: nation shall not lift up sword

against nation, neither shall they learn/study war any more”).

In 1988 the restaurant introduced tofu quiche (onion and mushroom), okara veggie roll, okara tempeh, okara tempeh Bolognese/moussaka, and braised tofu in miso sauce. In 1989 they launched soya cream cheese with chives, and in 1991 okara tempeh with leaf protein added.

In 1991 the company structure changed from a partnership to a cooperative. Other current members of the co-op are Miranda Bruce, Sophie Pullinger, and Lalita Gordon Milverton.

The company was a pioneer in introducing tofu and new ways of using it to vegan restaurants. Uses included burgers, pies, dressings, creams, main dishes, salads, soups, etc. They introduced foods that were free of dairy products, wheat/gluten, and/or sugar, and developed a leaf protein product named Leafu (i.e. tofu from leaves). Their vegan cooking school was the first such school to receive the “City and Guild” qualification to those who graduate from their residential diploma course teaching vegetarian, organic, and special diet foods. The company provides a friendly working environment, as for single working parents, and is involved in the wider issues of improving society.

The main reasons for the company success are a commitment to delicious, aesthetic, nutritious food, customer loyalty, and a commitment to research, development, and innovation.

Anthony Marrese adds: “All of their products are good, and their people are especially nice. I spent about 18 months helping with the tofu production and restaurant in 1987/88.” Address: 54 Roman Way, Glastonbury, Somerset, BA6 8AD, England. Phone: 0458-831182 or 835233.

3612. DeBona, Don. 1992. The miso market in America and The American Miso Co. (Interview). *SoyaScan Notes*. Feb. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The miso market in America is growing nicely. There are two distinct U.S. miso markets, the Asian-American (Oriental) market and the natural foods (macrobiotic) market. Don can only speak for the latter, and is best able to discuss his company’s experience in that market. In the last 3-4 years, his production has grown on average 10-12% a year. He thinks that the causes of this growth are the wider availability of miso, and its greater accessibility to mainstream consumers who increasingly shop at natural food stores and chains such as Whole Foods Market and Bread & Circus. Neither the current recession nor the greater consumer awareness of dietary sodium affect miso sales. Most miso buyers are macrobiotics or vegetarians who are not very concerned about consuming too much sodium. People who buy his lower-sodium misos (sweet white [rice], sweet barley, mellow barley, or chickpea miso), do so not because of their lower sodium content but because they have different applications and

flavors. He does not market his low-salt products as “low salt” nor does he see any great potential in making and marketing low-salt misos. Miso buyers generally know a lot about miso and about nutrition. He makes no nutritional claims on his miso products. His main concerns are with the taste and quality of his misos.

From the late 1960s until the very early 1980s, the non-Oriental U.S. miso market was largely a macrobiotic market. But the growth he has seen in the last 3-4 years is mainly to non-macrobiotic customers. He estimates that more than half the people who buy his miso do not think of them selves as macrobiotic, and perhaps a third of them have never even heard the word “macrobiotic.” They buy it as a vegetarian natural food product; they like the taste, and see it a new and versatile seasoning. The dark misos provide a meatlike flavor but the sweet and mellow misos do not. People use mellow white miso in soups, salad dressings, or stir fries. Dark misos are used more in soups, whereas sweet misos are not very widely used in soups.

He would categorize the different varieties of miso (both from a production and sales viewpoint) as percentages of his total production as follows: 1. Long-term, traditional darker, 40% (23% barley and 17% rice). 2. Mellow miso (white or barley), 30%. 3. Sweet miso (white or barley), 20%. 4. Other (including non-soy): Chickpea, 10%.

Looking at the same categories for the American natural foods/macrobiotic market as a whole: 1. Long-term, traditional darker, 57% (35% barley, 15% rice, 7% soybean or Hatcho). 2. Mellow miso (rice or barley), 25% (American Miso Co. and Miyako Oriental Foods/Cold Mountain dominate this category). 3. Sweet miso (rice or barley; only American Miso makes or sells a true shiro miso), 10%. 4. Other (including non-soy): Chickpea, finger lickin’ miso (a topping), natto miso, buckwheat miso, etc. 8%.

Two Japanese men now live and work at American Miso Co.; one was brought by John Belleme about 8 years ago, and one came about 3 years ago. They are in production. Don also has 2 American workers. They are like part of the family. He has never had soybean or Hatcho miso in his house and has never seen these Japanese eat it. Don does not particularly like the taste; it is dark, lacks sweetness and a complex bouquet due to its lack of grain, and is over-aged. Moreover, he feels it is more difficult to make because soybean koji is hard to make.

Westbrae sells a lot of miso on the West Coast but not much on the East Coast. Miso is said to be Westbrae’s third best-selling product category. Don used to sell Westbrae’s miso in the 1970s, when he worked for Laurelbrook Foods in 1980-81, shortly after Rod and Margy Coates were bought out.

Companies that make the miso in the USA using organically grown soybeans and grain include American Miso Co. (50% of natural foods market), and South River Miso Co. (10%); Westbrae and Miyako/Cold Mountain only

use organic soybeans, but they call their miso “organic.” New labeling regulations will soon make that illegal, and will probably cause most of the miso made in America to be made from organically grown soybeans and grains. Many consumers want organic miso.

The three largest makers of miso in America (for both markets), in descending order of production, are Miyako Oriental Foods, American Miso Co., South River, Junsei Yamazaki, and Traditional Foods. The major miso importers, again in approximate descending order, are Eden Foods, Great Eastern Sun (Mitoku Brand), Westbrae, Granum (Mitoku brand), and Tree of Life (Mitoku Brand).

In the U.S. natural foods market, American Miso Co. is the market leader. Don estimates the size of this market to be about 750,000 lb/year, but he would guess that Asian-American market is about twice this large (1,500,000 lb/year). His various misos retail for about \$5.95 in 1 pound sizes or \$3.95 in 8 oz sizes. When Don travels in America, he studies the shelves, and has been in almost every major natural foods store in the USA. He also regularly visits distributors and food brokers. But he does not try to keep systematic statistics on the market size.

American Miso Co. is growing rapidly, and it is hard to finance this growth from earnings. Don’s plant is now too small relative to demand; it is bursting at the seams. He has added more vats and plans to add another building this summer, financing it with a bank loan. The company is owned by only two people: Don and his partner, Barry Evans. Barry used to have a lot of money, but he got out of the marijuana business—where he made the money. He is now in jail in Santa Barbara for selling marijuana. In went to jail in Jan. 1992 and expected to be there for about 2½ years. Much of the \$500,000 startup capital for America Miso Co. came from Barry, but since then the company has largely had to finance itself. Financially the company is doing very well; they have made a profit every year for the past 3-4 years. Don is wary of bringing in more partners because of bad experiences in the past. Don has had a very good relationship with Barry Evans, and it has greatly benefited both of them and American Miso Co.

Don, whose ancestry is mostly Italian plus a little Irish, greatly enjoys running the company. His role has changed a lot. Up until last year, he made miso every week. How he does that much less, and focuses more on marketing. For the past 2-3 years he has also been president of Great Eastern Sun—a position he held before he came to replace John Belleme at American Miso Co. Most customers identify the company as “Miso Master” rather than “American Miso Co.” Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3613. DeBona, Don. 1992. Miso in Europe (Interview). *SoyaScan Notes*. Feb. 29 and April 19. Conducted by

William Shurtleff of Soyfoods Center.

• **Summary:** Don has had 2-3 offers (though not serious enough) to go to Europe to build and run a miso factories. When a really serious offer for a major joint venture is made, backed by sufficient capital, he would like to do it. He would provide the production (and maybe the marketing) expertise. In about 1985 Don trained Jan Kerremans, a Belgian, from Lima Foods in the south of France, in how to make miso—after they had started and weren’t doing very well. After that, Lima got their miso production under control, but then Jan left at about the same time that Lima Foods was sold—Don is not sure which came first. Jan was a minor partner in Lima Foods. The Gevaert family sold Lima in about 1987-88 to Vibec, a consortium in Canada. At that time Lima had a lot of financial problems. Then in about 1989 Lima was purchased from the Canadian company by Euronature, a large France-based international food company. Lima is presently doing well, and their traditional high standards of food quality are completely supported by Euronature. Mark Callebert is the manager of Lima; Pierre Gevaert no longer owns any part of Lima and is no longer active with the company. Lima is no longer making miso at their old mill on a river in the south of France. Lima also made rice cakes and ground their sea salt at that old mill. This mill was the Gevaert’s personal getaway and farmhouse, and he thinks they kept it when they first sold Lima, and no longer process food there. The Lima rice cakes may now be made in Belgium. Don thinks Lima Foods is now stronger than they were 5 years ago. Great Eastern Sun was the first company to import Lima’s miso into America, starting in about 1984, and they were the sole importer for about 18 months until Lima appointed Eden as their exclusive U.S. agent. Don’s current contact at Lima Foods is Mark Callebert. Don buys a lot of their salt in containers, directly from Europe, but he has to run the money and paperwork through Eden Foods. Don has exported several containers of miso to Europe through Sjon Welters’ wife’s brother, Adelbert, who used to work with Manna Foods in the Netherlands. He has also exported some to Erika Lemberger of EuroHealth. Bernard Faber also wants import Don’s miso. After the Chernobyl nuclear disaster, Mitoku’s sales of miso to Europe reached a new high, from which they have since dropped.

There is currently no major miso manufacturer in Europe. There is a small miso plant in Bristol, England named Source Foods, founded and run by Paul Chaplin, who Don trained at American Miso Co. for about 2 months. Chris at Mitoku recently told Don that Italy has recently become Mitoku’s biggest market for natural food products in Europe.

In short, there is great potential for miso in Europe, including Eastern Europe, although the political instability of Eastern Europe makes for a very risky financial environment there. Its a high risk, high gain situation.

Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3614. DeBona, Don. 1992. Work with tofu and soymilk in America (Interview). *SoyaScan Notes*. Feb. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Don has owned a part of Bean Mountain Soyfoods in North Carolina since 2-3 years ago; their biggest competition in the tofu market is Nasoya. Don was on the board of the Soyfoods Association of America, but he dropped it when he saw it was basically a tofu and soymilk association; he was “the token miso maker.” Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3615. Kushi, Michio. 1992. Introduction to *Culinary Treasures of Japan*, by John and Jan Belleme. 16 p. Jan. Unpublished manuscript.

• **Summary:** This manuscript, which was published in a condensed form in the actual book, tells the story of Mitoku and their work to export traditional Japanese natural foods to the Western world. Michio Kushi was instrumental in getting Mr. Akiyoshi Kazama involved in this work. Mr. Kushi, who became a World Federalist after World War II, came to the U.S. in Nov. 1949 to study at Columbia University. He continuously sought ways of establishing world peace, and increasingly came to believe that a proper diet is the basis for health, happiness, and peace.

In April 1966 the author’s wife, Aveline, opened a small store named Erewhon in Boston. Michio began to search for a Japanese source for foods that Erewhon would sell. He was introduced to Mr. Kazama (who lived in Tokyo) through a Japanese friend, Mr. Obayashi, who resided at that time in New York City. Michio felt that Mr. Kazama understood his desire for foods of high quality. So Mr. Kazama “began his search for food producers and manufacturers who were sincere and willing to supply the kind of quality we requested. I know that for him, at that time, it was a great gamble. It was also a painstaking and slow step-by-step process.”

Mr. Kazama was born on 1 Feb. 1930 in Yamanashi prefecture. He graduated from Waseda University in Tokyo, then was selected to study business in the United States. After arriving in Chicago, Illinois, he was drafted by the U.S. government to serve in the American Army in Korea and in Japan from 1956 to 1958. Upon his return to Japan, he settled in Tokyo where he became an import agent for a German company dealing in optics and electronics. After the Kushis contacted him, he became involved in the emerging natural food business. [He founded a company named Mitoku. Mi = Michio. To = Tomoko (Aveline’s given name in Japanese). Ku = Kushi].

In 1968 Mr. Kazama made his first shipment of Japanese natural foods to Erewhon; the order was worth \$3,000. The Kushis first met Mr. Kazama in Boston in 1970. Over the years, the volume of Mitoku’s exports steadily grew, and expanded to Europe, Australia, and the Middle East. Today Mitoku ships its products to about 35 countries.

Approximately 40% of Mitoku’s exports go to America, 40% to Europe, and 20% to Australia and other regions. Annual sales are about \$10 million. Among the major suppliers are Sendai Miso Shoyu Co. Ltd., Hacho Miso Co. Ltd., Hagoromo Miso, Ltd., Hanamaruki Miso Co. Ltd, San Iku Foods Co. Ltd.

Distributors of Mitoku’s products include the following: In the USA: Westbrae Natural Foods Inc., Great Eastern Sun Inc., U.S. Mills Inc., Tree of Life Inc., and Shojin Natural Foods (Hawaii). In Canada: Koyo Foods Inc., Flora Distributors Ltd., and Timbuktu. In Costa Rica: Distribuidora de Productos Macrobioticos S.A. In England: Sunwheel Foods Ltd, Clearspring Natural Grocer, Meridian Foods Ltd. In France: Celnat, Tama. In Belgium: Lima N.V. In the United Arab Emirates: Emirates Trading & Marketing Est. In South Africa: Key Health. In Austria: Naturkostladen, Lebenszeichen. In Switzerland: S’lotusbluemli, Terrasana, Futonhaus. In Sweden: Kung Markatta. In Norway: Alternative Import. In Finland: Makro Bios. In Portugal: Armazens Da Matinha. In Spain: Kunga. In Italy: La Finestra Sul Cielo, Probios S.R.L., Dalla Terra al Cielo, Solo Natura. In Israel: Tivoli Ltd. In Australia: Pureharvest. In New Zealand: Enso. In Singapore: Nature’s Best. In Yugoslavia: General Export. In Japan: Seibu Department Stores Ltd., Tokyu Department Stores Ltd. Among the countries reached indirectly through trans-shipment are Hungary, reached through Austria, various South American countries reached through the United States, and other countries such as Poland, Czechoslovakia, Iceland, Andorra, Ireland and the Caribbean Islands.”

As Mitoku developed its international operations, Mr. Kazama hired many students from Western countries, including Blake Rankin (USA), Ferro Ledvinka (Italy), Christopher Geoffrey Dawson (New Zealand, starting 1979), Robbie Swinnerton (England), Terrie Adams (USA), and Michelle Harbroun (France).

“For the past 10 years, Mitoku has echoed and supported the macrobiotic perspective with its motto ‘Isshoku-Dogen.’ These words, though they have been forgotten in the last few centuries by the very people in the health care field who should remember them well, mean literally ‘medicine and food have the same source,’ and can be translated as ‘food is medicine.’ This saying has been used and known as part of the ancestral heritage of wisdom transmitted from generation to generation for several thousand years in Oriental countries such as China, Korea and Japan.

“In an attempt to preserve Japanese traditions, Japan has instituted a ‘Living Treasures’ program granting official

recognition and support to [living masters in] various cultural areas such as theater, music, dance, sculpture, carpentry, weaving... and arts and crafts. Ironically, though, Japan has not granted the same official recognition to its traditional methods of food processing and production in spite of the fact that increasingly large numbers of people throughout the world are now appreciating traditionally processed Japanese food products and have become aware of their important health benefits. The Japanese traditional arts of producing miso, soy sauce, tofu, natto, amazake, rice vinegar, sake, mirin, condiments and pickles as well as cooking methods and preparation are unique among the culinary practices of the world... These foods are also works of art... It is my hope and recommendation that official recognition and support be granted by the 'Living Treasures of Japan' to those who have dedicated their life to the traditional art of food production and processing in spite of the hardships and commercial disadvantages they are compelled to face in business competition and present-day economical conditions." Address: 62 Buckminster Rd., Brookline, Massachusetts 02146.

3616. **Product Name:** Traditional Japanese Soup (in a Cup) [Mild Miso, or Dark Miso].

Manufacturer's Name: San-J International, Inc.

Manufacturer's Address: 2880 Sprouse Dr., Richmond, VA 23231. Phone: 800-545-9545 or 415-821-4040 (Perelman).

Date of Introduction: 1992. February.

Ingredients: 1995: Liquid broth in foil pouch: San-J rice miso (water, whole soybeans, rice, salt), kombu extract (seaweed, barley malt), water, alcohol, salt, shiitake mushroom powder. Dried vegetables in foil pouch: Fu ([baked] wheat gluten), tofu (soybean curd), scallions.

Wt/Vol., Packaging, Price: 0.930 oz (23.6 gm) net paper cup. By March 1995 1.1 oz. Retail for \$1.49 (3/95, California).

How Stored: Shelf stable.

New Product–Documentation: Spot in *Natural Foods Merchandiser*. 1992. July. p. 72. Shows a black-and-white photo of the side of both cups. Both products are prepared with real miso paste (not dried) for authentic Japanese flavor and texture. "Just add boiling water to create instant soup for lunch-on-the-go or a low-fat first course."

Talk with Steve Zoller of San-J. 1992. July 6. This product was introduced in Feb. 1992. Product with Labels sent by Steve Zoller. 1992. July 7. Illustration: On the dark miso a Japanese man drinking a cup of miso soup; on the mild miso, a Japanese woman doing the same. "Directions: Squeeze contents of miso packet into [paper] cup. Empty contents of vegetable packet into cup. Add boiling water to ½ inch from top of cup. Cover for 1 minute. Stir well before eating."

Ad (8 by 11 inches, color) in *Natural Foods Merchandiser*. 1992. Sept. p. 35. "188 years and one minute later, its soup." Shows a Japanese man and woman, kneeling on opposite sides of a low table in a tatami mat room, each drinking a paper cup of San-J miso soup. "Seven generations after San-J's founding fathers began making miso near Nagoya, Instant Miso Soup-In-A-Cup comes to America." San-J: Established 1804.

Product with Label purchased at Open Sesame in Lafayette, California. 1995. March 11.

3617. *Weight Watchers Magazine*. 1992. Chinese New Year. 25(2):45. Feb. *

• **Summary:** Includes recipes.

3618. Macdonald, Bruce. 1992. How Erewhon got involved in wholesaling and distributing natural foods (Interview). *SoyaScan Notes*. March 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In the spring of 1969, during Bruce's tenure as general manager, Erewhon got into the wholesale business, running it initially out of their retail store at 342 Newbury Street. Paul Hawken was not involved in the wholesaling to other companies before he left for Japan. Their store was divided into 3 parts: The front half was the retail store, the back half contained the mill (a little 5-inch Meadows Mill later used for grinding whole-grain flours), a walk-in refrigerator, and packing tables (where Bruce recalls working with Jim Docker, packing little 1-5 lb paper bags of grains), and the basement (connected to the ground floor by a dumb waiter) was the warehouse for storage of commodities.

The wholesale business began in the basement. It started because Erewhon got a good deal on some sesame oil. A company named Sesame Products had developed the Egyptian salt method of removing the husks of the sesame seeds. The company apparently went bankrupt, but actually they were a front for some illicit import dealings, such as electronic parts from Mexico. They got caught, and had to sell their high-quality oil. Erewhon bought the oil and some amber bottles, bottled the oil, and that was their first wholesale product.

Next Erewhon expanded its line of mechanically pressed, unrefined oils. Bruce had seen some expeller-pressed corn oil at Paul Keene's Walnut Acres, so he ordered it from Shawnee Milling Co. in Shawnee, Oklahoma. Erewhon considered hexane solvent extraction to be the "big bad method" of removing oils, expeller pressing to be so-so (because the temperature in the worm-screw reached 140-160°F), and hydraulic pressing to be the best since it kept the product coolest. This golden corn oil foamed upon being heated and tasted like butter in baked goods. Erewhon's third natural oil was a safflower oil. (In

1970 Paul Hawken wrote a pamphlet titled “The New Oil Story”).

Next Erewhon added a line of grains. They got non-organic brown rice from Koda Brothers in Dos Palos, California. The company was owned by Japanese-Americans, who were the first to break out of the cooperative marketing scheme, in which all growers mixed their rice together. They had rubber rollers, which did not scratch the grain during dehulling. Their Kokuho-Rose white rice has been the rice of choice for 30 years among Japanese-Americans. Bruce thinks they may have first sold brown rice (in 100 lb peat bags) to Infinity in New York, then to Erewhon.

Then Erewhon added a line of products imported from Japan. These first arrived in about Nov. 1968, just as the Erewhon retail store at 342 Newbury St. was opening. All the Japanese imports came in bulk from Muso Shokuhin in Osaka, rather than individually packaged. Tamari (from Marushima) and miso (including bulk mugi [barley] and Hatcho miso), moromi, etc. came in wooden kegs, loose, rather than in containers, so there was lots of breakage. Most of these imported products were stored in the basement. Erewhon bought some noodles (soba and udon in 5 kg boxes) from Japan Foods, then from Nishimoto Trading Co. and also from Muso. The product line was very simple, consisting of no more than 400 different items. The best-selling wholesale items were the oils, tamari, miso, rice, and imported kuzu, umeboshi (salt plums) and azuki beans. In the retail store there was no produce case or freezer, no vitamins or supplements, no potatoes or dairy products.

Initially, Erewhon’s largest customer was the combined 4-5 macrobiotic study houses in Boston, Massachusetts, accounting for roughly 50% of sales. Erewhon had an old van that delivered the food to the study houses, initially at retail prices; this business kept the retail store afloat. By the late spring of 1969 the wholesale business began to take off, and the macrobiotic study houses were now allowed to buy at wholesale prices. Some additional delivery trucks were acquired.

The macrobiotic products, other than what Erewhon imported, were only available in health food stores, through Chico-San. Because of the high mark-ups at several stages in the process, these products were tremendously expensive for consumers. So Erewhon decided to sell direct to East Coast stores, cutting out the distributors, to keep prices down. Now things started to move very fast, and Erewhon soon achieved national distribution. “It was like introducing products into a vacuum. The whole natural foods industry was starting up, all these little places like Eden Foods in Ann Arbor [Michigan], Tom Swan in Chicago [Illinois], etc.

Bruce traveled to New York and lined up new wholesale customers among macrobiotic restaurants and food stores. Samsara, a macro restaurant in the lower east side run by

George Abehsera, was Erewhon’s first customer and its biggest restaurant customer. (Michel Abehsera’s younger brother, George later became the baron of the clay and soap business, Three Sheaves, Pierre Cattier, then Nature de France). Right around the corner was Arnie Greenberg, who had a deli on the lower east side, and was one of the first to merchandise macrobiotic foods; he rapidly became Erewhon’s best customer. He was very busy selling a mish-mash of foods though he had no particular personal commitment to macrobiotics. Before him, Irma Paule in New York City had run “The Little Cupboard” but had gotten in trouble and was no longer in business at this time. Other good restaurant customers were the Paradox, and the Caldron (Gloria Bremmer at 308 E. 6th St.). The Good Earth, a retail store run by Townley, soon began to order; he was one of the original honest organic produce retailers. The restaurants and the food stores accounted for about equal sales volume for Erewhon. Erewhon shipped all its goods to New York (its sole market) via common carrier; Erewhon owned no delivery trucks of its own. There were no other natural food stores in Boston. One other unique customer was Jimmy Silver, who was macrobiotic, the manager of a rock band named Iggy Pop and the Stooges, and had hair down to his waist. He would drive down from New York with his cute little wife, Susie, and buy \$300.00 of food at a time for the whole band. It was the biggest single order that Erewhon ever got in those days. Not long after that, Jimmy dropped out of the music scene and came to Boston.

Then Roger took over from Bruce as general manager in about Oct. 1969, right after Bruce married Maureen, his first wife, and left for Los Angeles to set up a branch of Erewhon there. The little store had sales of about \$400/day. The day of Bruce’s wedding, in about Oct. 1969, was the first day that Erewhon’s sales topped \$1,000/day. It was a milestone day and in those days it seemed like big money. But 2 years later, Erewhon’s sales were \$20,000/day.

How did Erewhon finance this growth? At the beginning Erewhon, the trailblazer, was extremely profitable, since they had essentially no competition, and had thriving retail stores in Boston and Los Angeles. The dollar was very strong (from 1967 to 1971 one dollar was worth 355 yen), so Erewhon could buy an item for \$1, sell it for \$3.50 and still be \$2 under any competition (mainly Chico-San). Erewhon invented the concept of a natural food store. Fred Rohe in San Francisco had developed a related idea, perhaps a little before and in parallel with Erewhon. His Sunset Health Foods, later named New Age Foods, was a modified health-food store that sold vitamins, whereas Erewhon was a pure natural foods store, that didn’t sell vitamins. In addition, Erewhon had quality standards and a philosophy of foods that no one in the industry had.

After Bruce left, Erewhon moved into its first real warehouse on Farnsworth St. This represented the first real

commitment to the wholesale business. A fleet of trucks was acquired. Eventually semis were delivering all over New England. Address: P.O. Box 100, Cambridgeport, VT 05141. Phone: 802-869-2010.

3619. Macdonald, Bruce. 1992. The origin and development of Erewhon's operations in Los Angeles. Part I. 1969 to 1971 (Interview). *SoyaScan Notes*. March 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Erewhon started a retail store in Los Angeles because Aveline's youngest son, Hisao, had some form of leg disorder, congenital or from infancy, probably in his knee. Aveline found a Japanese doctor in Los Angeles who she believed (and it turned out that she was right) could cure it. But the doctor had to see Hisao almost daily. So in about August 1969 Aveline moved to California. Bill Tara went with her, while Michio stayed in Boston, Massachusetts. Aveline got a very nice house at 7511 Franklin Ave. in Hollywood. Later she moved into the former Japanese embassy, which was a mansion in a very nice neighborhood, several blocks away on [7357] Franklin Ave. Bruce also lived in this mansion. In Los Angeles, Bill Tara started Erewhon's second retail store, in large part because Aveline needed good macrobiotic food. Tara rented a very small space at 8003 Beverly Blvd. and called the new store "Erewhon West." Later the name changed several times, but it ended up being just "Erewhon." He got some cinder blocks and boards, ordered a shipment of food from Erewhon-Boston, then he opened the door. Initially, business was extremely slow.

Bruce was married on 13 Sept. 1969 to Maureen Trill in Boston. The marriage ceremony took place in the Old South Church, and some 200 people (including Michio Kushi) attended. It was the biggest wedding in the Boston macrobiotic community to date. Maureen had lived in a macrobiotic study house run by Susan Hillyard, and had studied cooking with Aveline Kushi and Susan Hillyard. About 2 weeks after the wedding, in early October 1969, Bruce and his new wife left Boston. At that time, Roger Hillyard took over as general manager of Erewhon-Boston from Bruce. They drove to Los Angeles, arriving in late Oct. 1969. The first thing he did was to build a walk-in cooler. Bill Tara, who was always more interested in the teaching, philosophical, and scholarly side of macrobiotics, left shortly after Bruce arrived. Bruce was more oriented toward the business side. Bruce became the head of the store, and Jimmy Silver soon came out from Boston to work with him at the store. Soon shipments of foods began to arrive directly from Japan, sent by Paul Hawken with whom Bruce talked frequently by phone. So in the summer of 1970 Bruce put out a wholesale price list and rented a warehouse (about 2,000 square feet) catty-corner across the street (something like 7990 Beverly Blvd.). Soon the first Erewhon products packaged in Japan began to arrive, and

because of these retail packs the wholesale business took off. The first seitan came in shrink packs; it later came in jars. Tamari was the best-selling import, followed by miso, then umeboshi. The foods still arrived in small boxes or single kegs; containers did not begin until later. At about this same time Tom DeSilva, a lawyer who became a yoga instructor, applied for a job as a janitor; he just wanted to be around.

Erewhon West soon outgrew its first warehouse, in part due to a deal made with the Lundberg Brothers. Bob Kennedy of Chico-San was the pioneer in contracting with the Lundbergs to grow short-grain brown rice in California. Chico-San had exclusive rights to all the rice produced by the Lundbergs. But Chico-San sold this rice for a high price, which prevented Kennedy from selling the amount he had contracted to buy. So a side deal was made, between Erewhon and the Lundbergs, in which the Lundbergs packaged the unsold rice exclusively for Erewhon and labeled it "unsprayed." Chico-San would not allow it to be labeled "organic." With this arrangement, Erewhon got into the rice business in a big way, selling their rice for \$11.00 a bag versus about \$30.00 for the same product from Chico-San labeled "organic." Brown rice soon became Erewhon's biggest product; they sold it to Eden Foods, Laurelbrook, Tom Swan in Chicago [Illinois], Tree of Life in Florida, Food for Health in Tucson (Arizona), some distributors in Northern California, Green Mountain Grainery in Boulder (Colorado), etc. It was rice that gave Erewhon nationwide distribution, putting their products in every natural food store in the USA. Bob Kennedy was furious but he was stuck with his contract, and Bruce thinks the Lundbergs eventually let Kennedy off the hook.

Now Erewhon-West began to catch up with Erewhon-Boston in sales because of two factors: They could get a shipment from Japan 3 weeks faster than Boston, and they were near the source of brown rice.

In late 1970, to keep up with the explosive growth, Erewhon rented a second warehouse at 8454 Steller Drive (10,000 square feet). In his "spare time," entrepreneurial Bruce founded two other businesses of his own: Pure & Simple, and The Natural Living Company. Pure & Simple, located in the Steller Drive warehouse, was the first of America's new wave of natural food snack companies. Bruce had talked over the idea with Paul Hawken, who felt that snack foods were not appropriate for Erewhon at that time. The company's first product was Corn Munchies, which was the first natural corn chip. They would make corn tortillas, cut them into wedges, fry them in sesame oil, and season them with tamari. The Corn Munchies soon became very successful. The Natural Living Co. made bodycare products and cosmetics, starting with Sesame Shampoo and Sesame Lotion. Bruce had met a brilliant chemist named Carlos de Villalvilla, a Cuban aristocrat who was head of research for Max Factor. Bruce asked him to

develop a line of cosmetics without preservatives or mineral oil (a vegetable oil should be used instead of a petroleum derivative).

By early 1971 Erewhon had outgrown the 10,000 foot warehouse and another 20,000 square feet in an old bakery, from which they did all transshipments to distributors. The store expanded twice, taking over the corner fish store, to 8001 Beverly Blvd. Continued. Address: P.O. Box 100, Cambridgeport, Vermont 05141. Phone: 802-869-2010.

3620. Macdonald, Bruce. 1992. The origin and development of Erewhon's operations in Los Angeles. Part II. 1971 to 1991 (Interview). *SoyaScan Notes*. March 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In one of its first issues (the very first was published in Jan. 1971), *East West Journal* published an interview with Bruce while Erewhon-Los Angeles was at the peak of its activity. They arranged for imports of natural foods from Japan to come into Los Angeles. They developed labels for the products with nice stories about each product; Burton Block did the graphics and helped with the text. He later became famous with the Nutragena designs.

In early 1971 Bruce found out that Paul Hawken had somehow obtained some stock and thus ownership in Erewhon and had not mentioned it to Bruce. So Bruce went back to Boston and discussed the matter with Paul. Paul said, essentially, "That's the way it is." Ultimately Bruce felt that Michio was to blame for the problem, but "when I found out that Paul had some stock, I felt he had broken a blood bond with me and deliberately deceived me. I was not upset at Michio. Basically I have always felt that he was just stupid. He had the greatest opportunity—like the founding of the computer industry and he was Bill Gates—and he couldn't comprehend the American entrepreneurial spirit. Michio's approach was the traditional Japanese one. You come to work for a company, we pat you on top of the head, you have lifetime employment, but don't ever ask to own any of it. He should have offered the people who conceived and built Erewhon partial ownership in the company to motivate them and to keep them around. Failing to do that was Michio's biggest mistake."

In 1970 *The Wall Street Journal* ran a front-page feature story on the emerging new natural foods industry. A person from Merrill-Lynch came in and said, "We could package this business and raise millions for you."

Bruce had always thought that Aveline had always owned all the Erewhon stock—from day one to the bitter end. The Kushi's attorney, Morris Kirsner, had put it in her name because they were worried about something happening like had happened to Irma Paule who ran the Ohsawa Foundation in New York. After Beth Ann Simon died in Nov. 1965, the FDA raided the Ohsawa Foundation late one night and found its Nature's Cupboard to be selling

food, as well as books, recommending the food as a cure for illness. Charged with "false advertising," the center was closed down, and the focus of macrobiotic teaching shifted to Boston. Michio was always concerned about teaching and being a purveyor of the foods about which he was teaching.

Seeing no future for himself in Erewhon, Bruce left Erewhon forever in May 1971 to attend to his two other thriving businesses. Bruce had been willing to work hard to build the company for a small salary (\$150/week), reinvesting all earnings, on the understanding that he would become a part owner later—the entrepreneurial way. Erewhon had more than 99% of the market share on all of the Japanese imports. Bob Kennedy was buying from Tokyo C.I., which was very tiny. They had excellent sources for oils and grains, had built "Erewhon" into the top brand name, and had developed an aura of almost invincibility and quality. In short, they owned the market they had created.

What happened to Erewhon-Los Angeles? One of the people who financed the early growth of Erewhon was John Deming, whose family were wealthy rice [sic, oil] barons. He married Judy Coates, lived on a trust fund, and invested something like \$150,000 to \$200,000 in Erewhon. Paul Hawken was close friends with him, in part because Paul married Judy's sister, Dora. Then (according to hearsay) something happened and John asked for his money back. Erewhon said they couldn't pay him, but offered him Erewhon-Los Angeles instead. So Deming ended up owning Erewhon-LA. [Note: For John Deming's version of this, see Dec. 1994 interview with him].

Today the store is owned by Tom DeSilva; it is named "Nowhere" and in the spring of 1991 it moved into a very fancy million-dollar complex up the street because the landlord refused to renew the lease.

During much of the early history of Erewhon, Paul Hawken was in Japan. Paul's main reason for going to Japan was so that Erewhon could develop consumer packages and have the products (tamari, miso, noodles, seaweeds, kuzu) packaged in Japan. Hawken didn't return from Japan until the Erewhon store and 2 warehouses in Los Angeles (8554 Steller Drive, plus part of an old gigantic bakery) were up and running at full speed. They could get imports from Japan 2-3 weeks sooner in Long Beach than in Boston. From the West Coast, they shipped the goods as far east as Chicago, Illinois.

Warren Clough of Shiloh Farms was involved with organic farming before Erewhon; Warren was a very early pioneer.

Very little documentation remains on the early history of Erewhon. In about mid-1971 *East West Journal* published an interview with Bruce about Erewhon, conducted by his first wife, Maureen. It contained a photo of Bruce, and a good chronology of developments at Erewhon-Los Angeles. That was the real active time for the West Coast. In

Aug. 1973 Paul Hawken wrote a self-serving article in *East West Journal* titled "Erewhon: A biography. The view within," which is full of inaccuracies. Bruce thinks that Patricia Smith (Patti, in Monrovia, California) might have early Erewhon catalogues. She was working for Trader Joe's until several months ago. She now has a new job elsewhere. Address: P.O. Box 100, Cambridgeport, Vermont 05141. Phone: 802-869-2010.

3621. Hayakawa, Tsuneo. 1992. Re: History of Hacho miso company. Letter to William Shurtleff at Soyfoods Center, March 17. 3 p. Handwritten. [Eng]

• **Summary:** There is firm evidence to show that this company was established in 1645. Most documents written during the Meiji period (1868-1912) state that the company was established in that year. "And a death register, which had been kept in the Buddhist temple where my ancestors' tombs stand, supports this view.

"Until about 1600, my ancestors lived in the area across the Yahagi River which runs 80 meters west of our company. Then very favorable social and economic conditions for a Miso company were realized. The stream of the Yahagi River became so broad that ships with heavy load could sail up and down very easily. Next, the Tokaido-Highway was improved...

"Therefore, present location at Hacho-Miso Company became very suitable for production and sales activity of Miso. Foreseeing the future, one of my ancestors decided to move to Hacho-cho to start the business. Besides, this place was gifted with good soybeans, pure water of the Yahagi River and excellent salt. Our company has more than one-hundred sales-record notebooks (*Daifukuchō*). Some of them were written in the Edo period."

The president and top man at Hacho-Miso company is now Kyūemon Hayakawa, his elder brother, who was born in 1916. His two sons are in charge of the actual daily business; one is vice-president and the other managing director. Address: Hacho Miso, 69 Okan-dori, Hacho-cho, Okazaki-shi, Aichi prefecture 444 Japan.

3622. Shimizu, Teruo. 1992. Recent developments at Miyako Oriental Foods (Interview). *SoyaScan Notes*. March 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Their Caucasian-American miso market is growing at about 10% a year. Miyako's total sales in America are growing at about 15% a year. They started using organic soybeans about 2 years ago, and that has helped the growth of their product in the natural foods market. The Japanese yen has steadily become more expensive (i.e. one dollar buys fewer yen), so the cost of miso imported to America has risen approximately proportionally. Thus many Japanese restaurants in America that formerly used imported miso are now buying their miso from Miyako. Miyako is not exporting any miso to Japan,

because the freight is high and there is also a high tariff on miso imported into Japan. Address: Vice President, Miyako Oriental Foods Inc., 4287 Puente Ave., Baldwin Park, California 91706. Phone: 818-962-9633.

3623. Halizon, Scott. 1992. Early work with natural foods and miso in Colorado. Joyous Revival and Eden Foods (Interview). *SoyaScan Notes*. March 25. Conducted by William Shurtleff of Soyfoods Center.

Address: Salt of the Earth, P.O. Box 1614, Rifle, Colorado 81650. Phone: 303-625-4444.

3624. Bateson, Betsy Reynolds. 1992. Tidbits on skewers... hot off the barbecue. *Sunset (Menlo Park, California)* 188(3):140-41. March.

• **Summary:** Contains a recipe for Miso- and maple-marinated pork with apple and onion; it calls for 1/3 cup *aka miso* (red fermented soybean paste).

3625. Bounds, Sarah. 1992. The subject of soya. *BBC Vegetarian Good Food (England)*. Spring. p. 28-29, 31-32.

• **Summary:** An introduction, with many color photos, to soyfoods, including TVP, tofu, soya milk, soya flour, soya oil, soy sauce, miso, tempeh, fresh soya [green vegetable soybeans; "soya beans can be eaten fresh straight from the pod, served green and tender..."], and whole dry soybeans. Contains considerable incorrect information.

3626. GEM Cultures. 1992. Catalog [Mail order]. 30301 Sherwood Rd., Fort Bragg, CA 95437. 9 p. March. [4 ref]

• **Summary:** A new addition to the catalog is "Tofu form boxes" named "Total Tofu!" Each is made by a local woodworker in Mendocino County using American beech wood. The 8 by 5 by 3½-inch size is large enough to press 2 pounds of tofu. Included also is a 3 oz packet of natural nigari, 3 ounces of Terra Alba calcium sulfate, a double square of Grade 60 cheesecloth to line the box, and directions on how to make tofu and soymilk. Price of a Total Tofu kit, postpaid, is \$32.00. Address: Fort Bragg, California. Phone: 707-964-2922.

3627. Johnson, Lawrence A.; Myers, D.J.; Burden, D.J. 1992. Early uses of soy protein in the Far East, U.S. *INFORM (AOCS)* 3(3):282-88, 290. March. [54 ref]

• **Summary:** A nice history of the subject based on a review of the literature. Contents: Early history in East Asia (industrial uses, chiang and miso, natto, tempeh, soymilk, tofu, shoyu). Emergence of U.S. soybeans (early soybean mills, ADM, Glidden). Chemical understanding of soybean protein (major components/fractions). First industrial applications (oil and meal). Soy protein-based plastics (Henry Ford). Chemurgic movement (U.S. Regional Soybean Industrial Products Laboratory, Northern Regional Research Center, Glidden). Soy protein adhesives (I.F.

Laucks). Paper coatings and sizings (Glidden). Soy fiber spinning (Ford, Azlon, Drackett). Other industrial uses. Address: Center for Crops Utilization Research, Iowa State Univ., Ames, Iowa 50111.

3628. Yamawaki, Teijirô. 1992. Edo jidai shôyu no kaigai yushutsu [Exports of shoyu from Japan during the Edo Period]. In: Noda Shishi Kenkyu (Studies of Noda History), Vol. 3. Noda, Japan: Shishi Hensan (Noda City History Editorial Committee). See p. 63-93. March. 30 cm. [50 ref. Jap]

• **Summary:** This is one of the best sources known on the subject, which includes much information on the export of shoyu from Japan to other parts of Asia and to the Netherlands by the Dutch East India Company (VOC).

Chronology and basic concepts: Almost all shoyu (soy sauce) exported from Japan during the 1600s and 1700s (and all soy sauce exported officially or legally) was exported from a tiny man-made island named Dejima in Nagasaki Harbor. Most of it was exported by the Dutch East India Company (VOC), which was the only European company allowed to trade with Japan during this period of isolation from 1600 to 1854. The Japanese government classified all soy sauce exported from Deshima into two basic types: (1) Official trade freight (*motokata nimotsu*, also called *compania nimotsu*), and (2) Private trade freight (*waki nimotsu*, also called *yakusha / sojya* {staff / sailor} *nimotsu*). Official trade freight was the kind engaged in by the Dutch East India Co.; this freight was recorded in the Nagasaki Trading Firm Journal. Private trade freight referred to the goods traded privately by Dutch sailors and by the chief and staff working at the Nagasaki Trading Firm.

Note: In about 1600 the Chinese obtained an official trade permit and settled in Nagasaki. At the peak of Chinese activity there, about a century later, as many as 190 Chinese ships a year were visiting Nagasaki, and one-sixth of the town's population hailed from the East Asian mainland.

1609-1641—The Dutch East India Co. (VOC) maintains a trading post at Hirado, a small island off the northwest coast of Kyushu.

1634—Dejima (literally “protruding island,” also spelled Deshima), a small artificial island in Nagasaki Harbor is constructed as ordered by shogun Iemitsu; it originally accommodated Portuguese merchants.

1638-1639—The Portuguese (and other Catholic nations) are expelled from Japan for suspected complicity in the Shimabara Revolt of 1637.

1641 May—The Dutch East India Co. is moved from to Hirado to Dejima, where they were kept almost like prisoners on the tiny island. For 200 years, Dutch merchants were generally not allowed to cross the little bridge from Dejima to Nagasaki, and Japanese were likewise banned from entering Dejima. From 1641 to 1853 the Dutch are the only Western nation allowed to trade with or to enter Japan,

but solely on Dejima. Chinese and Korean traders are still welcome, but their movements are restricted.

Dutch ship arrivals: From 1641 to 1671 an average of 7 ships per year. From 1671 to 1715 about 5 per year. From 1715, only 2 ships were permitted each year; this was reduced to 1 ship in 1790 and again increased to 2 ships in 1799.

1647—Exporting of shoyu (soy sauce) to Asia from Japan (as official trade freight) began. The first shipment was 10 kegs (*taru / balien*) sent to Amping, on today's Taiwan, by the VOC's Taiwan Trading Firm. From 1647 to 1720, this shoyu was exported from the Nagasaki Trading Firm to each regional trading firm in Asia, including today's Hanoi, Vietnam (1652); Ayuthaya, Thailand (1657), Jakarta, Indonesia (1659), Malaca, Malaysia (about 1860), 250 km northwest of Phnom Penh, Cambodia (1665), Paliacatta, 40 km north of Madras, India (1666), Bengal region, India (1666), Colombo, Sri Lanka (1670), Surat, northwest coast of India (1672), Amboina, Banda, and Ternate, in the Moluccas, Indonesia (1693), Sulawesi Island (Celebes), Indonesia (1693).

1685—The Shogunate at Edo limits the amount of “private trade freight” to 400 *kan* (1 *kan* = about 3.75 kg), or about 1,500 kg or 3,300 lb.

1669 March 31—20 kegs of shoyu are shipped from Japan to Batavia on a Chinese ship (Source: Diary of Casteel Batavia). This is the earliest document seen showing a Chinese ship exporting shoyu from Japan.

1687—20 kegs of shoyu made in Kyoto (1 keg = about 29.104 liters) is shipped to the Ceylon (today's Sri Lanka) trading headquarters. It is believed to have been made by a sake brewer in Kyoto. At that time, Sakai city, a southern suburb of Osaka city, was located on the edge of Osaka Bay at the mouth of the Yamato River. It is one of the largest and most important seaports in Japan during the Medieval era, and is also famous in the Kyoto/Osaka (along with Kyoto) for its soy sauce production. During the period 1764-1780 shoyu was made in Sakai by 4 manufacturers, including Shobei Hosoya. Soy sauce made in Sakai was transported by ships along the Inland Sea (north of Shikoku), through the narrow straight between northern Kyushu and Shimonoseki, around the north and west sides of Kyushu, to Nagasaki. These ships from Sakai were called the “Sakai Raw Silk Carrier Boat” or *Sakai Bune*. They had been authorized to ship imported silk from Nagasaki since the Keichô period (1596-1611) of Edo era. The ship was empty going back from Sakai to Nagasaki and the space was used for soy sauce exports. Much of the shoyu exported from Japan to the Netherlands is thought to have been made in the Kyoto / Osaka area. It was probably made mainly in Sakai, while that made in Kyoto was exported in small amounts for special occasions. Extremely low priced shoyu is thought to have been made in Kyushu, and exported to China. None of the shoyu exported during the Edo /

Tokugawa period (1600-1867) was made in the Edo / Tokyo (*Kanto*) area.

1711–In the Chinese and Western Freight Log it is recorded that 61 kegs of shoyu (56 large kegs and small kegs) as well as 40 kegs of miso were exported as “official trade freight,” whereas 867 kegs were exported as “private trade freight.” Thus, the private freight (in this rare year where records exist) was about 8 times as much as the official freight.

1712–Some 999 kegs of shoyu and miso are exported as “private trade freight.” Unfortunately we are not told how many of these contained shoyu and how many contained miso.

1721-1792–The VOC exports Japanese shoyu only to its trading headquarters at Batavia (today’s Jakarta, Indonesia); from there it is transferred to each regional trading firm.

1737–The VOC first exports Japanese shoyu to the Netherlands, from its Batavia headquarters. Thus, Japanese soy sauce first arrived in the Netherlands (and in Europe) in 1737. All this shoyu was exported as “official trade freight.” This export route was used until 1760. During the 24 years from 1737 to 1760, approximately 46,000 liters of soy sauce were exported from Dejima to the Batavia headquarters, and 15,600 liters (about 1/3 of the total) were then shipped from Batavia to the Netherlands. In 1742 and 1743, no shoyu was transhipped from Batavia to the Netherlands. Thus, during the 22 years that shoyu was transhipped from Batavia to the Netherlands as “official trade freight” was about 707 liters/year. The amount exported was calculated based on the capacity of the “large keg” (29.104 liters); the small keg held exactly half this capacity (14.552 liters). In addition, a substantial amount of shoyu was presumably exported from Batavia to the Netherlands as “private trade freight.”

Also in 1737 the limit of 400 *kan* on “private trade freight” is abolished, so that any amount can be exported in this way.

1790–Shoyu is first exported from Japan in comprador bottles; these bottles, made of grey / white porcelain, were recorded as “sterilized soy sauce” and 550 of them were used this year to export shoyu.

1795–The book titled *Travels in Europe, Africa, and Asia, Made between the Years 1770 and 1779...*, by Charles Peter Thunberg (a Swede) is published in English. An entry from about the year 1776 (Vol. 4, p. 107), in the chapter on Commerce, reads: The traffic in Soy [sauce]... is more considerable [than that of tea. Japanese] soy is much better than that which is brewed in China. For this reason, soy is not only exported to Batavia [Jakarta], in the wooden kegs in which it is made, but likewise sold from thence to Europe and to every part of the East Indies. In some places in Japan too the soy is reckoned still better than in others; but, in order to preserve the very best sort, and prevent its undergoing a fermentation, in consequence of the heat of the climate, and thus being totally spoiled, the Dutch at the

Factory [at Desima / Dezima / Dejima] boil it up in iron kettles, and afterwards draw it off into bottles, which are then well corked and sealed [by applying bitumen / coal tar to the stopper]. This mode of treatment renders it stronger and preserves it better, and makes it serviceable for all kinds of sauce.

Note: This early discovery of pasteurization and sealing in porcelain bottles explains how the Dutch were able to keep this soy sauce from spoiling becoming overfermented while it was being shipped from tropical Japan, to Batavia [Jakarta], across the Equator, around the Cape of Good Hope (south of Africa), then all the way to the Netherlands.

1799–The Dutch East India Co. (VOC) is dissolved.

1804-1829–A total of 2,672 kegs of shoyu is exported in Chinese ships during most of these 26 years from Japan. About 153 kegs/year are exported (range: 12 to 322 kegs, but with no exports in 1805, 1816-18, 1824-28).

1854–Japan’s policy of self-imposed national isolation is abolished / ended. Shoyu can be exported freely, without limits.

Some 670 liters a year went to Holland. The soy sauce to be sent to Holland was put in a special container with special outside packaging. The shoyu that was exported was made mostly in Kyoto and In 1765 the famous French-language *Encyclopedia*, by Denis Diderot had a section on soy sauce.

Brief biography of Teijirô Yamawaki: 1914–Born in Japan. 1950–Graduated from Tokyo University, Dep. of Literature, Faculty of Japanese History. 1954–Awarded his doctorate (PhD) in history from Tokyo Univ. Between 1960 and 2002 he was the author of at least 8 books in Japanese including: (1) *Smuggling (Nukeni)* (1965, Nikkei Shinsho). (2) *Trading with Chinese Merchants in Nagasaki* (1964, Yoshikawa-kobunkan). (3) *Nagasaki Trading Firm of Dutch Merchants* (1980, Chiokoron). (4) *Encyclopedia of Silk and Cotton during the Edo Period (Jiten Kinu to Momen no Edo Jidai)* (2002, Yoshikawa-kobunkan, Tokyo, 230 p.).

Note: See also the excellent 16-page English-language summary of this report prepared and published by Kikkoman Institute for International Food Culture (KIIFC) in Noda, Japan. Address: Japan.

3629. Amartseff, Nik. 1992. The invention and commercialization of roasting soybeans, seeds, and nuts with shoyu or tamari: Hopi Seeds and Nik’s Snaks at Erewhon (Interview). *SoyaScan Notes*. April 3. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In about 1969-1970, Nik met Paul Hawken at New Age Natural Foods in Palo Alto, California, where Nik had been hired by Fred Rohe to create the natural deli department. Nik knew David Mastrandrea. Paul offered Nik a job at Erewhon. When Nik saw the coming demise of New Age, he accepted Paul’s offer, and arrived in Boston in about May of 1971.

At about the same time, Paul met a guy named Jerry (his last name started with “S,” perhaps “Sh,” and sounded like a German Jewish name). Jerry was roasting very small batches of sunflower and pumpkin seeds in iron skillets in his home kitchen in Berkeley, California; while they were still hot, in the skillet with the fire off, he would season them by rapidly mixing in undiluted tamari and continuing stirring until the liquid was evaporated and the flavor absorbed by the seeds. He bagged them and peddled them on the streets. Nik thinks that Jerry launched the first such commercial product, probably in about 1968. He had become reasonably successful when Paul met him in about 1969-1970, so Paul invited him to come to Boston, where Paul set him up in a corner of the recently acquired warehouse at 33 Farnsworth St. Jerry started production using his former simple, skillets, then Paul helped him to buy a used cast-metal tumbler-style coffee roaster, converted to a peanut roaster, that could process 50 lb at a time. After being roasted, the seeds were poured into a large rectangular sieve, custom fabricated for this purpose. Jerry was making and packaging this line of Hopi Seeds as a one-man operation. Each seed was roasted and seasoned separately. They were on the market sometime between late 1969 and early 1970. His production soon exceeded his ability to handle it; he was selling through Erewhon wholesale. When Nik arrived in May 1971, Hawken asked Nik to assist Jerry. But after 1 month, Jerry suddenly disappeared—it was apparently related to his selling marijuana on the streets. Soon thereafter, by the summer of 1971, Nik increased the line from 2 products (sunflower, and pumpkin seeds) to 5 (almonds, cashews, and soybeans). They were sold in 1 oz polyethylene-cellophane bags. Erewhon had received a shipment of specially processed, split soybeans, from a new easy-to-clean, easy-to-empty roaster made of sheet steel was developed (it’s construction resembled a cement mixer). While the roasted seeds were still inside, Nik would spray in the tamari using a sprayer with a long nozzle, then finish cooking them on low heat.

When Nik arrived in May 1971, the main soy products that Erewhon sold were traditional tamari and miso, imported from Japan, plus soybeans and soy flour (toasted from Arrowhead).

By the fall of 1971 Nik was no longer directly involved with manufacturing the tamari-roasted seeds and nuts; he had been promoted to installing Erewhon’s first semi-automatic equipment to make the Hopi Seeds, granolas, etc. The main management people at Erewhon in those days were Paul Hawken (the alleged head), Bill Tara, Hy Lerner, and Yuko Okada (of Muso Shokuhin). Wally Gorell (who was designing packages for a while). Erewhon was setting up its West Coast operations at this time and there seemed to be an ongoing power struggle between Hawken versus Tom DeSilva and Roger Hillyard. At one point, Roger went to Arrowhead Mills. Nik continued to work for Erewhon until

about May 1972. Later he returned in Sept. 1973 and stayed until about 1977.

At one point, Wally left Erewhon and Paul Hawken got a small graphic design firm to design a more sophisticated label for the Hopi Seeds and to change the name. The name they came up with was Sol Seeds, with a stylized logo of the sun. But the name had not been researched and the owner of that registered trademark threatened to sue. By now Paul Hawken was gone and Ty Smith was president. When Nik returned to Erewhon in Sept. 1973, he renewed his involvement in this line, which still contained only 5 items. By about 1974 he had built the line into one that contained up to 12 products, including trail mixes and mixed nuts and seeds. So at that time Ty honored Nik by renaming the line “Nik’s Snaks.” The name “Sol Seeds” never appeared on a commercial Erewhon product. By the time Nik left Erewhon in about 1977, there were about 18 items in the Nik’s Snack line, a total of about 30 products including the various sizes of one product. Nik had taken a home operation, that never got sophisticated but was based on a good idea, and made it sophisticated in terms of the manufacturing process, product development, the package design, and the marketing. Nik’s Snaks were a good-selling product for Erewhon for as long as the company existed. Many other natural foods companies developed their own competing lines of “tamari-roasted seeds and nuts.” Address: Right Hand Press, P.O. Box 100, Cambridgeport, Vermont 05141. Phone: 802-869-2010.

3630. Macdonald, Bruce. 1992. Introduction to macrobiotics and early work at Erewhon (Interview). *SoyaScan Notes*. April 5. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bruce was born on 5 Feb. 1946 in New London, Connecticut. In 1964 he entered the University of Connecticut, and essentially majored in LSD. He was an early buyer (for personal use only) of LSD from the Boohoo Church in Florida. This “Church” was the original importer of LSD from Sandoze Labs in Switzerland. Arthur Klets was head; Timothy Leary and Richard Alpert were involved.

At Christmas, 1965, Bruce dropped out of the university because he had a kidney disease that just wouldn’t go away. He went to a doctor who gave him, sequentially, 4-6 varieties of antibiotics. Each one worked for several weeks until the microorganisms became resistant. Seeing that he was on a dead-end road at age 18, he freaked. He took a bus to New York and sitting near him was Kathy Bellicchi (who is now living in Brookline, Massachusetts). She said to him, “Just eat brown rice and salt and it will go away.” Bruce began to study macrobiotics, and yin/yang. Finding a chart which showed buckwheat to be the most yang grain, he decided to start eating buckwheat as his main food. He moved to Vershire, Vermont (a good, clean, quiet place for healing) and began living in a cabin with Bort Carleton (a

shoe tycoon in Boston), who was also involved with macrobiotics. Bort also sponsored a macrobiotic study house. Soon he was cured—permanently—of his kidney disease. He became a true believer in macrobiotics. He and Bort would drive to Boston to listen to Michio Kushi's lectures in the old church.

In June 1967 Bruce moved to Boston, and began to live in the University Road study house. After four quick affairs with lovely young women ("I was really yang"), Michio called him over to 216 Gardner Road and asked him to "chill out" (calm down) with these girls, since Michio was "involved" with the same young ladies. Michio and Aveline had initially gotten together in a marriage arranged by George Ohsawa, who sent Aveline to America to marry his best student. Michio and Aveline had an "open marriage," and both of them had affairs with younger people of the opposite sex the whole time that Bruce was in Boston. This was well known in the upper echelons of the still small macrobiotic community.

By late 1967 Bruce was working as a carpenter for Michio's landlord (Mr. Fogelman), redoing his house at 216 Gardner Rd. Paul Hawken hired Bruce to be the contractor and carpenter to remodel the new Erewhon retail store at 342 Newbury St. Bruce did most of the design and contract work, then he assisted Jim Docker (a master carpenter) in the remodeling, getting thick planks from Boston piers for the floors, and constructing the shelves with dowels rather than nails. Erewhon had a little store below street level at 303-B Newbury Street, that later became Tao Books. While the business was at 303-B Newbury, in Aug. 1968 the first imports from Japan started to arrive from Muso Shokuhin. These included tamari (soy sauce) and miso. But Erewhon was unable to get Hatcho miso ("the Emperor's miso") in foil packs, and that was Erewhon's first contact with Mr. Kazama; he was able to get that product for Erewhon in less than boat-load quantities. From then on, Erewhon started to import from both Muso and Kazama/Mitoku. The Erewhon store at 342 Newbury St. opened in November 1968, on Thanksgiving day, and several months later, in March 1969, Paul Hawken went to Japan. Paul asked Bruce to take over as general manager of Erewhon. Roger Hillyard ran the retail store in the front of the building.

What finally happened to Erewhon? Michio always said that Erewhon was a school; he should have said it was a business. Address: Right Hand Press, P.O. Box 100, Cambridgeport, Vermont 05141. Phone: 802-869-2010.

3631. Kushi, Michio. 1992. The main reasons for Erewhon's decline and bankruptcy, and current work with macrobiotics worldwide (Interview). *SoyaScan Notes*. April 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Michio has thousands of files in his basement, and some of them probably contain early catalogs and other information about Erewhon. Erewhon definitely started to

import from Mitoku first, and then Muso—but they were about the same time. Michio set up all these connections before Paul Hawken went to Japan. Mr. Kazama came to America and they talked about the items Michio wanted to import. Then Muso was approached. Michio thinks Erewhon started importing foods from Japan 1-2 months before Hawken went to Japan. Hawken and Evan Root went to Japan at the same time. The main purpose of Hawken's trip was to study Japanese language and culture, and to set up more good connections for Erewhon and to arrange for products to be packaged individually; previously all were shipped in bulk. Paul didn't find out any new sources, Mr. Kazama did that.

Michio believes that there were two main reasons for Erewhon's decline and bankruptcy: (1) The company tried to expand too much too fast. At the end it was selling 4,000 products; (2) This rapid expansion led to Erewhon having many poor quality products. The company should have concentrated on high quality macrobiotic foods. Management wanted to have a wider selection of products, in part because competitors were offering a wide selection. Also, Erewhon gave up its virtual monopoly on macrobiotic-quality products imported from Japan and revealed many secrets about the Japanese manufacturers and suppliers of those foods and how those foods were made. If he had to do it over again, Michio would concentrate on only the best quality foods, and let the company grow slowly and naturally. For example, the quality of tamari soy sauce began to decline at a very early date. Likewise with the umeboshi plum and sea vegetables. "The quality of every product was declining because of too rapid growth in the company's sales. Moreover the educational activities didn't keep up with the company's growth. Muso and Mitoku have been keeping good quality as best they can but the so-called other natural food buyers, who were not concerned with macrobiotics, also started to go to Japan and buy those products, not only from Muso and Mitoku, but from other suppliers too—especially suppliers of soy sauce and miso with lower quality. These inferior quality products were retailed for a cheaper price at stores in America. The public did not know about the difference in quality, so Erewhon began to face big competition.

Even though Aveline owned Erewhon, neither she nor Michio ever received any salaries or money from the company. They wanted to let the management of Erewhon have a free hand, so they didn't tell them how to run it—to slow growth and concentrate on keeping quality high. "Erewhon was more like an educational place." There were debates over whether or not Erewhon should carry organic cheese and vitamins. Michio and Aveline opposed carrying these products, but let management do as it wished.

At the time Erewhon was growing most rapidly, the company needed money to finance the expansion, but bank interest rates were extremely high—about 15-18%. Inventory

control for 4,000 items is very difficult and expensive; it requires a large warehouse and shallow inventories. During the last few years, Erewhon was able to fill only 40-50% of its orders because so many items were out of stock. Also as the company grew, many non-macrobiotic employees had to be hired to drive the delivery trucks, and they created a labor union. Erewhon had to battle with this union for 1½ to 2 years, and that cost a great deal of money. Truck drivers cut prices to stores in order to try to meet the prices of competitors. Financial difficulties piled up starting at the time when interest rates jumped and the union was formed.

Bill asks why Aveline and Michio didn't give talented managers a share of the ownership in Erewhon to motivate them to stay with the company. Michio says that Paul Hawken owned one-third of the Erewhon shares. Evan Root owned shares in Sanae. The Kushis paid all or part of Evan and Paul's travel and living expenses in Japan. Paul got his one-third shares after he returned from Japan and became president. When he resigned, he was definitely paid for the value of his shares. Paul wrote from California that he needed the money and offered to sell back his shares. So Michio and Aveline sent him the money and Paul sent his shares back to them. Only later did Michio learn that Paul needed the money because of his divorce from Dora Coates. Other people (whose names Michio also remembers) also owned some shares. Michio does not feel that giving managers ownership would have helped Erewhon. Michio thinks that the people who managed Erewhon during its last 5 years had the necessary business skills necessary to manage a company of that size that was growing rapidly.

Another reason for Erewhon's fall was that Michio did not pay serious enough attention to what was happening at Erewhon. He was too involved in teaching in America and Europe. At the time he noticed what was happening and stepped in, the situation had already become too serious. There was much sloppiness allowed by management, even though their intentions were good. He should have noticed a year before. It was a very sad situation. "Yet Erewhon had meaning as a pioneer company. That spirit still remains. My purpose at present is to continue education all over the world. Macrobiotics is now spreading all over the world, even to the Soviet Union, Thailand, and Japan. In Leningrad some 300 medical doctors are now studying macrobiotics as a group to help find a solution to the health problems of their country. His books are being translated into many Eastern European languages. Also it is very important to reach the scientific, medical, and nutrition professions—as well as governments. Their attitudes are now rapidly changing. Macrobiotics is now growing tremendously. My main concern with natural foods is that the quality be kept very good. My current effort is to elevate the quality of each product. For example, miso should definitely be fermented for 2-3 years. Soybeans and grains should all be organically grown, and only very good sea salt should be used—such as

that made by S.I. Salt, an American company in New Mexico, and Lima salt in Europe [from Lima Foods in Belgium]. Michio now goes to Japan twice a year, and there he gives many lectures all over the country, helps to set up chapters of One Peaceful World, and works with food makers on product quality. He also formed the Japan Organic Natural Food Association (*Yûki Nosui Sanbutsu Kyôkai*) in Japan, of which he is president. About 200 companies are members.

On the one hand, Michio is happy with the way his work is going now. "But of course, I am always dissatisfied too. My time and my ability are limited. I can't help as many people as I would like. The demand is so great. So I always feel sad on that point. Whenever you talk with people from Erewhon, please extend my best wishes. And say always that Michio is thinking of them and their happiness. I hope sometime in the future we can get together. Then we can talk more about how to build one peaceful world—and not only food, but more about health, families, government, economics, and spiritual matters, and how to make the many countries more united and harmonious in one world. Let's work together." Address: 62 Buckminster Rd., Brookline, Massachusetts 02146. Phone: 617-232-6869.

3632. Kotsch, Ronald. 1992. Recollections of the early days of Erewhon and Japan (Interview). *SoyaScan Notes*. April 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ron does not have any early Erewhon catalogs because he does not collect things. He gave all the research materials he gathered while writing his PhD thesis on George Ohsawa and the history of macrobiotics to Marc van Cauwenberghe's library; much of the material was in Japanese (photocopies of Ohsawa's books) and the rest was the English-language notes Ron took while reading these many books and other Japanese-language writings. However he will check to see if his sister has any early Erewhon catalogues.

Ronald was the manager and only employee of Erewhon in the summer of 1967, from early June to August, while the retail store was still downstairs at 303-B Newbury St., shortly before Paul Hawken arrived. Ron thinks he took over from Eizo Ninomiya, a Japanese fellow who barely spoke English and who replaced Evan Root in the spring. Eizo had come to teach a rather obscure form of jujitsu. Ron quickly learned that he was not cut out to be a businessman. The main products he sold (from rough wood shelves) were Kokuho-Rose brown rice, whole wheat flour and beans (which he bagged), Sahadi sesame butter, sea vegetables, and miso. He remembers bagging foods endlessly. Erewhon was probably ordering a lot of products from Infinity Foods, so the miso may well have come from them. He lived at the Gardener Road house and he would give Aveline the day-end receipts, which averaged about \$50-60 a day that

summer. One day he couldn't account for \$5 and it was a big thing. In the evenings he and 8-10 other people would gather for Michio Kushi's talks in a back room at the Arlington Street Church. Ronald thinks he was replaced by Paul Hawken and Bill Tara. Ron does not know who owned Erewhon.

Ron went to Japan in the fall of 1967 with a vague plan to study Japanese culture and macrobiotics. He had studied Japanese at Harvard for a year the previous year, before he discovered macrobiotics. He was the first person from the Boston community to go to Japan for this purpose. Cecil and David Levin came in the spring of 1968. Ron studied with Japanese people, including an acupuncturist named Take Nouchi. He took flower arrangement classes at Nippon C.I., which had a cubbyhole in a huge commercial building. He lived with Michio Kushi's parents for the first 4-5 months (early Dec. 1967 to early April 1968), in Japan, at Hoya near Tokyo, then he moved to Kyoto and enrolled in Kyoto University as a research student. After 4 months, in Aug. 1968, he returned to America.

In 1976 Ron resolved to finish his graduate studies. To receive a doctoral degree in History of Religions from Harvard he needed only to write a dissertation. So he brushed up his Japanese and flew to Japan in Feb. 1977. He enrolled immediately in Kyoto University, got some jobs teaching English in colleges there, and spent the next 18 months collecting books and papers about Ohsawa, 95% in Japanese, and conducting 15-20 interviews. In July 1978 he returned to Boston and for the next 18 months he read and took notes on the documents he had collected. In the 2-3 years after he finished the thesis, he received 200-300 requests for copies of it, indicating that there was an interest in the history of macrobiotics. This led him to write a book on that subject at the request of Japan Publications. It has sold about 7,500 copies. In 1987 his book *Macrobiotics: Beyond Food* was published.

Ron continues to write: he is now interested in Rudolf Steiner, Anthroposophy, and Waldorf Schools, plus the Alexander Technique related to body awareness. He is the editor of a magazine that deals with Waldorf education. He writes a little for *Natural Living* and *New Age* magazines. Address: 4 Hulst Rd., Amherst, Massachusetts 01002. Phone: 413-256-6478.

3633. Root, Evan. 1992. Recollections of early work with Erewhon and Sanae. Trip to Japan with Paul Hawken (Interview). *SoyaScan Notes*. April 11. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter of April 29.

• **Summary:** Evan (his first name rhymes with "heaven") does not have any early Erewhon catalogs, but he thinks Marc van Cauwenberghé might have some in his library on macrobiotics. He does have a letter to the general public announcing the opening of the first Erewhon retail store on

9 April 1966. It was at 303-B Newbury St., below street level. Initially Evan owned (titularly) 100% of the stock in Erewhon, but soon he passed it to Aveline Kushi after legal documents were drawn up. While he was at Erewhon the little retail store sold the following soy products: whole soybeans and probably soy flour (probably from Walnut Acres or a Mennonite community, both in Pennsylvania), soy sauce and miso (probably both obtained from Infinity Foods in New York; Infinity imported these products from Japan). Hamanatto was also sold. No tofu was sold at the store, but firm tofu was available from nearby Chinatown.

The Kushis imported miso, shoyu, condiments, etc. from Japan about twice while Evan was managing the Erewhon retail store. This direct importing was infrequent and the quantities were small due to the lack of cash. It was much easier to buy from Infinity or Chico-San and not tie up the money. In fact it was the norm to stretch out those friendly distributors as long as possible for payment.

Before he left Erewhon, in Oct. 1967, Evan personally hired Paul Hawken, with Aveline's permission, to take his place. Then Evan opened the first macrobiotic restaurant in Boston, named Sanae (meaning "young rice plant" in Japanese); it opened in early 1968 on Newbury St. In late March 1969, Evan and Paul Hawken left Boston and traveled to Japan together. Several months before they left, Evan had been given 50% of the shares of stock in Sanae by the Kushis for the work he had done at Sanae. The Kushi's lawyer, Morris Kirsner, had drafted the agreement to read that if Evan did not return to management of the company within 18 months, he would agree to sell this stock back to the Kushis at an agreed-upon price. Evan thinks that Paul had a similar type of stock arrangement in Erewhon, but he is not sure what it was (Note: See interview with Aveline Kushi, March 1993). Evan went to Japan mainly to study the language and culture. He ended up staying there 3 years and 7 months, largely in Tokyo (Setagaya-ku, Shoin-jinja-mae). He studied Japanese at the Tokyo School of Japanese Language. After 18 months, there was a lad name Hiro Fujieda living with the Kushis in Boston. Rather than Hiro pay rent to the Kushis, Hiro's family would pay Evan monthly in Japan on a monthly basis—until the value of the stock was paid off. Evan used this money to support his studies.

After about a year, in late 1971 or early 1972, Evan went to work for Muso Shokuhin in Osaka. He translated letters that arrived from Europe and America into spoken Japanese, and then answered the correspondence. By the end of his stay in Japan, Muso was exporting quite a volume of natural foods and exports were a big part of the company focus. Evan thinks that Ty Smith took his place when Evan left.

Returning to Boston in early Oct. 1972 (along with Mr. Masuda and Michelle Matsuda), Evan became an employee of Sanae after several months, working as maître d'. In 1971, while Evan was in Japan, Sanae had expanded to

open another larger branch restaurant in Boston, originally called “Sanae” but informally called “Big Sanae,” then later formally named The Seventh Inn (at 269 Boylston St.). When Evan was in Japan, he heard that the restaurants were not doing well, so Yuko Okada (originally of Muso Shokuhin, who was working at Erewhon) took over management of Sanae. Hiroshi Hayashi, a top cook in a lineage, traveled to Boston from Japan, bringing with him his disciple, Chika Abe, to take charge of cooking at Sanae. His disciple, Mr. Yozo Masuda, later joined them. Hayashi is now at a restaurant named Latacarta in Peterborough, New Hampshire (Phone: 603-924-6878).

Evan’s recollection is that Paul Hawken’s trip to Japan was more to study the language and culture, but he did work on Erewhon business while he was there. Moreover, he returned from Japan after about 9 months to work at Erewhon. Evan feels that few of the people involved in early macrobiotic businesses saw themselves strictly or even mainly as businessmen. “None of us were in it, as I saw it, for the money. For us, the whole thing was a Cultural Revolution with respect to Japan.” Evan also identified strongly with the phrase “Biological Revolution.”

When Paul Hawken returned from Japan, he built Erewhon into a big natural foods company. Address: 541 Washington St., Brookline, Massachusetts 02146. Phone: 617-566-4783.

3634. DeBona, Don; Callebert, Mark. 1992. Update on Lima Foods and Euronature (Interview). *SoyaScan Notes*. April 19 and 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The following is based on a talk that Don had in North Carolina with Mark Callebert, general manager of Lima Foods in Belgium, then a direct interview with Mark in Belgium on April 23, followed by a letter from Mark on June 16 with exact dates. Mark has worked with Lima for about 16 years (since 1 Sept. 1975).

The Gevaert family sold Lima in May 1988 to a company named Vibec in Quebec, Canada. Vibec was a construction company (they were not involved with foods) and the owners spoke French. The contact with Vibec was made via Henry Lucy, a Frenchman who was on the Lima board of directors (and also a shareholder), who was a friend of Michio Kushi (Michio had healed Henry’s wife), who had quite a lot of money, and who also had a construction company in Africa. Michio was also on the Lima board for a while. Vibec purchased Lima as a way of getting involved in the new European market without borders which will begin at the end of 1993. However Pierre Gevaert and his son, Daniel (who was production manager at Lima, France), kept their property and mill in the south of France where Lima used to make miso. At that time Lima had a lot of financial problems. Pierre Gevaert owned the majority of the stock in Lima, and his relatives

(mostly his brothers and sisters) owned the rest. Mark and Frank Stevens (Pierre Gevaert’s son-in-law) played key roles in negotiating the deal, then stayed on to run the company. On 22 April 1989 Lima purchased Jonathan P.V.B.A., which is still a fully owned subsidiary (daughter company) of Lima. But the marriage of Lima (a Belgian natural foods company) and Vibec (a Canadian construction company) was a strange one, and for that reason it didn’t last long.

Then in September 1989 Lima was purchased from Vibec by Euronature (pronounced as in French, YU-ro nA-TYUR), a large international food company headquartered in Paris, France. Euronature is a holding company that was founded in June 1989; the president of Euronature was able to raise a lot of money from banks and insurance companies to create the holding company. Frank Stevens was killed in an automobile accident in Nov. 1989.

Lima is presently doing well, is financially very solid, and the future looks bright. Lima has sales of about \$15 million a year, but the company is not yet profitable. Mark feels that they will become profitable when sales reach about \$17 million/year. Their traditional high standards of food quality are completely supported by Euronature. Pierre Gevaert (born 21 July 1928 now in his mid-60s) no longer owns any part of Lima and neither he nor his son have been active with the company since it was purchased by Euronature. Pierre lives in the south of France and works on his organic farm there. Lima is still headquartered at Sint-Martens-Latem in Belgium.

Euronature has 4 major divisions: (1) Natural foods division, including Lima Foods, Lima’s bakery and muesli factory, and several natural foods distribution companies; (2) Gourmet division; (3) Seafoods division (Euronature’s largest), with branches scattered throughout Europe; (4) French specialty foods division.

Lima’s largest product lines are their muesli products (which they make at their own plant), their bakery (located 6 km from Sint-Martens-Latem in Belgium), their sesame division (they make tahini and gomashio, and were one of the first to grow sesame seeds organically), and their tomato canning division (located in the south of France, it makes tomato sauces and ratatouille). Lima’s leading soyfood products are tamari, shoyu, organic miso, their soymilk products (including regular and Mocha-Soy soymilk, and Soy Desserts, all made by Alpro in Belgium), fresh tofu salads, and tofu in cans and jars. Imports from Japan are now quite small, representing only about 10% of Lima’s total sales. Although Lima no longer makes its own miso, it still sells quite a lot of miso—much of it from past batches made by Jan Kerremans in the south of France. Lima is now looking for other sources, including American Miso Co. in North Carolina. Jan now works part time as a consultant for Alpro in Belgium.

Jonathan's main products are now seitan and tofu (both fresh [pasteurized] and in jars), plus many second-generation products made from seitan and tofu, such as fresh tofu spreads, tofu pates, seitan brochettes, etc. Jonathan makes all of the seitan, tofu, and related products sold by Lima. Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3635. Boysen, Hans-Juergen. 1992. Soja [Soya]. *Schrot & Korn (Germany)*. April. p. 16-20. [Ger]

• **Summary:** An introduction to soybeans and soyfoods, including whole dry soybeans, soy oil, soymilk, soya meat (Sojafleisch, TVP), Whole soy flour, tempeh, and soy sprouts.

Note: This magazine is sold in German natural food stores (Naturkost-Laden).

3636. Wilson, Lester A.; Murphy, Patricia A.; Gallagher, Paul. 1992. Soyfood product markets in Japan: U.S. Export opportunities. Ames, Iowa: MATRIC (Midwest Agribusiness Trade Research and Information Center). x + 64 p. April.

• **Summary:** Contents: Figures. Tables. Acknowledgments. Introduction. I. Soybean processing (by Wilson and Murphy). Food from soybeans: Soybean chemical composition, environmental influences on soybean composition. Soyfood manufacture: Soymilk, tofu, momen tofu, kinugoshi tofu, packed tofu, aseptically-packaged tofu, deep-fried tofu, kori tofu. Tofu-related research: Recent studies at Iowa State University, summary, future research. Other nonfermented soyfoods: Yuba, kinako, texturized soy protein foods. Fermented soyfoods: Miso, shoyu, natto, tempeh. Japanese Agricultural Standards (JAS). Identity preservation and transportation. U.S. soybean quality and the Japanese market: Grain quality, judging quality, potential new markets.

II. Japanese soyfood markets (by Gallagher). Demand and growth prospects: Consumption patterns, demand analysis, forecasts. The U.S. share of the food soybean market: Sources and uses, market share analysis, determinants of relative prices, prospects. Trade and trade barriers: Soybeans, processed products. Summary and recommendations.

Appendixes: A. Excerpts from specifications and standards of food additives, etc.—Manufacturing and storage of tofu. B. Excerpts from standards and certification systems in Japan. C. Additional agricultural standards for soybeans. References.

Table 2.1 shows soybean use for soyfood production in Japan; actual (1986) and projected (2000). Soybeans for tofu are expected to increase from 524,000 to 609,700 tonnes. Soybeans for miso are expected to decrease from 156,000 to 101,600 tonnes. Soybeans for natto are expected

to increase from 92,000 to 118,600 tonnes. Figures 2.1 to 2.4 show Japanese per capita consumption of tofu, natto, miso, and soy sauce from 1965 to 1988. Tofu: Japanese annual per capita consumption of tofu has risen since 1965, except that it fell during 1973-1977. In 1965 about 3.6 kg/capita of soybeans were used to make tofu, increasing to 4.4 kg/capita in 1988. If 1 kg of soybeans yields 2.8 kg of tofu, then per capita tofu consumption in 1988 was 12.32 kg or 27.1 lb.

Natto: Japanese annual per capita consumption of natto has risen steadily, from a little less than 0.4 kg in 1965 to 0.6 kg in about 1968, to 0.8 kg in 1988.

Miso: Japanese annual per capita consumption of miso fell from 8 kg in 1965 to about 5.4 kg in 1985, then it began to rise to about 5.7 kg in 1986.

Soy sauce: Japanese annual per capita consumption was about 12 liters in 1965. It fell to 11 liters in 1967, rose to 13 liters in 1973, then fell to 9.8 liters in 1985, after which it rose for 1 year. Address: 1-2. Prof. of Food Science and Human Nutrition; 3. Assoc. Prof. of Economics. All: Iowa State Univ. Phone: 515-294-0160.

3637. Chait, Mat. 1992. Early recollections and work with the Ricycle and soyfoods in Boston, 1970-1972 (Interview). *SoyaScan Notes*. May 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In the late 1960s Mat had started graduate school in counseling psychology at Hunter College in Manhattan, New York. But under the influence of yoga, Swami Satchitananda, Hinduism, vegetarianism, and macrobiotics, he decided to drop out and to study macrobiotics in Boston with Michio Kushi. He arrived in Boston in about December 1969. Nine months later, Mat started operating the Ricycle at Boston University in September 1970 at Boston University. He recalls: "The design of the Ricycle was absurd. It consisted of a steam table (which without its food weighed 600-700 pounds) welded onto the back of a girls bicycle. To move the Ricycle, he pedaled it (rain or shine; or pushed it up even gradual hills), but it was so heavy and clumsy as to be almost immobile." At night it was kept in the garage of the macrobiotic study house at 6 Ellery Street.

During the first 6 months, Barbara Grace prepared most of the desserts and whole grain breads at the kitchen of a big study house across from the Brookline High School. Marion (who had an Italian last name) prepared the vegetable and grain dishes in another study house. (Note: Marion married Frank Calpeno, who owned Ceres Natural Foods, a fairly big macrobiotic food distribution business in Colorado Springs, Colorado; they moved to Colorado in the early 1970s). Dora Coates (whose parents started Laurelbrook Foods) also cooked for Mat for a while. The business took off quickly, with the help of many magazine and newspaper articles. Mat got a loan, so in early 1971, in

the dead of winter when it was too cold to be out on the street, Mat built a kitchen inside the Erewhon warehouse, and it began operation at the end of March 1971. Since Paul Hawken was in California at the time, Mat got permission from the acting president of Erewhon.

Every day the Ricycles would offer a grain dish, whole grain bread, a vegetable dish, a dessert, and often a soup—but there was a different menu every day. A number of popular dishes contained soy as an ingredient. A miso-tahini spread was usually available with the bread. Miso soup and Miso Rice were often served. For Miso Rice, miso was mixed with a little water then stirred into a pressure cooker of hot rice that had just been cooked, and allowed to stand for a few minutes. Mat vividly recalls that on days when he had to stand in front of Boston University in the freezing cold for 6 hours without moving, the miso soup would keep him warm. After Mat opened the kitchen at Erewhon, he contracted with David Kalan of Crane's Call Bakery, a macrobiotic bakery, to make most of the desserts and other baked goods for the Ricycle. Sometimes the vegetable dish of the day had tofu in it, or the grain dish had miso in it.

While building the kitchen inside Erewhon, Mat constructed two more Ricycle carts. Mat launched these in the spring of 1971; one served its macrobiotic lunches on weekdays at MIT in Cambridge, and the other in downtown Boston at government center. He was unable to get permit to operate at Harvard Square. The other 2 Ricycles were operated by people that Mat employed; they were paid a percentage of their sales.

One year at the Christmas reunion, Mat did an elaborate impersonation of Michio Kushi (complete with makeup and a built-up nose construction), wrote, sang, and led the audience in a song about miso to the tune of "Get me to the church on time." The words went: "I'm drinking miso in the morning. Hatcho or mugi is sublime. Aveline or my daughter, go heat up the water, and get my miso soup on time. If you use onion, sautee it first, if you use daikon, it satisfies your thirst. For I'm drinking miso in the morning..."

Mat left Boston in about December 1972 to take an acting job in New York. At the time he sold and shipped all 3 Ricycles to an eccentric millionaire's son in Texas. He does not have any recollection of Tan Pups being on the market but he does remember seitan imported by Erewhon from Japan, perhaps by Japan Foods, in the form of little dark salty chunks. Perhaps Robert Hargrove might know more about this. Perhaps Erewhon made the Tan Pups.

Concerning Paul Hawken's departure from Erewhon in late 1973, it has always been Mat's understanding that Aveline Kushi owned the company but that the Kushi's negotiated to pay him \$30,000 when he left.

Mat once visited Erewhon's little farm in Keene, New Hampshire. They made sauerkraut there on the top floor of a building; one would jump up and down on the cabbage in a

barrel to press it. Address: 8-23rd Ave., Apt. 302, Venice, California 90291. Phone: 213-465-0383 or 213-469-5408.

3638. Okada, Yuko. 1992. Re: Muso's soymilk factory in the USA. Importing organic soybeans to Japan. Letter (fax) to William Shurtleff at Soyfoods Center, May 21. 1 p. [Eng]
 • **Summary:** "Did you know that I have a soymilk factory in the U.S.? It has been operating for almost 7 years. It was the first soymilk company in the United States and is growing every year. The company is located in Michigan, where most of the organic soybeans are grown." Note: The author is probably referring to Muso's 15% ownership in American Soy Products, Inc., whose plant at Saline, Michigan, began commercial operation in Nov. 1986.

Muso is also importing organic soybeans into Japan, and has already imported about 300 metric tons this year. The use of organic soybeans in Japan is growing on the part of companies making shoyu, miso, tamari, tofu, etc. for Muso. Address: Muso Co., Ltd., Kosei Bldg. 2nd Floor, Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. Phone: 06-942-0341.

3639. Bond, Hannah. 1992. Studying macrobiotics in Boston and founding South River Miso Co. in Conway, Massachusetts (Interview). *SoyaScan Notes*. May 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Hannah, whose maiden name is Bond, first went to Boston for a short time in the spring of 1969, then she returned for a short time in 1970. She lived in Boston from 1976 to 1980. She was one of the people in three couples who founded South River Miso Co. Originally the company was founded as Ohio Miso Co. by Thom Leonard. Thom sold it to Christian Elwell. Christian needed money to finish the shop and buy the equipment. So she and her former husband, Anpetu, loaned him some money. She left because there was a falling out between Christian and Gaella Elwell on the one hand, and the two other families on the other. One of the families was she and her husband at that time, Anpetu. He was a Russian Jew but he had lived for a while with native Americans (the Lakota Sioux) and they had given him the Lakota name Anpetu. The other couple, whose name she does not recall, left first, for other reasons. She and her husband were hoping to turn the land into a land trust, whereas Christian and Gaella favored private land ownership. Address: P.O. Box 100, Cambridgeport, Vermont 05141. Phone: 802-869-2001.

3640. Lindner, Anders. 1992. Soyfoods at Natural Products Expo West. *SoyaFoods (ASA, Europe)* 3(2):6-7. Spring.

• **Summary:** "The 12th annual Natural Products Expo West took place at the Anaheim Convention Center, from 10 to 13 April 1992. Some 900 exhibitors and 40 seminars with expert speakers attracted 12,000 visitors... Some 35 companies exhibited soya foods in Anaheim."

Interesting new products include: Edamame (frozen green soybean in the pod) from Miyako Oriental Foods. Fromage de Soy (cheese alternative in 6 flavors) from Nutrition Specialties International Ltd. (headed by Mr. Patrick E. Cochran; profits go to the International Nutrition Research Foundation Inc., a Seventh-day Adventist organization promoting a rational, healthy, dietary and life-style), Shedd's Willow Run soya margarine from Van den Bergh Foods (Mic-Ellen Associates Ltd.). The Vitasoy–Nasoya Group had a large stand at the show headed by Yvonne Lo and John Paino. White Wave Soyfoods Inc. and the SoyFoods Association of America sponsored a lecture titled "Vegetarianism and Soyfoods" by Michael Klaper, M.D. The Association represents about 30 companies within the soyfoods industry. Address: Director, Lactasoy Agency, Helsingborg, Sweden.

3641. **Product Name:** [Sweet White Miso].

Foreign Name: Shiro Miso.

Manufacturer's Name: Soyalab.

Manufacturer's Address: Via B. Cellini 48N, 50020 Sambuca Val di Pesa (Firenze), Italy.

Date of Introduction: 1992. May.

Wt/Vol., Packaging, Price: 350 gm glass jar.

How Stored: Shelf stable.

New Product–Documentation: Letter from Stephen Jannetta of Lititz, Pennsylvania. 2000. Jan. 12. Stephen worked with Christian Elwell at South River Miso Co. in Conway, Massachusetts, for two seasons: (1) Oct. 1990 to May 1991, and (2) Sept. 1993 to May 1994. After the first season he traveled to Italy.

The first miso that he produced in Italy was for Soyalab (located near Florence) during a period between February and May of 1992. This was basically experimental. They made about 500 kg of shiro miso and about 1,500 kg of barley miso. The shiro miso was packaged [pasteurized, in 350 gm glass jars] and distributed under the Soyalab label in the spring of 1992. Both types of miso were made from organic soybeans and grains. The equipment was all improvised, and the miso was aged in small (about 55 gallon) wooden vats. The idea for the glass jars came from Europe—probably Germany.

Soyalab was purchased by La Fonte della Vita (located near Cuneo, Italy) in 1994 and Stephen went there in October of that year after his second season at South River Miso Co. In about April 1995 "the 1,500 kg of barley miso that was produced at Soyalab in 1992 was packaged and distributed, I believe, under the Soyalab label."

3642. *Whole Foods*. 1992. Source book 1992. 15(5):33-294. May. Illust. Index. 28 cm.

• **Summary:** Contents: How to use this book (p. 8).

Wholesalers/distributors alphabetical listing. Wholesalers/

distributors geographical listing. Brokers. Publishers. Associations. Consultants/service companies.

Product directories: A listing of manufacturers/importers/growers by products: Foods (p. 77-111—soy-related categories include: Beans/bean products, cheese substitutes, coffee substitutes, cultures, miso, soy products, soy sauce, soymilk, tamari, tempeh, tofu, tofu entrees), vitamins and supplements, herbs, cosmetics/personal care, miscellaneous products. Brand names. Product index. Manufacturers/importers/growers alphabetical listing.

Note: The listings related to soy products are full of errors. Address: South Plainfield, New Jersey.

3643. Gerner, Bob. 1992. Recollections of Mithra Grossman, Intermountain Trading, and Family Orchards (Interview). *SoyaScan Notes*. June 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This company, started in about 1975 by Mithra Grossman, began as Intermountain Trading Co. at 2546 Tenth St., Berkeley, California 94710. Located very near Westbrae, Mithra was a consolidator—and had a beautiful blond Swedish wife. He would collect a variety of natural foods made on the West Coast of the U.S. by companies such as Heinke, Westbrae, etc., then put them on rail cars and ship them to the East Coast. Also starting in about 1975 he began buying miso from Westbrae that the latter was importing from Japan. At one point Westbrae was selling 25-50% of their imported miso to Mithra Grossman, who shipped it all over the USA to other wholesalers. Westbrae did not have enough business to import that much. Gradually he became a distributor, then he started developing and marketing a line of mixed packaged nuts, etc. to which he gave the name Family Orchards. The fruit and nut mixes in the Family Orchards snack line contained two types of soyfoods: Soynuts, and tamari-roasted peanuts. (For details see the company's Ad in Tom Riker and Richard Roberts. 1979. *The Directory of Natural & Health Foods*. p. 60-61). Grossman bought most of the raw materials for his Family Orchards line from Westbrae. In about 1979-1980 his company went out of business; he blamed Westbrae for its failure and bore strong resentment toward them. The price structure under which Westbrae had sold its products to Grossman was no longer profitable for Westbrae, who decided to raise prices. Address: Owner, Berkeley Natural Grocery Co., 1336 Gilman St., Berkeley, California 94706. Phone: 415-526-2456.

3644. McGlasson, Linda. 1992. Soyfoods in the next century: Feeding the world one bean at a time. *Health Foods Business* 38(6):30-34, 36. June. [1 ref]

• **Summary:** A table gives estimated retail sales of soyfoods in the USA in 1990, in descending order of sales (million dollars): soy sauce \$395.5, tofu \$94.1, second generation products (such as dips, dressings, entrees, non-dairy

desserts, cheeses, yogurts, and imitation meat products) \$81.6, soy milk (not including infant formulas made with isolated soy proteins) \$60.0, miso \$44.5, soy nuts \$9.7, tempeh \$7.5. Total \$657 million. Source: Soyatech in Bar Harbor, Maine. The two fastest growing segments are soy milk (increasing at 20% a year) and second generation products (15-20% a year). "Soyfood sales are expected to grow steadily through the next decade as health and environmental concerns become increasingly important factors in food purchasing decisions... an estimated 33 to 50% of all adults are reducing their intake of meat, yet they still have the craving.

Protein Technologies International of St. Louis, Missouri, is developing a line of structured proteins, which are look-alike meat components. There are versions that look and feel like ground beef, crab meat, and chicken.

Angelo Morini, founder of Galaxy Foods, began trying substitutes for the real cheese he was using in his pizza business. He left the pizza business in 1968 and began making soy cheese full-time. The company began slowly by selling to food service customers, then they started marketing the cheese nationally in 1984. In 1985 Galaxy started in the health food industry with a new line, Soyco. Following a fire, the company has relocated in a new 55,000 square foot state-of-the-art manufacturing facility in Orlando, Florida. They are now producing soy cheese products and are scheduled to launch 30 new items this year.

One sidebar, titled "Quickie Dictionary of Soyfoods," defines tofu, miso, tempeh, soy milk, and shoyu. Another says "Soyfoods Take Spotlight in New Infomercial." The infomercial is based on Dr. Michael Klaper's education seminars for doctors and other health professionals titled "Let Food Be Your Medicine." Klaper (a noted physician, author, environmentalist and nutritionist [and vegan]) is co-founder and director of the Institute for the Advancement of Nutrition Education and Research. The tentative title for the new infomercial is "The Nutrition for the 90s, a Transition to Health." It will begin airing in July on cable TV. Radio's Top 40's Countdown host Casey Kasem will emcee the show with Dr. Klaper. The show will feature top scientists and doctors, plus testimonial interviews with many celebrities and famous athletes. Address: Managing editor.

3645. Santiago, Librado A.; Hiramatsu, M.; Mori, A. 1992. Japanese soybean paste miso scavenges free radicals and inhibits lipid peroxidation. *J. of Nutritional Science and Vitaminology (Tokyo)* 38(3):297-304. June. [20 ref]

• **Summary:** The antioxidative and free radical scavenging activity of miso was demonstrated by electron spin resonance spectrometry. Miso may act as an antioxidant by scavenging free radicals.

This article was summarized in *Cereal Foods World* (Jan. 1993, p. 33-34) under the title "Move over vitamin E;

Here comes miso." Address: 1&3. Dep. of Neurochemistry, Inst. for Neurobiology, Okayama Univ. Medical School, 2-5-1 Shikata-cho, Okayama 700; 2. Yamagata Technopolis Foundation, Yamagata 900. All: Japan.

3646. Belleme, John. 1992. Santa Fe Organics and seitan (Interview). *SoyaScan Notes*. July 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Santa Fe Organics is owned by 3 people: James MacCreight (of Santa Fe, New Mexico) and John each own 45%, and Sandy Pukel (owner of Oak Feed Store in Florida) owns 10%. James got involved because he knew of John's work at American Miso Co., and he was a friend of Barry Evans. Barry was the majority owner of that company but he was sent to jail in early 1992 in California with a 7-year sentence, of which he must serve at least one-third. John got bought out of American Miso Co. in 1986 for two reasons: He had conflicts with Barry, and there were indications that Barry was making his money illegally. He wanted to get out "before the whole thing came down on our heads. My equity in the company might have been confiscated by the federal government." Before Barry went to jail, he made a deal such that his two companies (American Miso Co. and Great Eastern Sun) were not affected. After John left American Miso, he and Sandy Pukel formed a partnership with Blake Rankin and established Granum East. They ran that for 2½ years then sold it to Great Eastern Sun in 1988. From that time until 1990 he and his wife, Jan Belleme, did a lot of writing.

James MacCreight, a former Hippie, had made money investing in real estate in Philadelphia, Pennsylvania, where he also founded and owned George's Restaurant (a lovely place named after George Ohsawa). One day in late 1990 he called John and said "I'd like to do something with you. What would you like to do?" They spent a lot of money starting a miso shop adjoining John's home in Saluda, North Carolina, but then John decided it would not be grand enough to meet James' expectations. So they dropped the miso project after 6 months before the equipment even went in. James heard about Seitan Mama's, and they decided to make seitan instead. John had been interested in seitan since 1974, and in Feb. 1978 his wife, Jan, had started an early and very successful seitan company in Coconut Grove, Florida named Seitan Mama's, which see. In early 1991 a huge building became available at an excellent price 10 miles from John's home in Saluda at 906 Locust St. in Columbus, North Carolina. Their first line of 4 retorted seitan products in glass jars was introduced in June 1991. Originally they had planned to be a wholesale company, selling pallets via commercial trucking lines or UPS directly to larger stores (mostly on the East Coast) with a broker; it was hoped that this approach would keep the retail price down. Now they sell only through distributors.

Santa Fe Organics produces its seitan using a huge Japanese-made gluten-making machine (ordered through Mitoku) and an automatic cutter. The company has 3 production workers. To the machine they add flour, water, and salt (or nigari). The salt helps develop a little more gluten, and gives a tighter product with a higher yield. John's machine will process 150 kg (330 lb) of flour per run (which takes 2½ hours). Paddles in the machine knead the flour with water for about 30 minutes to develop the gluten, then the loaf sits undisturbed under water for about an hour, then the dough is rinsed by kneading it under water for about 1 hour; 100 kg of flour yield about 45 kg of fresh gluten. John orders his wheat flour freshly milled once a week from a mill 50 miles away. Fresh milling is very important for good yield and taste. He uses organically grown hard winter wheat. John uses a mixture of whole wheat and unbleached white flours. The key to getting flavors to penetrate to the core of the seitan lies in retorting at 250°F under pressure (which causes the seitan to expand and become porous allowing flavor penetration) plus the proper mixture of flours. The more whole wheat flour used, the greater the flavor penetration and concentration—but the product is somewhat bready and less dense. The more unbleached white flour used, the greater the density, chewiness, and meatlike texture of the final product. The proportion of flours varies with each product.

John has no problem with starch disposal. The local government looked at the starch and its effects on the local sewage system carefully, and actually encourages Santa Fe Organics to dump it into the sewage system. Eventually John would like to find ways to use the starch, as in stews.

Sales of Santa Fe Organics seitan are large and growing—although the company is still not profitable. A new conflict has arisen in that one owner wants to own a larger percentage of the total shares.

Plans for the future: (1) A new line of 3 Seitan Sloppy Joe products, due out in August; (2) They may have a ravioli maker in Atlanta, Georgia, make Seitan Ravioli using they would ship to Atlanta. They will be sold frozen, 18-22 units in a 13 oz bag, like the Soyboy Ravioli from Northern Soy in Rochester, New York; (3) Sell frozen 6-8 oz chunks or slabs of seitan in bulk (12 lb in a plastic bucket) to restaurants and foodservice institutions, then help them to work out recipes. They hope to have Tree of Life or Cornucopia distribute the product; (4) John's wife, Jan, is now finishing writing a vegetarian cookbook for the Avery Publishing Group. It will contain a whole chapter on seitan. (5) John would like to write a book on miso.

Mitoku has sold two Japanese-made gluten-making machines to the Western world; one was sold to Lima Foods in Belgium. The retort process that both Jonathan and Santa Fe Organics use is a very technical process; one must be set up with a license and follow federal regulations. According to Chris Dawson, Lima imported this machine for Jonathan—

which made the seitan that Lima sold. The other machine went to the Erewhon warehouse, where it sat for years, until it was sold to the people who started Upcountry. Address: P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

3647. Okada, Yuko. 1992. Re: History of Muso Co. Ltd. (Muso Shokuhin) in Japan. Letter (fax) to William Shurtleff at Soyfoods Center, July 2. 2 p. [Eng]

• **Summary:** Muso was formed as an establishment in February 1966, and Yuko has worked for the company since that time. His current title is president of Muso Co., Ltd. for Export and Import division, a position he has held for the last 6 years. Yuko first went to the USA in April 1970. First he worked at the Erewhon retail store and at the Erewhon warehouse as production manager and import manager. After 2 years he began to manage a macrobiotic restaurant [the Seventh Inn] for 2½ years as executive vice president. After the restaurant had paid off all its debts, he returned to Erewhon as import manager, and was also in charge of determining the cost of all production.

Yuko thinks that Muso began to ship foods to Erewhon in 1968. [Note: Kotzsch. 1984, Dec. *East West Journal* p. 14-21 states that Muso began to export foods in 1969.] The main food items shipped during the first year were shoyu (made by Marushima Shoyu Co.), several types of miso (made by Kanemitsu Miso Co. and Ohta Hatcho Miso Co.), black soybeans, azuki beans, many types of sea vegetables and teas, buckwheat noodles, umeboshi pickles, and takuan (daikon pickles).

The following Westerners have worked for Muso over the years: Paul Hawken (March-Oct. 1969), James Docker (several months), Jim Ledbetter (several months), Evan Root (several months), Tyler Smith (6 months), Steve Earle (4 years). Only Americans have worked at Muso.

Muso moved to their present address in the Kosei Building on 1 Dec. 1986. The company still maintains a domestic distribution company at its former address at Otedori 2-5-1, Higashi-ku, Osaka. Address: Muso Co., Ltd., Kosei Bldg., 2nd Floor, Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. Phone: 06-942-0343.

3648. Troy, John. 1992. Update on Wizard's Cauldron and work with miso (Interview). *SoyaScan Notes*. July 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John makes many lines of products that contain miso. "The Wizard" line, sold through Joel Dee of Edwards & Sons, contains three products: Hot Stuff, Stir Crazy (a stir-fry sauce), and Sweet & Sour Sauce. The Premier Japan line is also exclusive to Edwards and Sons. The Simply Delicious line consists of many salad dressings, such as Lemon Tahini, Ginger Plum (with umeboshi plums), Tofu Poppyseed, and Miso Sesame (the only miso product in this line). His favorite salad dressing (which is also his best-

seller) is the Miso Sesame; it is sweetened with rice syrup, and contains both clear shoyu and white miso. "It's really nice."

A fourth line, called "Troy's" is a line of sauces, such as a steak sauce and a poultry sauce. Three of these products contain miso: Miso Magic (a sauce for grains and vegetables), and Cracked Peppercorn Steak Sauce, and Honey Mesquite Barbecue Sauce. John's favorite sauce is his Thai Peanut Sauce. A fifth, called Harbor Lites, is a line of six seafood sauces—all of which contain either soy sauce or miso. The Garlic Grill contains miso. There is also a Ginger Soy in this line.

American Natural Foods (ANF), started in 1984, attracted many local investors who finally got control of the board of directors and encouraged John to do things that went against his beliefs; the company eventually lost about a million dollars, and John lost everything he had. It didn't go bankrupt; it's still alive but John "walked away from it." Its sole product is Miso Mustard, which is made by Morehouse Foods.

At the end of 1985 John was penniless, and had to draw unemployment to buy groceries. "But it was a real blessing in disguise." John started doing some consulting work. In 1986 he started a new company named "Wizard's Caldron," which was initially just a consulting company. John was able to buy the trademark for Hot Stuff away from ANF, then cut a deal with Joel Dee. In Oct. 1987 Edwards and Sons became the exclusive distributor of his Premier Japan line and his Wizard Baldour condiments and sauces, including Hot Stuff. He saved enough money to buy a little plant, then started real small, making food products again. The new company's first product line, the Simply Delicious salad dressings, was launched in 1989. The company has been growing and growing, until now it is a very healthy little company with one million dollars of annual sales. This is the first time John has owned his own plant; previously he always had to use co-packers. "I'm just having a wonderful time with it, but it was a hard lesson to learn." John buys his miso from Don DeBona of American Miso Co. He also uses a lot of clear shoyu, which he buys from San-J; they make it in Japan. He consulted for San-J, and when he visited their plant in 1986 he noticed some stuff dripping from a vat. They said it was clear shoyu which they said they used in sauces, dashi, etc. He brought back a 5-gallon pail to the USA, and eventually made it a featured ingredient in his line of salad dressings. Address: The Wizard's Caldron, 8411 Hwy. NC 86 N, Cedar Grove, North Carolina 27231. Phone: 919-732-5294.

3649. *SoyaScan Notes*. 1992. The remarkable food-related creativity that took place in Boston from the late 1960s until the late 1970s, especially within the macrobiotic community (Overview). July 13. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** A flowering of original food product development took place in Boston during this period. There were a number of reasons for this (1) The meeting of two food cultures, Japanese and American, together with new ideas related to diet and health, as embodied in the macrobiotic teachings of Michio and Aveline Kushi. Just as the meeting of two oceans currents leads to a region at the boundary of great biological activity and development, so does the meeting of two cultures. Young Americans were introduced to a host of new basic foods which they quickly began to use and process in new ways. These included miso, tofu, seitan, amazake, umeboshi salt plums, sea vegetables, rice syrup, rice cakes, azuki beans, mochi, and many more. To cite but four examples: (A) Seitan: Japanese had used seitan as a salty condiment or seasoning. By late 1972 Americans had transformed it into a succulent meat substitute. (B) Tofu: It had never occurred to Japanese to put tofu in a blender. By the mid-1970s Americans in Boston were combining it with a sweetener to make delectable dairyless tofu cheesecakes and cream pies, or to make low-fat, cholesterol-free salad dressings, dips, and spreads. (C) Amazake: Japanese serve this as a hot beverage like tea, most in teahouses; The only flavoring used is gingerroot. Americans transformed it into delectable ice creams (free of dairy products and sugar), or thick, sweet drinks resembling milk shakes sold refrigerated in plastic bottles. Americans also used amazake as an all-purpose natural sweetener in place of sugar, honey, or maple syrup. They also learned to make a rice milk resembling amazake using commercial purified enzymes instead of koji; at this point, the line separating amazake and rice syrup became somewhat blurred. (D) Rice Syrup: Japanese use *amé* or *mizumamé*, made from koji, as the basis for taffy-like candies or, in very limited ways, as a sweetener. Americans soon began to make rice syrup using commercial enzymes instead of koji and to use it as an all-purpose natural sweetener in place of sugar, honey, or maple syrup.

(2) The closely-knit, almost communal nature of the macrobiotic community in Boston, was one in which many people, mostly young people (including many women), were working closely together with a common vision. New ideas were shared more than guarded or patented. Joel Wollner notes that it was almost like the art community in Paris during the impressionist era of the late 1800s.

(3) The Erewhon retail store (opened in April 1966) provided a ready testing ground for new local products. Many got their start in one or more of these stores. The Erewhon Trading Co. (which started importing Japanese natural and macrobiotic foods in Aug. 1968), and which began wholesaling and distributing in the spring of 1969, greatly helped to expand the market for good products.

(4) The community was fortunate to have a number of exceptionally talented entrepreneurs in the food business, including Paul Hawken, Bruce Macdonald, Roger Hillyard,

Bill Tara, and many others. Many of these individuals later left the area to start their own food companies.

(5) It was during this period that the natural foods, macrobiotic foods, organic foods, and vegetarian movements (all closely related, and often based on similar philosophical, ethical, and spiritual values) began to grow in the United States, in part in reaction to the overly-processed, overly chemicalized, unhealthful foods produced by big food companies, and the highly-chemicalized food growing techniques used by American farmers—and in part because of the leadership and inspiration of the community in Boston.

3650. Bersky, Kamil. 1992. Re: Work with soyfoods, seitan, and amazake in Czechoslovakia. Letter to whom it may concern, July 30. 1 p. Typed, with signature.

• **Summary:** “We are now producing 5 varieties of seitan, 5 varieties of tempeh, amasake, tofu, and we can offer barley malt. Our plan is to start koji and miso production, open a macrobiotic center with a year-round program, a kindergarten, and a small restaurant with a shop.” Address: M.D., The Macrobiotic Centre of Czechoslovakia, Mlynska 659, 51 801 Dobruska, Czechoslovakia. Phone: 42 443 21578 (fax).

3651. Bloom, Leslie Beal. 1992. Super summer sauces. *Gourmet* 52(7):56. July. *

• **Summary:** Includes Recipes.

3652. GEM Cultures. 1992. Catalog [Mail order]. 30301 Sherwood Rd., Fort Bragg, CA 95437. 9 p. Aug. [4 ref]

• **Summary:** This catalog celebrates the company’s 12th anniversary. Address: Fort Bragg, California. Phone: 707-964-2922.

3653. **Product Name:** Finger Lickin’ Miso [Ginger].

Manufacturer’s Name: Leo Risin’ Foods.

Manufacturer’s Address: 1525 Rhode Island, Lawrence, KS 66044.

Date of Introduction: 1992. August.

Ingredients: Ginger: Barley, organic soybeans, rice, water, ginger root, sea salt, garlic, kombu, sorghum cane juice, *Aspergillus oryzae* culture.

Wt/Vol., Packaging, Price: 8 oz. plastic tub.

How Stored: Refrigerated.

New Product–Documentation: Letter and Labels sent by Clayton McHenry, founder and owner of Leo Risin’ Foods. 1994. Feb. 22. In August 1992 Clayton began to make Finger Lickin Miso (in only one flavor, ginger) for the Community Mercantile (a co-op grocery in Lawrence) and Clearly Nature’s Own (a natural food store in Kansas City, Missouri).

3654. **Product Name:** [Vitam Miso Paste {Apple, Ginger, Honey, Chili Pepper}].

Manufacturer’s Name: Vitam Hefe Produkt GmbH.

Manufacturer’s Address: Walter-von-Selve Str. 2, 31789 Hameln, Germany. Phone: (40) 5151/95-400.

Date of Introduction: 1992. August.

Ingredients: Honey: Honey, Miso from oats, sea salt, ginger, garlic.

Wt/Vol., Packaging, Price: 4.38 oz glass jar.

How Stored: Shelf stable.

New Product–Documentation: Leaflets and letter sent by Elke Heitmeyer of Scenario International (P.O. Box 24177, Los Angeles, California 90024-0177. Phone: 310-470-9166). These products are made in Germany by Vitam Hefe Produkt GmbH. The color leaflet shows the products packed in paperboard boxes, and states: “Organically grown oats, not soy, are fermented in a 3-4 months long process to form our delicious miso sauces... A delectable sandwich spread, flavor for rice, soups, tofu, dips, and sauces.

Leaflet titled “Story” by Scenario International. “Elke Heitmeyer, the founder of Scenario International, is originally from the Eastern parts of Germany.” She is a vegetarian. “The Organic Gourmet product line has been sold in German specialty health food stores, ‘Reformhaus,’ for years. The manufacturer is a member of the Neuform Assoc. of Natural Food Producers.”

Leaflet. “New. Organic Flavored Miso Pastes.” Gives a recipe for Chili Miso Tortillas.

Letter and products (with Labels) sent by Elke Heitmeyer in response to enquiry from William Shurtleff of Soyfoods Center. 1994. Jan. 11. The miso pastes were first sold in Germany under the brand name Vitam in August 1992. They were first sold in the U.S. under The Organic Gourmet brand in July 1993.

3655. Waxman, Howard. 1992. History of Essene, natural foods retailer and distributor (Interview). *SoyaScan Notes*. Sept. 21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Essene began in March 1969 as a macrobiotic natural foods retail store named Essene Macrobiotic Supply at 2031 Samson St. in Philadelphia, Pennsylvania. Primarily a juice and snack bar, it was founded by Denny Waxman, Charles Smith (Smitty), and Stanley Petrowski; Stanley left after several months. Howard was not involved with the company at that time. After about a year, the growing retail store moved to 320 South St. (at 3rd) in Philadelphia and changed its name to Essene Traditional Foods.

By Feb. 1971 a distribution company, also named Essene Traditional Foods, was started in the retail store—following the Erewhon model. An ad in *East West Journal* (Feb. 1971, p. 10) shows that “Essene,” at 320 South St., was a distributor and wholesaler of natural and traditional foods, including miso, tamari, sea vegetables, and organic

grains, vegetables, and beans. They made stone-ground wheat flour on the premises. The distribution company soon outgrew the store and by May 1972 had moved into a small warehouse at 58th & Grays Ave., Philadelphia PA 19143. Then it moved to a larger warehouse in Boyertown, about 1 hour drive outside Philadelphia. The distribution company went out of business in about 1976-78; it had been in business for about 5 years.

In 1981, when Bill Tara returned to the United States to become director of the Kushi Institute of Boston, Massachusetts, Denny Waxman, head of the Philadelphia East West Center, went to London to run the Community Health Foundation and the Kushi Institute. He stayed two years. Denny now lives in Portugal.

The retail store is still in business, owned by Howard. He moved to his present address about 3½ years ago, from 320 South Street, Philadelphia, PA 19147. Address: Owner, Essene Natural Foods, 719 S. 4th St., Philadelphia, Pennsylvania 19147. Phone: 215-922-1146.

3656. Malloy, Thomas. 1992. Imports of miso to the USA (Interview). *SoyaScan Notes*. Oct. 14. Conducted by William Shurtleff of Soyfoods Center. [1 ref]

• **Summary:** According to a person he contacted in the Minneapolis, Minnesota Dept. of Commerce (under Bureau of Census), the United States imported 2,054,153 lb of miso (listed as “soybeans, prepared or preserved, NESOI”) in FY (fiscal year) 1991, 1,432,701 lb in FY 1990, and 1,302,220 lb in FY 1989. Thomas does not know the meaning of the term NESOI. Address: Minnesota.

3657. Belleme, John; Belleme, Jan. 1992. *Culinary Treasures of Japan: The art of making and using traditional Japanese foods*. Garden City Park, New York: Avery Publishing Group Inc. xiv + 232 p. Illust. by Akiko Aoyagi. Index. 25 cm.

• **Summary:** Contents: Acknowledgments. Foreword. Preface. Map of Japan showing where 21 traditional foods sold by Mitoku are made. 1. Kuzu: The wonder root. 2. Mirin: Sweet rice wine. 3. Miso: A health secret to savor. 4. Mochi: The sweet rice treat. 5. Noodles: Traditional Japanese fare. 6. Rice malt: Heavenly sweet water. 7. Toasted sesame oil: Cooking oil supreme. 8. Shiitake: Miracle mushrooms. 9. Soy sauce: King of condiments. 10. Tea: A national institution. 11. Snow-dried tofu: Protein powerhouse. 12. Umeboshi: Venerable pickled plums. 13. Vegetables of the sea: Underwater harvest. 14. Brown rice vinegar: Japan’s liquid treasure. 15. Traditional vessels: Vats, crocks, and barrels. Glossary. Worldwide importers.

Concerning soy sauce, this book discusses Sendai Shoyu and Miso Co., Johsen, tamari, Mansan Brewing Co. founded by Oguri family in 1875, almost destroyed in Sept. 1959 by the fierce Ise-wan typhoon, “discovered” in 1982 by Akiyoshi Kazama of Mitoku. Now a macrobiotic staple.

For details on the uncondensed introduction to this book see Kushi (1992) “Introduction to *Culinary Treasures of Japan*.” Though very interesting, it contains a number of factual errors and statements that leave the wrong impression. Address: Saluda, North Carolina.

3658. **Product Name:** Sweet Barley Miso, and Mellow Barley Miso.

Manufacturer’s Name: Leo Risin’ Foods.

Manufacturer’s Address: 1525 Rhode Island, Lawrence, KS 66044.

Date of Introduction: 1992. October.

Ingredients: Incl. soybeans, barley, salt.

Wt/Vol., Packaging, Price: Sold in plastic bags inside of 8 oz and 16 oz plastic tubs.

How Stored: Refrigerated.

New Product–Documentation: Letter from Clayton McHenry, founder and owner of Leo Risin’ Foods. 1994. Feb. 22. In October 1992 Clayton began to make Sweet & Mellow Barley Miso for the Community Mercantile (a co-op grocery in Lawrence) and Clearly Nature’s Own (a natural food store in Kansas City, Missouri).

3659. McSweeney, Daniel. 1992. 10th Annual Whole Foods Consumer Survey: Getting to know your customers. A profile of an aging and affluent consumer emerges from the survey. *Whole Foods*. Aug. p. 32-34, 36, 38, 43-44.

• **Summary:** A table titled “Food purchases” (p. 43) shows the percentage of respondents who purchased a type of product at a natural foods during the past 12 months, in descending order of popularity (also shows percentages for 1991 and 1990): Tofu 52%. Soy milk 42%. Tamari 38%. Soy sauce 29%. Miso 28%. Tempeh 25%. Cheese substitute 19%. Sea vegetables 17%. Note: The sample size is not given.

3660. Louie, Elaine. 1992. 43 peaceful acres of Japan in Connecticut: A retreat that evokes home. *New York Times*. Nov. 12. p. C8.

• **Summary:** On weekends, Isao Aiba, his wife Lisa Sorce, and their two kids live Japanese style on 43 acres in Lime Rock, Connecticut, in the foothills of the Berkshires. And the family shares their retreat with 3-10 Japanese guests each weekend.

“Every two months, Ms. Sorce drives to Yaohan, a Japanese supermarket in Fort Lee, New Jersey, to stock up on raw fish, pickles, tiny dried fish and natto, a natto, a fermented [soy] bean favored in the north and east of Japan.”

At home in Connecticut, her breakfasts typically include miso soup.

3661. Griffis, Gil; Wiedermann, Lars. 1992. Marketing food-quality soybeans in Japan: A manual on how to profit

from the niche market in Japan for value-added soybeans. 5th ed. St. Louis, Missouri: United Soybean Board. 25 p. Nov. 28 cm.

• **Summary:** Contents: Introduction. Japan: Desired soybean characteristics, tofu (procedure for making tofu, desired soybean characteristics, color of hilum, seed size {the larger the better, preferably more than 20 grams/100 beans}, color of cotyledons, hull, composition, special notes, American interpretation), miso (same categories of information as tofu), natto (ditto; seed size: The smaller the better, with a maximum of 5.5 mm diameter. Round shape is preferred to oval in order to limit swelling during the soaking and boiling processes), food quality soybean varieties (name, maturity zone, release year, used to make what soyfoods), distribution channels, marketing channels, protocol, pricing, organically-grown soybeans.

Taiwan: Introduction, list of major buyers, users, and trade associations. Korea. Southeast Asia. United States.

Appendix I. Distribution systems for soybeans used for food in Japan: Tofu, natto, miso. Appendix II. Food soybean imports by country of origin, 1984-1991. USA is the largest supplier (845,000 tonnes in 1991), followed by China (279,000), then Canada (28,000). Total imports, which have stayed about constant during this period, were 1,152,000 tonnes in 1991.

Appendix III. Distribution by usage of soybeans used for food—1991, direct use only in tonnes (metric tons). Tofu: 607,000 tonnes total, of which 562,000 come from the USA and Canada, 25,000 from China, and 40,000 from Japan. Up 2% from 1989.

Miso: 171,000 tonnes total, of which 38,000 come from the USA and Canada, 121,000 from China, and 12,000 from Japan. Up 0.5% from 1989.

Natto: 147,000 tonnes total, of which 87,000 come from the USA and Canada, 50,000 from China, and 10,000 from Japan. Up 9% from 1989.

Other: 39,000 tonnes total, of which 20,000 come from the USA and Canada, none from China, and 19,000 from Japan. Total food use of 964,000 tons is up 2% from 1989. Source: Japanese trade newspapers and trade associations. These figures do not include a estimated 492,000 tonnes of soybeans used indirectly (in the form of defatted soybean meal) for soy sauce, 222,000 tonnes used for soy protein, and 20,000 tonnes for other indirect uses.

Appendix IV. Directory of direct importers of food-quality soybeans. Appendix V. Traders of food-quality soybeans. Appendix VI. Soy food organizations in Japan (tofu, miso, soymilk, packaged tofu, natto). Appendix VII. Helpful contacts.

Food quality soybean varieties (with maturity group / zone, and year released; table, p. 5): Chico (00, 1983), Grande (0, 1976), Proto (0, 1989), Minnatto (0, 1989), NattoKing (I, 1988), Disoy (I, 1967), Vinton (I, 1978), Vinton 81 (I, 1981), King Natto (I, 1985), Kato (I, 1989),

Magna (II, 1967), Prize (II, 1967), Marion (II, 1976), LS201 (II, 1989), Provar (II, 1969), Beeson (II, 1969), Kanrich (III, 1956), Kim (III, 1956), LS301 (III, 1989), Verde (III, 1967), IL2 (III, 1989; from Illinois), Hawk (III, ?), Emerald (IV, 1975), Vance (V, 1986), Camp (V, 1989), Hartz 936X (VI, 1981), Hartz 914 (VI, 1989), Hartz 922 (VI 1989), Merrimax (? , 1986).

Note: This report was originally published in Sept. 1989, mainly for use by the the American Soybean Association office in Tokyo. Address: 1. Division Director for Asia; 2. Country Director for Japan. Both: American Soybean Assoc.

3662. **Product Name:** Skinny Dippers (Spreads and Dips) [Spring Garden, Bretonne, Hawaiian, Aztec, Spicy Greek, or Chinese].

Manufacturer's Name: Redwood Company (The). Div. of JRJ Trading (Marketer-Distributor). Made in America.

Manufacturer's Address: P.O. Box 1298, London, N20 0YT, England. Phone: 81 / 368 2638.

Date of Introduction: 1992. November.

Ingredients: Incl. tempeh, soymilk, miso.

Wt/Vol., Packaging, Price: 120 gm pack retails for £1.20.

How Stored: Refrigerated.

New Product–Documentation: Spot in SoyaFoods. 1992. Autumn. p. 5. “Skinny Dippers spreads and dips.” Four flavors are based on tempeh: Spring Garden, Bretonne, Hawaiian, and Aztec. Two are based on soymilk: Spicy Greek, and Chinese. Other soya ingredients used, depending on the flavor, include soya bean sprouts and miso.

3663. Arocena, Javier. 1992. [Re: Recent developments at Zuaitzo]. Letter to William Shurtleff at Soyfoods Center, Dec. 14. 2 p. Typed, with signature on letterhead. [Spa; eng+]

• **Summary:** In June 1988 he moved his company to Plaza Santa Maria, 01001 Vitoria-Gasteiz. He knows of three other soyfoods manufacturers in Spain: Natur-Soy, Vegetalia, and La Sojeria, all near Barcelona.

“I was a pioneer in the production of tofu and seitan in Spain but for the last 12 years I have kept on doing the same thing, working only at the family level, making little but doing it well.

“Now we are living in the country at Villanueva Tobera, 09214 Condado de Treviño (Burgos), Spain... about 25 km from Vitoria-Gasteiz.

“As of today, our plans are not to increase our work with tofu and tempeh derivatives, but rather to develop new products, above all the full gamut of fermented soy products... such as miso, tamari, natto, and amazake.” But since he has difficulty understanding English, he would like to get Spanish-language publications. Address: Zuaitzo, Villanueva Tobera, 09214 Condado de Treviño (Burgos), Spain. Phone: 945/28 86 30.

3664. Soyfoods Assoc. of America. 1992. Soyfoods 2000: Merchandising soy products into the next century (Ad). *Natural Foods Merchandiser*. Dec. 16-page color special supplement, 8½ by 11 inches, inserted after p. 28.

• **Summary:** Contains full color ads by Morinaga Nutritional Foods, Inc. (Mori-Nu Tofu, Firm and Extra Firm), Lightlife Foods, Inc. (5 types of tempeh, Tempeh Burgers [Lemon Grill, American Grill, Barbecue Grill], Tofu Pups, Vegetarian Chili, Sloppy J, Foney Baloney, Fakin Bacon, Lean Links), Worthington Foods, Inc. (Natural Touch Okara Pattie, Garden Pattie, Dinner Entrée, Lentil Rice Loaf), Sovex Natural Foods, Inc. (Better Than Milk, Tofu Ice Cream [Vanilla or Strawberry], Good Shepherd Spelt, Millet-Rice Flakes, For Goodness Flakes!), Vitasoy (U.S.A.) Inc. (Light Vanilla, Original, and Cocoa soy drinks).

Contains black-and-white ads by White Wave, Inc. (Five Grain Tempeh, Meatless Tofu Steaks, Soya A Melt Soy Cheeses [Regular or Fat Free] and Singles, Lemon Broil Tempeh, Amaranth Tempeh, Teriyaki Burgers, Organic Tofu, Dairyless Non-Dairy Yogurts, Tempeh Burgers, Sea Veggie Tempeh, Meatless Healthy Franks, Snack'n Savory Tofu), Cemac Foods Corp. (Unbelievable brand Cheesecake; based on nonfat baker's cheese; contains no soy, no fat, no cholesterol), Solait International Ltd. (Solait Powdered Soy Beverage), Tofutti Brands, Inc. (Lite Lite Tofutti, Tofutti Cuties, Land of the Free [Non-dairy frozen desserts, free of fat and sugar, sweetened with fruit juice], Tofutti Egg Watchers, Better than Cream Cheese, Sour Supreme [Non-dairy sour cream], Premium Tofutti, Tofutti Soft Serve Mix), Sharon's Finest (TofuRella), American Natural Snacks (Soya Kaas), Great Eastern Sun (Miso Master brand misos), The Macrobiotic Wholesale Company, Turtle Island Foods, Inc. (Keep It Simple Stirfry-Diced Marinated Tempeh), Betsy's Tempeh (Tempeh), Quong Hop & Co. (The Soy Deli-9 Tofu Burgers, 3 Savory Baked Tofu, Pacific Tempeh, 3 Tempeh Burgers, 7 fresh water packed and vacuum packed tofu), MYCAL Group (natural dehulled soybean flakes).

Articles and sidebars include: "Welcome to the future: Soyfoods 2000." "Soyfoods Association names new executive director" (Virginia Messina, whose photo is shown). "Soyfoods Association mission statement." "The modern evolution of soyfoods," by Michael Whiteman-Jones and William Shurtleff (Shurtleff's photo is shown). "Unraveling the soyfoods merchandising mystery," by Michael Whiteman-Jones. "Research shows soyfoods may help prevent cancer," by Mark Messina, PhD (whose photo is shown). "Key reasons to buy soy: Environmental, nutritional, economic."

This attractive insert was coordinated by Franke Lampe and edited by Lisa Turner, both of NFM.

3665. Vaidya, Achutananda. 1992. Re: Pioneering and making tofu and other soyfoods in Nepal. Letter to William Shurtleff at Soyfoods Center, Dec. 26. 9 p.

• **Summary:** "I started making tofu in 1974. I did not have any connection with my uncle in starting my tofu company, however I did have a chance to see him make tofu at his residence in Kathmandu, and from that time I got the idea in my mind to make tofu myself. I learned the details of the process in Nepal from Mr. Akifumi Nakamura of Kobe, Japan, a member of the Japan Overseas Cooperation Volunteers (JOCV), who worked at the Central Food Research Laboratory in Kathmandu, which was also my office in 1974. I worked together with him as a counterpart for two years learning how to make tofu. During his stay there I learned wholeheartedly the process of making tofu. I learned from him that this food product called "Bhatmas-ko-paneer" in Nepali is known as "tofu" in Japan. Vita-Tofu is the brand-name of my tofu. This tofu is not packaged. It is sold in the form of rectangular cakes out of water-filled cans or bowls because most of the local vegetable shops do not have refrigerators. Even to this day sale of tofu is difficult during the hot summer months because of lack of refrigeration in food retail stores. At the start, for the first 4-5 years, I delivered my tofu from door to door because even at that time the people of Kathmandu did not know about tofu. They did not want to buy it because they did not know how to cook it.

"From July 1979 to March 1980 I was invited to Japan for 9 months training at the Akita Prefecture Brewing Laboratory. During that time I also learned in detail the processes for making soy sauce, miso, and soyamilk. During that period I also got a chance to read *The Book of Tofu*, *The Book of Miso*, *Miso Production*, and *The Book of Tempeh* all of which helped me very much. I still have all those books. In 1985 I was invited by the Rotarians of Akita-Aomori to return to Japan for 1 month (Jan/Feb. 1985) to receive further technical training in making tofu, miso, soy sauce, soyamilk, moyashi (sprouts), koji, fruit fermentations for wine, etc. Today I produce tofu, soy sauce, and miso in my small factory in Kathmandu. I currently have an electric wet grinder imported from Kyoto, Japan, in 1976. My other equipment (a basket pressing machine and tofu presses) were all made in Nepal by Nepalese mechanics."

Accompanying this letter are 27 color photos showing the following: Vita Tofu in Nepal. Making koji with his wife in Nepal. Studying and making tofu, miso, and shoyu in Japan in 1980 and 1985. His business card notes: "Food Technology in Brewing from Japan. Products & Suppliers: Tofu (Vita), Soyamilk (Vitabean milk), Soya Curd, Soya Sauce, & Miso."

His Curriculum Vitae notes that he was born on 28 Dec. 1947, resides at 9/374 Bhedasingh, Kathmandu, and is married. Address: Founder and owner, Nepal Soya

Industries, 9/374 Bhedashing, Jamaguthi, Kathmandu, Nepal.

3666. Gold Mine Natural Food Co. 1992. Macrobiotic, organic and Earthwise products for you and your home (Mail order catalog and price list). San Diego, California. 48 p.
Address: 1947 30th St., San Diego, California 92102-1105.
Phone: 1-800-475-3663.

3667. Troy, John. 1992. The Wizard behind innovative salad dressings: Photos, samples, and interviews available (News release). Cedar Grove, North Carolina. 1 p. Dec.

• **Summary:** Begins with a biography of Troy's boyhood years, with summers spent in western North Carolina on a rural farm with his maternal grandmother doing what he loved best—cooking with his grandmother on her wood stove.

“Troy's journey from kitchen to manufacturer has an unusual twist. Intensely interested in medicine and health, Troy worked as a surgical and research lab assistant in his late teens but his part-time stereo business made him more money in the 60's. The back-side of success was introspection. Troy searched his spiritual aspirations in the 70's. He became vegetarian and was introduced to healthy Asian foods like tofu, miso soybean condiment, and umeboshi plum vinegar. That's when he made the link between food and medicine.

“Troy's next business venture involved natural foods. The American Natural Food Company was born in 1983, where he developed a line of miso-based condiments under his ‘Wizard’ nickname. Natural food stores went into a slump and Troy lost everything, but kept Wizard Baldour his original trademark.

“‘Funny how things happen. Just as I was out of work, my wife, ex-wife and I were given a chance to buy a local restaurant, The Regulator Cafe,’ quips Troy.

“The restaurant became successful and was the perfect place for Troy to create and test new recipes. At the same time, he did formulation consulting for several other natural food manufacturers creating new sauces and condiments from organic and fresh ingredients. This gave him the financial means toward furthering his own comeback.

“Thus, in 1988 he started Simply Delicious, Inc. Now he works out of his own manufacturing facility using the natural ingredients he loves.”

This year alone more than one million bottles of Simply Delicious salad dressing have been sold in the USA alone.

A full color, 4-page brochure titled “Simply Delicious” accompanies this news release. It contains color photos of Chef John Troy and products in three different lines that he makes: (1) Simply Delicious, (2) Harbor Lites Sea Sauces, and (3) Troy's sauces. Address: The Wizard's Cauldron,

8411 Hwy. NC 86 N, Cedar Grove, North Carolina 27231.
Phone: 919-732-5294.

3668. Watanabe, Hiromitsu; Okamoto, T.; Takahashi, T.; Ogundigie, P.A.; Ito, A. 1992. The effects of sodium chloride, miso or ethanol on development of intestinal metaplasia after x-irradiation of the rat glandular stomach. *Cancer Science* 83(12):1267-72. Dec. *

• **Summary:** Rats fed miso eliminate radioactive materials from the body more rapidly than animals not receiving miso.

3669. **Product Name:** Dressings: Creamy Miso (Vegan), or Tamari Vinaigrette.

Manufacturer's Name: Martin Brothers Fresh Dressings.

Manufacturer's Address: P.O. Box 1686, Austin, Texas 78764. Phone: (512) 478-4434.

Date of Introduction: 1992-1994?

Ingredients: Incl. miso.

Wt/Vol., Packaging, Price: 12 oz bottle.

How Stored: Refrigerated.

New Product–Documentation: Spot in *Vegetarian Times*. 1998. March. p. 12. “Mixed dressings.” A 12-oz bottle retails for \$4.29. A color photo shows the labels. Talk with Brett Davis of Martin Brothers. 1998. March 10. These products were first introduced locally in about 1992-94. The company makes only salad dressings. For details, talk with Carl Martin, owner.

3670. Hoshiyama, Y.; Sasaba, T. 1992. A case-control study of single and multiple stomach cancers in Saitama Prefecture, Japan. *Japanese J. of Cancer Research (Gann)* 83:937-43. *

• **Summary:** In this case-control study, consumption of miso soup or miso was associated with increased risk of stomach cancer.

3671. Hoshiyama, Y.; Sasaba, T. 1992. A case-control study of stomach cancer and its relation to diet, cigarettes, and alcohol consumption in Saitama Prefecture, Japan. *Cancer Causes and Control* 3:441-48. *

• **Summary:** In this case-control study, consumption of miso soup or miso was associated with increased risk of stomach cancer.

3672. **Product Name:** [Korean Soybean Miso].

Foreign Name: Doen Jang.

Manufacturer's Name: MSB Food Enterprises, Inc.

Manufacturer's Address: 430 Casanova St., Bronx, NY 10474. Phone: (212) 617-6700.

Date of Introduction: 1992.

How Stored: Refrigerated.

New Product–Documentation: Talk with Michael Lee, V.P. Gomé Tofu Inc. 1996. Nov. 14. His father, John Lee, a Korean-American, started MSB Food Enterprises in 1986 in

the Bronx to make different foods from soybeans using all natural processes. In 1992 they introduced *doen jang* (pronounced TEN-jang, Korean Soybean Jang, like miso). In December 1995 the company moved to a new address: 710 Longfellow Ave., Bronx, New York 10474. Phone: (718) 617-4105.

3673. *Shokuhin Eiseigaku Zasshi (J. of the Food Hygienic Society of Japan)*. 1992. Miso [Miso]. 33:46-51. [Jap; eng]*

3674. Vegetalia. 1992. Recetario [Recipe book]. Castellcir (near Barcelona), Spain. 32 p. 21 cm. [Spa]

• **Summary:** The Introduction to this handsome color booklet (which contains many color photos), was written by Salvador Sala. It states: "Thanks to you, this year in 1992 we will celebrate the 6th year of Vegetalia's existence. It has not been easy to get to where we are now, but it has been very satisfying, especially for me. When, in April 1986, together with Carmen and Tomás, we decided to form Vegetalia, our dream was to facilitate the improvement of the quality of life, in the ecological way."

For each of the following foods there is an introduction, a nutritional analysis, then several recipes: Seitan, tempe (a color photo shows tempeh sold in perforated plastic bags, and immersed in a broth in jars), tofu (a color photo shows tofu sold in self-sealing bags and immersed in a liquid in jars), pickles, amasake [amazake], gomasio [gomashio], and Algas Klamath (a type of sea vegetable), and Vegetalin (made with whole wheat, olive oil, sea salt, natural leavening, and sesame). Page 32 notes that the company makes seitán, tempe, tempe estofado, tofu, tofu tres delicias, paté -de tofu y miso, etc. It also sells an large line of natural foods made by other companies, including: Soyçisse (a type of soy frankfurter). Tofume (smoked tofu). Biosoy (soymilk). Postre de Soja (Soymilk desserts, in hazel-nut/filbert, vanilla, chocolate, apricot, strawberry, and pear flavors). Soy yogurt (natural and low fat). And Vegetalia is working to help the Third World via CEPAN in Brazil.

Note: This is the earliest Spanish-language document seen that mentions amazake, which it calls "amasake." Address: Castellcir (near Barcellona), Spain. Phone: +34 3-866 61 61.

3675. Berk, Zeki. 1992. Technology of production of edible flours and protein products from soybeans. *FAO Agricultural Services Bulletin* No. 97. 178 p.

• **Summary:** Contents: Foreword. 1. The soybean: Background, production, marketing, agricultural characteristics, physical characteristics and morphology of the soybean, chemical composition (moisture, proteins, lipids, carbohydrates, minerals). 2. Utilization of soybeans: Utilization options for soybeans, whole bean utilization, the oil mill route (utilization of the oil fraction, utilization of the meal fraction). 3. Oil-mill operations: The expeller

(operation principles, advantages and disadvantages of the expeller process, equipment), the solvent extraction process (operation principles, receiving and storage of soybeans, preparation for extraction, solvent extraction, post-extraction operations). 4. Edible soybean flours and grits: Introduction, definitions, composition and quality parameters (definition and classification of edible soy flours and grits, composition, quality standards), full fat soy flour and grits (production processes, utilization), defatted soy flours and grits (production processes, utilization). 5. Soybean protein concentrates (SPC): Introduction, definition, composition, types, production processes (the aqueous alcohol wash process, the acid-wash process, heat denaturation/water extraction process), utilization (basic considerations, use in bakery products, meat products, other uses). 6. Isolated soybean protein (ISP): Introduction, definition, composition, types, production processes (conventional process, problems in conventional processing, alternative processes), utilization (meat products, seafood products, cereal products, dairy-type products, infant formulas, other uses). 7. Textured soy protein products: Introduction, spun-fibre based texturization, extrusion texturization, steam texturization, utilization (meat extenders, meat analogs, other applications). 8. Soymilk and related products: Introduction, composition and classification, production processes (the traditional process, the Soya Technology System (STS) Process, the INTSOY (Illinois) process, the Buhler Process for soy micro-powder), soymilk related products. 9. Tofu, tempeh, soysauce and miso: Introduction, soy sauce, miso, tempeh, tofu (Introduction, regular and silken tofu, kori-tofu, deep-fried tofu, fermented tofu). Appendixes: I. Standards and specifications. II. Organizations and government agencies. III. Manufacturers and suppliers of soybean processing plants and equipment. IV. Sample budget quotations for complete soy processing or soybean related food manufacturing plants. Address: Technion-Israel Inst. of Technology, Haifa, Israel.

3676. Buswell, Robert E., Jr. 1992. The Zen monastic experience: Buddhist practice in contemporary Korea. Princeton, New Jersey: Princeton University Press. xiii + 264 p. + [8] p. of plates. See p. 120-21. Illust. Index. 25 cm. [190+* ref]

• **Summary:** The section titled "Meals" (p. 120-25) notes that there are many similarities between the diet in the monasteries and that in the homes of the local agricultural peasants. "The major difference is that all meals served in the monasteries are vegetarian [actually vegan]. The bodhisattva precepts of the Mahayana branch of Buddhism forbid monks from eating the flesh of any sentient being." Cereal grains provide 70-80% of the caloric intake. "In addition to steamed rice, meals always include some kind of soup (*kuk*)... The soup is generally based on tojenjang, a

fermented bean paste like Japanese miso and flavored with soy sauce (*kanjang*) and sesame salt.”

“Bean products constitute one of the largest components of the monastic diet during all seasons. The basis of many bean products is *meju*, a fermented bean paste somewhat like the Japanese *nattô* [more like the Japanese *miso-dama*, or soybean koji]. *Meju* is used as a major ingredient in producing soy sauce, red-pepper paste, and *toenjang*. Cooked black [soy] beans, seasoned with soy sauce, sugar, and white sesame, are served at least once a day. Tofu (*tubu*), or bean curd, frequently appears on this menu, but this is always purchased from a professional maker, who delivers it to the monastery on the back of his motorcycle. When the tofu is especially fresh, it is served steamed in whole blocks, to be dipped into a sauce made of soya, sesame oil, and red-pepper sauce.”

Note: The author was privileged to spend five years as a Buddhist monk in Korean monasteries between 1974 and 1979, primarily at Songgwang-sa. He made two additional trips to Songgwang-sa in Nov. 1987 and July 1988. The monastery is in Suncheon near the southern coast of Korea.

3677. Cardenas, Danilo C.; Legaspi, Benjamin M. 1992. The status of soybean production and utilization in the Philippines. In: *Increasing Soybean Production in Asia: Proceedings of a Workshop*. Bogor, Indonesia: CGPRT Centre. 187 p. See p. 119-35. Held 21-24 Aug. 1990 at Phitsanulok, Thailand. [8 ref]

• **Summary:** Contents: Introduction. Production situation: Production trends, economics of soybean production, price trends, marketing of soybean. Philippine foreign trade situation: Soybean imports, soybean exports. Soybean utilization. Government policies/programs affecting the industry: Policies, programs. Major problems besetting the local soybean industry. Conclusions.

The soybean, also known locally as “utao,” has become an increasingly important economic crop in the Philippines. Yet in 1987 (the latest year for which figures are given) only 5,698 tonnes (metric tons) were harvested from 6,490 hectares, having a value of 45,169,000 pesos. This represented only 0.02% of the total Philippine quantity of agricultural production, and only 0.05% of total farm area and value. Philippine soybean production peaked at 11,466 tonnes in 1982. Most of the country’s soybeans are grown in the southern Mindanao region (72.1%), followed by northern Mindanao (10.0%) and central Mindanao (9.4%). Imports of soybeans and products have steadily increased since Philippine farmers do not produce enough soybeans to meet local demands; the value (FOB US\$) rising from \$61,989,000 in 1980 to \$127,981,000 in 1988. The main imports are soybean meal (accounting for 86.87% of total import value), refined soybean oil (5.19%), soybeans (4.18%), and crude soybean oil (223%). Before March 1986 the National Food Authority (NFA) had the sole authority to

import soybeans, but with the introduction of the trade liberalization program, importation has reverted to private firms. In 1989 the country’s major sources of imported soybeans were China (which supplied 42% of total imports), Brazil (34%), and the USA (15%). Exports, which are negligible, have grown from \$136,000 to 1,123,000 during the same period. The main exports are soy sauce (accounting for 91.03% of total value), salted and fermented soybeans (*tausi*, 3.34%), and soybeans (2.65%).

Table 7 lists and describes “Soybean-based food products popularly used in the Philippines.” Fermented products include soy sauce, salted and fermented soybean (*tausi*), tempe (tempeh), soybean paste (miso), and soybean curd (fermented tofu cubes; a soft cheese-type product with a salty but mild flavor, eaten as a relish or cooked with meat and vegetables). Non-fermented products include soybean sprouts (*toge*), soybean cheese (*tokwa* [tofu]), Geerlings cheese (taho, soymilk curds; a sweet dessert or snack food for children), soybean milk, and roasted soybean (soy coffee).

“In terms of food usage, Filipinos, unlike other Asians, have not developed a taste for soya-based products... Most of the soy products available in the market are either made at home or in family-operated shops.

“It is interesting to note from the report of Co (1987) that small scale food processors engaged in manufacture of taho and tokwa preferred locally grown beans to imported ones. They claimed that local soybeans have a distinctive ‘fresh’ quality which imparts a finer and smoother texture to their finished products providing a longer shelf life than that produced from imported beans.

“Recently, several developments in the local economy have signaled a revival of interest in the use of soybean as food. In 1980 Nestle Philippines Incorporated began commercial production of powdered soymilk products and later a baby soya-cereal food formulation and a soya-based meat extender which is produced primarily for export to other Asian countries. Today Nestle Philippines, in co-operation with the Land Bank of the Philippines, the Regional Offices of the Department of Agriculture and PCARRD is encouraging local production of soybean and had adopted a no importation policy.

“Some years ago, the use of TVP also gained a permanent foothold in the local processing industry. It is used in the manufacture of ground meat products and as a meat extender. Almost all TVP used in the country is imported except for the locally manufactured full-fat TVP which is being produced by the Vitarich Corporation, one of the biggest feed millers in the country. The company has built a full-fat soya processing plant capable of utilizing 900 MT [metric tons] of soybean per month. Unfortunately, all its raw soybean requirements are imported from the U.S. and China.

“Soybean flour, protein concentrate and protein isolates are the newest soya-based products and are now used extensively in the country for the formulation of meat emulsion products. All raw materials are imported and there is no local manufacturing capability at present.”

“Programmes: As early as the 1970s, the government tried to involve itself to some degree in boosting national soybean output, despite the low priority it accorded to soybean in general. It was an involvement borne out of an urgent need to meet the growing requirements of the local feed milling and livestock industry, rather than of a need to address the high incidence of malnutrition among Filipinos. Accordingly, the government launched a number of programmes to improve soybean production, most of which failed to achieve their goals. At present, only the PCARRD-coordinated Soybean Pilot Production Programme continues to function. This programme was initiated in late 1983.”
Address: 1. Supervising Science Research Specialist, Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development (PCARRD); 2. Dep. of Agriculture Bureau of Plant Industry, Los Baños National Crop Research and Development Centre. Both: The Philippines.

3678. Chainuvat, Chavalut. 1992. Soybean production and utilization in Thailand. In: *Increasing Soybean Production in Asia: Proceedings of a Workshop*. Bogor, Indonesia: CGPRT Centre. 187 p. See p. 1-15. Held 21-24 Aug. 1990 at Phitsanulok, Thailand. [6 ref]

• **Summary:** Contents: Introduction: Importance of agriculture, establishment of the Department of Agricultural Extension, DOAE's functions & responsibilities, soybean production, soybean production area, crop seasons, cultivation practices, harvesting, vegetable soybean. Soybean production and consumption campaign: Previous activities, 1990 activities, new creative work. Conclusion.

Thailand produces about 650,000 tons of soybeans each year. Of this, the first-grade seed is used for either home food industries (150,000 tons) or for next season's seed and other grain use. The remaining 500,000 tons are second grade seed, which are crushed to yield soy oil and soybean meal. The 20% of production used for food is used as follows: Fresh soybeans (*toa rae*) sold in open markets. Home industries: Soymilk, curd (tofu), soy sauce, fermented soybeans (*tao chiew*), soybean sprouts, starch or protein isolate for hot dogs or other sausages, and crisps (*Tao Nao*). Soy milk industries: Instant powdered milk mixed with dairy milk, fresh soymilk in packages, fresh soymilk in open market restaurants. “No soy grain [soybean seeds] is exported, except for a small amount of first-grade soybean to Singapore and Malaysia for making the above mentioned food.”

“Vegetable soybean: Vegetable soybean is becoming more popular in agri-business, as many frozen-product

companies are showing interest in this new crop. Seed is imported from Japan and Taiwan. Production yield has been impressive in several regions of the country such as Chiangmai, Chachoengsao, Petchburi, etc. Two companies which are close to the extension offices, are Chiangmai Frozen Food Co. and Okada Corporation Ltd.

“The Department of Agricultural Extension plays the role of middleman between private companies and the farmer. Extension officers also transfer new information to the local farmers. Additionally, a national plan on vegetable soybean has been submitted to the policymakers and a future plan includes the promotion of domestic consumption.”

“Previous activities: In 1972 the idea of a soybean campaign was first thought of by scientists in the Institute of Food Research and Product Development, Kasetsart University and the Department of Agricultural Extension. The major sponsor and co-creator, was the American Soybean Association. The co-institutes organized a grand dinner to open the campaign. Afterwards, the Department of Agricultural Extension encouraged Bangkok and provincial headquarters to organize exhibitions, field days and local broadcasting or publications on soybean production and processing. The home-economists from various provinces and organizations met for training and a seminar. The Food Institutes of Kasetsart University played a major role through publications, technology transfer, demonstrations and seminars.”

“Since the opening of the soybean campaign, we assume that about 50 percent of the total population has received information about soybean. At least 10 percent of the population has started or increased soybean consumption, both industrial and home made products. This evaluation was carried out by the working group using stratified random sampling with a well-designed questionnaire.

“From general observation, soybean has become more popular than in the past. Urban people are now aware of soybean products and do not object to consuming soybean in their regular diet. Rural people, however, have very definite ideas about food and it is difficult to change their traditional food habits. The main target of our campaign was therefore to introduce soybean products into the daily food pattern of rural villagers.” Address: Div. of Crops Promotion, Dep. of Agriculture Extension, Bangkok, Thailand.

3679. Lark, Susan M. 1992. *The menopause self help book: A woman's guide to feeling wonderful for the second half of her life*. Berkeley, California: Celestial Arts. 239 p. Illust. Index. 22 x 22 cm. [228* ref]

• **Summary:** This is a revised edition (but revised only in very small ways) of the 1990 edition, also published by Celestial Arts. The cover of both books is the same except that the words “Revised & Updated” appear near the top of

the cover in the 1992 edition—but not on the title page. The title page and the total number of pages in both editions are the same. Page 234, the index, and the following page about the author are all slightly expanded. The page facing the inside rear cover, advertising various books published by Celestial Arts, has been completely revised. The rear cover has a more recent portrait photo of the author. The text related to soy is identical and on the same pages.

Susan M. Lark, M.D., born in 1945, “is a noted authority on women’s health care and preventive medicine. Dr. Lark has been on the clinical faculty of Stanford University Medical School, Division of Family and Community Medicine, where she continues to teach. She has been the director of a number of clinical programs for women and worked with thousands of patients in her nearly twenty years of private practice... Dr. Lark is available for phone consultation at (415) 964-7268.” Address: M.D., 101 First St., Suite 441, Los Altos, California 94022. Phone: 415-964-7268.

3680. Leneman, Leah. 1992. *The tofu cookbook*. Hammersmith, London, England: Thorsons—An imprint of HarperCollins Publishers. 127 p. Illust. Index. 24 cm.

• **Summary:** “These no-meat, no-dairy, cruelty-free recipes foster health and a healthy environment by replacing meat and dairy products in traditional recipes with tofu... and soy milk. From bouillabaisse and guacamole to lasagna, curries, and ice cream, here are delicious new takes on your favorite international recipes.” The copyright page notes: “Many of these recipes previously appeared in *The International Tofu Cookery Book* and *Soya Foods Cookery*.”

Contents: Introduction. Types of tofu. Other soya (soy) foods: Soya milk, soya yogurt, soya mayonnaise, bean curd sticks or sheets, tempeh, soy sauce, miso, soya cheese (such as Veeze). Notes on recipes. Making tofu at home. 1. Soups and dips. Note: Ingredients for every recipe are given in both Imperial/Metric and American units. 2. Salads. 3. British- and American-style dishes. 4. Mexican-style dishes. 5. Mediterranean-style dishes. 6. Indian-style dishes. 7. Chinese- and other Far Eastern-style dishes. 8. Desserts. Recipe reference chart (for quick and easy recipes, recipes suitable for a single portion, and recipes for a dinner party).

Note: *Webster’s Dictionary* defines bouillabaisse (pronounced bu-yuh-BAYZ, a term derived from the French and first used in 1855) as a highly seasoned fish stew made with at least two kinds of fish. See also: Potpourri. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

3681. Margen, Sheldon. 1992. *The wellness encyclopedia of food and nutrition: How to buy, store, and prepare every variety of fresh food*. New York, NY: Rebus. 512 p. Illust. Index. 26 x 21 cm.

• **Summary:** Soy-related information appears on the following pages: Soybeans, illustrated and described (p.

60). Sprouts, including soybean and adzuki bean sprouts (p. 158-60). “Soybean sprouts contain small quantities of toxins that can be harmful, if eaten in large quantities” [uncooked, see p. 356]. Legumes (p. 348-58), incl. soybeans, “soy nuts,” soy milk. Legumes are “by far the best plant source of protein...” Per half 3½ ounces (½ cup cooked) soybeans contain more calories, fat, protein, iron, and calcium than any other of the 15 legumes listed (p. 351). How to avoid the gas problem. Tofu, miso, and tempeh (p. 357, sidebar). Non-dairy frozen desserts (made from tofu, p. 461). Soy cheese (p. 469). Soybean oil and margarine (p. 497-98).

Concerning vitamin K, see p. 16, 27, 30. The RDA for adults is 45-80 mcg. The body stores this fat-soluble vitamin for a relatively long time. Without this vitamin, blood would fail to clot. Preliminary studies suggest it also plays a role in maintaining strong bones in the elderly. Bacteria in the body’s intestines manufacture about 80% of the vitamin K we need, and the rest comes from the diet. Deficiencies are almost unknown, and they are usually caused by an inability to absorb the vitamin, rather than an inadequate intake. Sources: Cabbage, cauliflower, spinach and other leafy vegetables, cereals, soybean oil and other vegetable oils. Address: School of Public Health, Berkeley, California.

3682. Miso no ryôri: Ima minaosareru eiyôka to kenkô kôka. Misoshiru dengaku kara yôgashi made miso no saihakken [Miso cookery: Now being regarded as nutritious and healthy. From miso soup and dengaku to Western-style confections: The rediscovery of miso]. 1992. Tokyo: Chuo Koronsha. 160 p. Illust. (color). 30 cm. Series: Kurashi no Sekkei, no. 208 (1992). [Jap]* Address: Japan.

3683. Santos, D.T. 1992. Soybean cultivation in the Philippines. In: *Increasing Soybean Production in Asia: Proceedings of a Workshop*. Bogor, Indonesia: CGPRT Centre. 187 p. See p. 137-50. Held 21-24 Aug. 1990 at Phitsanulok, Thailand.

• **Summary:** Contents: Introduction. Development of the soybean industry: Nestlé Philippines’ soybean operations (Nestlé soya farm, commercial soy production, soy loan and buy-back scheme, soy sourcing beyond Tupi, growth requirements and adaptability of soybean, soybean cropping systems), crop research and development, extension programme. Appendix 1: Soybeans—maize monocropping (crop rotation). Appendix 2: Maize—soybeans—crop rotation (three consecutive maize followed by soybeans). Appendix 3: Maize—soybeans intercropping (6 rows corn -4 rows soybeans). Appendix 4: Wet season 1988—soybean researchers at Nestlé soya farm Tupi South Cotabato.

“Soybean, first cultivated in China during the eleventh century BC, was introduced into trading regions of the

Philippines in the fifteenth century AD. Its cultivation and use spread throughout the Philippines and then the western hemisphere in the nineteenth century. Soybean... is considered by scientists and economists to be a major food source for the future. Although currently produced in small quantities, both traditional and new soybean products such as soya cheese, soybean curd, and miso, and Nestlé's Twin, Vita, Soyex and Ceresoy, are popular with Filipinos.

"Development of the soybean industry: Soybean production in the Philippines has developed in response to an increasing demand. Varietal selection and development commenced in the early 1930s. In the 1970s, the Philippines Council for Agriculture and Resources Research and Development (PCARRD), in cooperation with the University of the Philippines at Los Baños and the Department of Agriculture, introduced the National Soybean Production Programme (NSPP) which promoted development of, and self sufficiency in, soybean... Under the programme, soybean planting was established throughout the country. A large soybean extraction plant with a 50 ton daily capacity was built by the Philippines Asia Food Industries Corporation in the early 1980s to produce the livestock industry's requirements of soybean oil and meal as well as soy-based food products.

"However, the combined impact of limited raw materials, the 1984 recession and some external political pressures led to the closure in 1986 of the factory and the NSPP. Individual initiatives among former participants allowed research and development activities to continue.

"PCARRD is currently engaged in a comprehensive nutrition-based programme covering soy production, post-harvesting processing, marketing, product utilization and development of improved varieties. This programme is funded by the International Research and Development Center of Canada."

"Nestlé Philippines' soybean operations: During the last ten years, Nestlé Philippines has developed new soy-based products with the assistance of Nestlé Switzerland. These include Vita Choco Drink, Twin, Ceresoy and Soyex.

"Nestlé Philippines, through Nestlé Soya Farm, continues to identify promising soy varieties and to generate the appropriate production and post-harvesting processing techniques to ensure its factory receives high quality raw materials.

"Nestlé soya farm: This six hectare soy research and demonstration farm in Tupi, South Cotabato has three main functions: production, crop research, and development and extension." Address: Nestlé Philippines, Inc., Agricultural Services Dep., 335 Gil Puyat Ave., Makati, Metro Manila, Philippines.

3684. Sass, Lorna J. 1992. *An ecological kitchen: Healthy meals for you and the planet*. New York, NY: William

Morrow and Company, Inc. xv + 492 p. Index. 26 cm. [35+* ref]

• **Summary:** This excellent vegetarian (actually vegan), ecological cookbook, proves that the most environmentally sound diet is also the healthiest and, for many, the most delicious and economical. It emphasizes whole grains, fruits and vegetables, focuses on unprocessed and minimally packaged foods, use of regional and seasonal foods, efficient menu planning, and creative recycling of leftovers. Delightful quotations relevant to the book's subject are scattered throughout.

The chapter titled "Tofu and tempeh" (p. 217-31) contains basic information and many recipes. Other soy-related recipes include: Thai vegetable soup (with tofu, p. 39). Ten-ingredient lo mien (with tofu, p. 165-66). Triple bean maybe it's chili (p. 186-87). Black soybeans (p. 191-92; keep the skins on by adding salt). Curried mustard green with tofu (p. 255). Chinese-style stir-fry of kale, onions, and marinated tofu (p. 258). Tahini-miso spread (p. 315). Sun-dried tomato dip (with tofu, p. 318). Brilliant beet dip (with tofu, p. 319). Onion upside-down cornbread (with tofu, p. 323-24). Tofu whip (like whipped cream or whip topping, p. 398).

The very fine chapter / glossary "Ingredients A to Z" (p. 399-468) includes: Aduki / azuki beans, agar, almond butter, almonds, amaranth, amasake (incl. koji), arame, barley malt syrup, black beans-fermented (salty black beans), Bragg liquid aminos (like soy sauce, but not fermented, making it an ideal seasoning for those who suffer from yeast sensitivities), daikon, dulse, gomashio, hijiki, job's tears, kombu, kuzu (kudzu), kuzu kiri, lupins, miso, mochi, natto, nigari, nori, peanut butter, peanuts, quinoa, rice-brown, rice cakes, rice syrup, sea vegetables, tamari-roasted seeds, seitan (wheat gluten), sesame butter (tahini), sesame oil, sesame seeds, shoyu, soybeans, soybeans-black, soy cheese, soy flakes, soy flour, soyfoods, soy grits, soy ice cream, soy milk, soynuts, soy oil, soy powder (powdered soy milk), soysage, soy sauce, soy yogurt (fermented), tahini, tamari soy sauce, tempeh, tofu, umeboshi plums, wakame, wasabi, winged beans. Note: Also contains recipes for many of these glossary items.

A color portrait photo on the inside rear dust jacket shows Lorna Sass—with a brief biography; she is a culinary historian, cookbook author, and food writer. Address: Box 704, New York City, NY 10024.

3685. Shinshu-Miso Research Institute. 1992. *Report of the Shinshu-Miso Research Institute* No. 33. p. 1-125. [Jap; eng]
Address: Nakagosho 469-6, Nagano-shi 380, Japan.

3686. Toomay, Mindy; Hadler, Susan Geiskopf. 1992. *The best 125 meatless pasta dishes*. Rocklin, California: Prima Publishing. xvi + 318 p. Illust. Index. 22 cm.

• **Summary:** This vegetarian pasta cookbook contains information about tofu, tempeh, and miso, plus 7 tofu recipes, 2 tempeh recipes, and 2 miso recipes. Agé (puffy deep-fried tofu) is used in: Soba in broth with fried vegetables and age. Soy sauce is used in various broth recipes.

3687. Toussaint-Samat, Maguelonne. 1992. *A history of food*. Translated from the French by Anthea Bell. Malden, Massachusetts, and Oxford, England: Blackwell Publishers Inc. xix + 801 p. Illust. Index. 23 cm. [200* ref]

• **Summary:** A fascinating book of vast scope. The author's principal interest is in the medieval and Renaissance culture of Europe, in particular the domestic economy, food, and clothing. Thus the focus of the book is on Europe (especially France) and the Middle East. It also emphasizes the symbolism of foods.

Chapter 2, "The history of gathering," contains a section titled "Soya: the most widely eaten plant in the world" (p. 51-56), which is long on myth and symbol, and short on historical accuracy. It briefly discusses the following: Soya milk, soya flour, miso, jiang, soya sauce, soya oil and meal, bean-sprouts, tofu, dried soya beans.

Interesting chapters include: The history of meat (p. 93+). The history of cereals (p. 125+). The history of oil (p. 205+). The history of bread and cakes (p. 223+). An essential food: The history of salt (p. 457+). Spice at any price (p. 480+, including The great trading companies). The lure of sugar (p. 552). The potato revolution (p. 711+). The assurance of dietetics (p. 755, including an excellent "Chronology of dietary progress" from 2 million B.C. to the present, with detailed information on food developments during the paleolithic, mesolithic, and neolithic periods of the Stone Age). Address: Historian, journalist, writer, France.

3688. **Product Name:** [Organic Barley Miso].

Foreign Name: Bio Miso Orge/Gerst.

Manufacturer's Name: Danival.

Manufacturer's Address: Moulin d'Andiran, 47170 Mezin, France. Phone: 58-651-002.

Date of Introduction: 1992-.

New Product-Documentation: Letter and catalog sent by Valérie Gevaert. 1997. March 25. Lima-Andiran was acquired in early 1990 by Pierre Gevaert's son (Daniel) and his wife (Valérie), and renamed Danival. The location of their factory in Mézin, France, has not changed.

3689. **Product Name:** Organic TofuBurgers [Original].

Manufacturer's Name: Stow Mills (Distributor).

Manufacturer's Address: Chesterfield, NH 03443-0301.

Date of Introduction: 1992?

Ingredients: Organic tofu (filtered water, organically grown soybeans, natural calcium chloride nigari—a natural

mineral coagulant, not a preservative), fresh carrots, rolled oats, sunflower seeds, sesame seeds, dried currants, barley malt syrup, red miso (water, rice, soybeans, salt), onion powder, garlic powder, spices, guar gum, natural orange extract, canola oil.

Wt/Vol., Packaging, Price: 6.5 oz (184 gm) vacuum pack. Retail for \$1.59 (7/92, Maryland).

How Stored: Refrigerated.

Nutrition: Per 3.25 oz patty: Calories 240, protein 14 gm, carbohydrate 19 gm, fat 12 gm, cholesterol 0 mg, sodium 85 mg, dietary fiber 12 gm.

New Product-Documentation: Product with Label purchased at Fresh Fields, Rockville Pike, Maryland. 1992. July 20. Label is 4 by 5.5 inches. Self adhesive. Dark blue, red, and black on light blue and light green. Color photo of a Tofuburger with tomato slices, onion rings, and a lettuce leaf. "All natural. Wheat free. Low sodium. Meatless. Dairy free. No cholesterol. High calcium. High protein. Stow Mills Tofu Burgers are precooked for your convenience. Please do not overcook. To prepare, just grill, fry or microwave until heated."

3690. Takeya Miso Co., Ltd. 1992? Takeya-Miso: Soy bean paste (Brochure). Nagano, Japan. 4 p. Undated. 26 cm. [Eng]

• **Summary:** This attractive color brochure presents Takeya Miso Co. Ltd, "since 1872." Miso—"It comes from nature. It goes with everything. Nature's perfect food—healthy, tasty. Takeya miso!" Contains 6 recipes with photos. Address: 2-3-7, Kogandori, Suwa City, Nagano 392, Japan.

3691. Arifuku, Ichiro; Kakuichi, T.; Kobori, M.; Shinohara, K. 1993. Miso kasu chûshutsu-butsumo in vitro ni okeru seitai bôgyo tantô saibô ni taisuru sayô [Effect of extracts of miso dregs on several cultured biophylactic cell lines]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Japanese Society for Food Science and Technology)* 40(1):69-74. Jan. 15. [10 ref. Jap; eng]

Address: 1. Food Industrial Research Inst., Tottori prefecture, Sakaiminato, Tottori 684; 2. Fujisawa Pharmaceutical Co. Ltd., 5-2-3 Tokodai, Tsukuba, Ibaraki 300-26; 3-4. National Food Research Inst., The Ministry of Agriculture, Forestry and Fisheries, 2-1-2 Kannondai, Tsukuba, Ibaraki 305. All: Japan.

3692. *Times (Milford, Nebraska)*. 1993. Soybean foods reduce cancer risk. Jan. 27.

• **Summary:** Doreen Blackmer, director of consumer information for the Nebraska Soybean Program, is excited about the potential significance of soybeans in fighting cancer. She explains that "you can substitute tofu for part of the cheese in your lasagna recipe. You can add a teaspoon of miso to your baked beans."

Dr. Mark Messina says that the first “golden age” of nutrition was from 1910 to 1940 with the discovery of all the vitamins and minerals essential to good health. He says we are now entering the second golden age when the value of “anti-nutrients” is being discovered. This is where soybeans come into the picture.

3693. Potter, Michael. 1993. Re: A brief chronology of Eden Foods. Letter to William Shurtleff at Soyfoods Center, Feb. 14—in reply to inquiry. 2 p.

• **Summary:** William Shurtleff sent Michael Potter a chronology of Eden Foods that he (Shurtleff) had compiled from various sources, and asked for Potter’s comments, which follow. This letter is a follow-up to a letter written by Potter to Shurtleff on 1 March 1992.

“Eden Foods, Inc. was first incorporated as a non-profit corporation in the winter of 1967/1968, I believe. It was later (Bill Bolduc told me, in a manner that was not consistent with state law) reincorporated (after Ron Teeguarden pulled out) as a regular corporation under the name Eden Organic Foods, Inc. This WAS done by Bill Bolduc in November of 1969.

“Mr. William Shurtleff, traditionally corporations do not define the date they were *founded* as the date they became ‘officially’ or legally ‘incorporated.’ Commonly, decades separate these two occurrences, sometimes centuries.

“These thoughts will loosely follow your 2-page ‘chronology of key events.’ Eden was buying and selling soyfoods, tamari and miso, for more than 2 years prior to Nov. 4, 1969.

“During the spring of 1970 I became a partner of Joyous Revival natural foods in Birmingham, Michigan. I developed a relationship with Bill Bolduc... [the Eden’s store’s manager], as we were both attempting the same things and respected the quality of the work each other was doing. Frequently Bill B. asked me to move to Ann Arbor.

“After a falling out with my partners in December 1970, I visited Bill and Judy [his wife] in January 1971 and was hired by Bill on the spot, at his home, in his kitchen. My first job was to help a failing new Eden retail outlet in downtown Detroit on the campus of Wayne State University. (I never lived in Detroit at the time. I lived in Walnut Lake 30 minutes north.) By late spring or early summer 1971, after closing this Eden store, my pregnant wife Carol and I moved to Ann Arbor where I assumed responsibility for the Eden Foods store at 211 South State St. It is of interest that Eden Foods’ name had already been legally changed back to just Eden Foods, Inc., when I moved to Ann Arbor.

“During the winter of 1971/1972 I was given what amounted to 13.5% of the common stock of Eden Foods, Inc. The share holdings then broke down: Bill Bolduc and Tim Redmond owned the same number of shares, but Judy

Bolduc owned a small number of shares so the Bolducs owned the largest block.

Mid-Summer, July 1973, Bill thought the company was going out of business and after I stepped into a near fist fight between Bill and Tim outside the warehouse we were sharing with Mid West Natural Foods; I told them ‘that if they’d just quit fighting and leave things alone, all would be well.’ Bill immediately offered to sell me all of his stock. I asked Bill how much he wanted for it. After a very brief pause he said “\$2,500.” I told him that I’d try to get the money. We parted. Bill left and Tim and I went back to work. The next day I visited a friend named Ray Suber and asked him to help me purchase the stock. He said he would and to come back the next day. I did and was given \$2,500 cash as a ‘contribution to the natural foods movement.’ With the \$2,500 I purchased all of Bill and Judy’s Eden Foods, Inc. stock. Neither Bill nor Judy ‘sold their stock back to the company.’ They sold it to me for cash. They were glad to get out because they were convinced the company couldn’t make it.”

From a talk on 31 Oct. 1993: There was a 51% Tim Redmond / 49% Michael Potter share holding configuration in Eden Foods, but it lasted for less than a year. When Michael bought all of the Bolduc’s stock, he owned the majority of Eden Foods’ stock. But he realized that Tim Redmond’s father might withdraw his \$10,000 if he knew Michael had majority ownership, and if that happened Eden would not be able to survive. So Michael immediately (as part of the transaction with the Bolducs) gave Tim enough of his stock so that Tim owned 51% and Michael owned 49%.

About 3 months later, Michael loaned about \$44,000 in cash to Eden Foods. This was money that Michael’s father had entrusted to him. But Michael became uncomfortable having no control over something for which he was responsible—both the company and his relationship with his father. Michael discussed his feeling with Tim, and Tim agreed to give Michael equal ownership in exchange for Michael converting his \$44,000 loan into an investment in Eden Foods. Now neither partner could make a major decision without the other’s agreement—a good situation for Eden Foods.

“In September 1973, at Royce Seeger’s home, I received the unanimous recommendation of an employee steering committee and became Bill Bolduc’s successor as president of the company. My first goal was to get us away from MidWest Natural Foods for moral and ethical reasons. I located a new facility in the process of being constructed and developed a relationship with the owner/builder, John Sheer. In the spring of 1974 we relocated to that 4601 Platt Road, Ann Arbor warehouse.

“During this period I was building and moving Eden’s retail store to 330 Maynard St. in Ann Arbor. The move actually took place in the summer of 1973. It included a

large store, a large fast food (chapati sandwiches, etc.) deli, and a natural foods bakery named Sun Bakery, that relocated itself from Kalamazoo, Michigan. These three operations were under one roof in a 6,000 square foot old printing plant at the University of Michigan's campus, leased by Eden Foods, Inc. This operation paid off all Eden's debt and paid for the new warehouse, computer, offices, trucks and equipment. The wholesale operation was carried by the retail until late 1974 after trucks were put out on regular routes throughout the Mid-west.

In October 1974 I made my first of eleven trips to the People's Republic of China (Eden made a total of 13 trips between Oct. 1974 and Nov. 1979) and stopped in Japan on the way back to visit Yuko Okada at the Muso Company. Prior to 1974 Eden Foods imported shipments from Mr. Kazama of the Mitoku Co. in Japan. After my visit to Muso, seeing their educational activities, their macrobiotic center activities, etc., I decided to import Japanese foods exclusively from Muso. Tim Redmond had cultivated the Mitoku connection and initiated our first Japanese imports.

"Spring 1979 Cliff Adler is hired by myself to do sales work for Eden in Chicago. During that summer he lends Eden Foods \$100,000, for which he is paid bank interest rates.

"After the Nov. 27, 1979 warehouse fire Cliff converted his \$100,000 to stock in February 1980 as Tim Redmond left, certain that Eden was finished. Tim's stock was redeemed with Eden giving him title to our operations at 330 Maynard St. In one transaction Tim was bought out by the company, Cliff and I became 34% shareholders, 10% was sold to Frank Dietrich of Natural Foods, Inc. (Toledo, Ohio) for \$100,000 and the following percentages of Eden Foods' common stock were given to Eden managers shortly after we laid off 35 people: Ronnie Roller 5%, Michael Gordon 4%, Mark Cook 4%, Kathy Knor 3%, Bill Swaney 3%, and Bob Duha 3%. This free stock was limited to book value and had to be sold to Eden Foods whenever the person left the company regardless of the reason for leaving. It could not be sold another way.

"In early 1984 when Mike Gordon left Eden his stock was awarded to Michael Potter as a bonus by the Board of Directors... to be continued." Address: Chairman, Eden Foods, Inc., 701 Tecumseh Rd., Clinton, Michigan 49236. Phone: 517-456-7424.

3694. Bates, Dorothy R.; Wingate, Colby. 1993. *Cooking with gluten and seitan*. Summertown, Tennessee: The Book Publishing Co. 128 p. March. Illust. by Barbara McNew and Thomas Johns. Index. 22 cm.

• **Summary:** This is vegan cookbook. Seitan is gluten cooked in a soy sauce broth. This book calls vital wheat gluten "instant gluten flour." It has already had the starch and bran removed and needs only to be mixed with

seasoning and liquid. Miso is used as a seasoning in several recipes, and "tamari" in many seitan seasoning sauces.

Contents: Introduction. A word on nutrition. Making gluten. Making seitan. Ingredients. Recipes (a nutritional analysis is given for each recipe): Appetizers, soups, salads, American, Asian, Continental, Mexican, Italian. Sources for ingredients. Address: Summertown, Tennessee.

3695. Pinault, Pascal. 1993. Re: Work with tofu and tofu products in Martinique. Update on soyfoods in the Caribbean. Letters to William Shurtleff at Soyfoods Center, April 2 and 27. 4 p. and 5 p. Handwritten, with signature. Plus list of his products and prices, resumé, and photos of his home, equipment, and Morne-Vert.

• **Summary:** Pascal saw and ate tofu for the first time in May 1980 when he was living in India, while visiting some friends in Poona (Maharashtra). He bought 1 pound of tofu at a tofu shop but he is not sure if they were making the tofu in a back room of the shop or at some other place. "I suppose this tofu manufacturing plant in Poona was an offshoot of the Rajneesh Ashram, which was very active at that time and place." Pascal lived in Goa, south of Bombay, from 1976-1980; there he baked bread leavened with palm wine. He learned most of what he knows about soyfoods while living and working, mostly in health food stores or health farms (see attached resume), in the Catskill Mountains area of New York from 1981 to 1987. There he learned to make tofu for his personal use (not for sale) by adding lemon juice to hot soymilk then pressing it in a cloth. During two other trips to India in 1982-83 and 1986 he found and bought chunks of a dry soy protein product resembling TVP which must be cooked in water. He found this soy protein product very interesting for a country like India which has such a shortage of protein, however the price was high—about 10 rupees/kg compared with 2½ rupees/kg for wheat.

In Jan. 1988 he and his family moved to Martinique. "I was compelled to make tofu for myself and my family because there was no other vegetable protein available in Martinique, except for this chunky TVP. I was still using lemon juice instead of nigari and making 2 pounds of tofu at a time. Then in 1991, as I started to import Japanese food products from France (umeboshi, seaweeds, amasaké, etc.), I ordered a small booklet on making tofu using nigari. Plus I had an excellent book (*Les Aliments Fermentés Traditionnels*, by Claude Aubert [1985]) in which I found recipes and nutritional details on many foods like tofu, okara, sufu, tempeh, amasaké, and, in general, all the foods subjected to lactic acid fermentation. In Martinique he has been making an average of 12 to 20 pounds of tofu every week since Oct. 1991 when he moved with his family to mountainous Morne Vert. Occasionally he makes larger amounts for a health food store that sells it or when he caters for groups. His main work is to introduce and popular

tofu and soyfoods in Martinique. He would like to expand his tofu and vegetarian “traiteur” (catering) business; his main problem is lack of funds, so he plans to apply for financial aid.

The water he uses to make his tofu comes straight from a spring a mile up in a beautiful mahogany forest. He also makes sprouts—mostly alfalfa, mung bean, and clover, but sometimes wheat grass. He uses most of the tofu he makes to produce second generation products such as tofu mayonnaise, hot squash pies with miso-tofu topping, tofu & cocoa (or carob) sweet pie, tofu salad, spring rolls (*Nems*).

“I know of two vegetarian restaurants in town (Fort-de-France) that make their own tofu and serve it to customers, but no one in Martinique uses tofu as extensively as I do, thanks to my 7 years’ stay in the Catskill Mountains. In fact, it takes a long time to get people used to tofu in an island where Creole culinary habits are still well-established.”

One of the restaurants that makes tofu is Le Second Souffle, owned by Mr. Gerard Sainte-Rose (27 Rue Blenac, 97200 Fort-de-France, Martinique, FWI 0033. Phone (596) 63-44-11). He has owned this vegetarian restaurant for quite a while now and is mostly interested in reviving the consumption of local fruits and vegetables. “Gerard is the only person in Martinique that I actually saw growing and harvesting soy beans. That was 2 years ago. He had grown soybeans on a piece of agricultural land in Ducos, a town near Le Lamentin, which is not far from the capital city of Fort-de-France (Martinique). He got the soybean seeds from a friend in St. Lucia (a Caribbean island just south of Martinique). Mr. Sainte-Rose harvested only a few soybeans; they were small but healthy looking. He is an organic gardener who sells his products out of his restaurant. He presently has a 6 hectare farm where he grows organic vegetables for his restaurant. Two years ago we had an agreement to set up a tofu plant together in his restaurant. He promised me a job (that’s when I gave him my recipes), and he even started to acquire some material for making tofu. But he never followed through. That’s when I started making tofu by myself, even without the proper material setting. He even bought some of my tofu. I think he would probably be interested in growing more soy, if approached very tactfully, and if he sees financial interest without having to pay a counterpart. He is an interesting person with a lot of good ideas,” but he tends to be hard to work with as a partner.

On St. Lucia one can find the “Soy Place” is Castries, the main town in St. Lucia. They make tofu there, sell it, and cook it for the food-counter [take-out] part of the shop. People grow soy beans on St. Lucia and on Dominica, maybe with help from Canadians. They make tofu and cook it. One “Ital” rastafarian restaurant in Roseau, Dominica, serves tofu pâté and deep-fried, plus “accras” (fried okara dumplings). “In Dominica I heard of two other places where they make and serve tofu. Ital food, which has absolutely

nothing to do with Italian food, is the name that the Rastafarians give to the main dish of their mostly vegetarian diet (except for fish). In this main dish, chunky textured vegetable protein is sometimes used in place of fish. “In the Caribbean, including Martinique, Ital food is available in quite a few Rastafarian places, which they call their ‘ghetto.’ These are restaurants open day and night that include reggae ‘sound systems. The chunky TVP remains the main vegetable protein they use; they also use it in other dishes such as vegetarian cous-cous, etc. They are, in my experience, a bit hostile to tofu, seitan, or other such new foods, at least in Martinique; maybe when it comes from a white person they presume it is not vegetarian.” He has heard of (but has not seen or tasted) smoked tofu dried over a fire using green banana leaves.

Pascal is interested in vegetarianism and macrobiotics. He likes tempeh and would like to start now to make and introduce it to Martinique, where it is totally unknown.

Concerning seitan: “I first started to make seitan in Martinique under the same circumstances as tofu—lack of vegetable proteins other than beans. Not having ready-made gluten, I first made it by washing white-flour wheat dough. That was a very long and messy process but was well worth it. Then I found wheat gluten in the Tama catalogue—the company I mentioned that specializes in Japanese products. That’s when I started to sell seitan—though there is not much demand for it. I learned to make seitan while living in the Catskill mountains of New York from a macrobiotic British girl friend who also taught me how to make amazake.

Update of April 27, 1993. “Since my family sent me tempeh starter (thanks for giving them the address), I have started small-scale production.”

Update of July 17, 1993. “I first made amazaké, in Martinique, in 1992. Even though I gave samples to quite a few people, nobody has seemed to be interested in this product, or to realize the versatility of it! So, I keep ordering it from Tama, packed in glass jars, and make my own once in a while, using ‘Cold Mountain’ starter. I’ve been a bit disappointed by this non-reaction. Amasaké being one of my favorite sweeteners, which I value more than any breakfast or desert cereal. My youngest daughter ate it as a first ‘solid’ food when she was only 5 months old, along with bananas.”

“If you allow me a personal remark about my work in Martinique, I find it extremely ungratifying. The public here is highly suspicious of anything new and foreign. My little business doesn’t allow me to assume my financial obligations, and I sometimes consider going back to the U.S. But I still want to try harder, at least for a few months.”

Note: This is the earliest English-language document seen that uses the term “amasaké” to refer to amazake. Address: “Caplet,” 97226 Morne Vert, Martinique, French West Indies 0033. Phone: 596 55-56-57.

3696. Angier, Natalie. 1993. Chemists learn why vegetables are good for you: Certain plant ingredients can inhibit cancers. *New York Times*. April 13. p. C-1, C9. Science section.

• **Summary:** An illustration shows a bowl of miso soup. Researchers at Children's University Hospital in Heidelberg, Germany, have isolated a compound named genistein from the urine of those who eat a traditional Japanese diet rich in soy products (like miso soup) and vegetables (especially cruciferous vegetables—those from the cabbage family). Dr. Lothar Schweigerer, his student Theodore Fotsis, and their co-workers discovered that, in test tubes, genistein blocks angiogenesis, the growth of new blood vessels. Their work was published in the current issue of the April issue of the *Proceedings of the American Academy of Sciences*.

An illustration shows genistein blocking the growth of new capillaries that supply blood to some tumors. It also retards proliferation of some cancer cells.

People consuming a traditional Japanese diet were found to have 30 times as much genistein in their urine as typical Westerners. This could explain why Japanese men, who leave their country for several years to work in the USA or Europe, find their rate of prostate cancer rises sharply. Tiny prostate tumors, which have been kept from growing by, say, daily intake of miso soup, would be free to grow on a Western diet.

Dr. Judah Folkman of Harvard Medical School (Cambridge, Massachusetts), who has pioneered our understanding of how tumors grow, found this to be a “fascinating report.” He noted that this is the first time scientists have reported that certain dietary factors, found in the urine, could inhibit the proliferation of blood vessels. Blocking angiogenesis has the potential for providing an ideal type of therapy, since it would attack the tumor while leaving normal tissue intact. Only rarely do new blood vessels grow in the adult body—except to meet the sinister demands of malignant tumors. So any compound that blocked angiogenesis would have few side effects.

At present, only about 5% of the approximately \$1.8 billion annual budget of the National Cancer Institute is spent on prevention; most of rest is spent to find high-profile cures, such as gene therapy. Dr. James Duke, an economic botanist with USDA, thinks the country would be much better off if we spent \$1 billion a year on cancer prevention—including education on diet and cancer.

A large table titled “Potential cancer fighters in foods” (p. C9) includes flavonoids, plant sterols, vitamin E, genistein, (all found in soy products) and fiber. Fiber dilutes cancer-causing compounds in the colon and speeds them through the digestive system. It discourages the growth of harmful bacteria and promotes the growth of healthful ones. And it may foster production of a healthier form of estrogen.

3697. Pinault, Pascal. 1993. Re: Tama—France's best importer of Japanese natural foods. Letter to William Shurtleff at Soyfoods Center, April 27. 5 p.

• **Summary:** Tama is located at 883, rue de Bernau, 94500 Champigny / Marne, France. Phone: (1) 49-83-79-94. Fax: (1) 47-06-37-85. Tama traces its origins to the 1960s when it was part of a restaurant, Le Bol en Bois, the first vegetarian place in Paris. This restaurant (at 35, 40 Rue Pascal, 75013, Paris) now specializes in macrobiotic cooking. They added a health food store and a “new age” book shop.

“Tama distributes Mitoku products and excellent miso, soy sauces, amasaké, kuzu, Japanese seaweeds, mochi, etc. They have an excellent list of books concerning natural foods and cooking. They print their own brochures about tofu, seaweeds, and others. Tama has a subsidiary branch named Tofu-Daizou which makes the best tofu in France, as far as I know.” Address: “Caplet,” 97226 Morne Vert, Martinique, French West Indies 0033. Phone: 596 55-56-57.

3698. Herian, Anne M.; Taylor, S.L.; Bush, R.K. 1993. Allergenic reactivity of various soybean products as determined by RAST inhibition. *J. of Food Science* 58(2):385-88. March/April. [16 ref]

• **Summary:** RAST stands for “radioallergosorbent test.” Soybean allergy is a common childhood food allergy, although it is less common than allergies to cow's milk, eggs and peanuts. Food allergies are generally more common in children than in adults. In this study of atopic adult patients, using RAST inhibition as a measure, the allergenicity of a variety of soy products was compared to that of whole soybeans. Results indicated that, when expressed on a per protein basis, although extracts of tofu, miso, tempeh, and fermented soy sauce were allergenic, they were as little as one tenth as allergenic as extracts of whole soybeans. Address: 1. Dep. of Food and Research Inst., Dep. of Food Microbiology and Toxicology, Univ. of Wisconsin, Madison, Wisconsin 53706; 2. Dep. of Food Science and Technology and Food Processing Center, Univ. of Nebraska, Lincoln, Nebraska 68583-0919, address inquiries to second author.

3699. Leneman, Leah. 1993. 365 plus one vegan recipes: Delicious meals and ideas for every day of the year. Hammersmith, London, England: Thorsons—An imprint of HarperCollins Publishers. 144 p. April. Index. 24 cm.

• **Summary:** Chapter 1 of this book, titled “The Vegan Dairy,” gives recipes for homemade soya milk, mock cream (from soya milk), soya flour cheese, yogurt cheese (from soya yogurt). There are also recipes for cashew or almond milk, cashew cream, and cashew cottage cheese.

Chapter 11 (p. 85-100), titled “Tofu and other Soya Foods,” contains a long introduction plus the following

recipes: Home-made tofu. Tofu and onions. Sweet and sour tofu and vegetables. Sea-flavored crisp tofu slices. Mushroom stroganoff. Tofu kebabs. Tofu casserole. Warming winter stew (with tofu). Korean-style kebabs (with tofu and miso). Tofu and green pea bhajia. Tofu 'scrambled eggs.' Scrambled tofu and mushrooms. Tofu piperade. Spicy tofu scramble with red pepper and tomato. Tofu knishes. Tofu and pea curry. Tofu burgers. Swiss steak (with frozen tofu). Savoury tofu 'mince' (with frozen tofu). Crispy fried sea-flavoured frozen tofu. Tofu goulash. Smoked tofu stew. Smoked tofu, courgette and sweetcorn risotto. Smokey duvec (with smoked tofu). Pease pudding and smoked tofu bake. Smoked tofu pasties. Steamed savoury smoked tofu pudding. Smoked tofu charlotte. Lek and smoked tofu au gratin. Smoked tofu and mashed potato cakes. Tempeh croquettes with mushroom sauce. Tempeh hash with potatoes. Indonesian-style tempeh. Tempeh stroganoff. Japanese-style tempeh kabobs. Tempeh burgers. Tempeh chilli. Mock 'ham' (with dried bean milk sheets [yuba]). Mock 'chicken' (with yuba). Mock chicken cooked Indonesian style.

Chapter 13 is entirely about sea vegetables, and a number of the recipes contain tofu, tempeh, miso, or soya milk. A number of other recipes throughout the book also use soyfoods as an ingredient. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

3700. Miso [Miso]. 1993. Television broadcast. Channel 18. KTSF. California. April 25. Sun. 7:00-7:30 P.M. [Jap]
 • **Summary:** This program is part of the series "Tsuiseki" (The Chase). Address: Japan.

3701. Nagayama, Hisao; Tokue, Akihiko. 1993. The naked kitchen: Miso. *Look Japan (Tokyo)* 38(444):24-25. March.
 • **Summary:** A nice introduction to miso. Color photos show: (1) A bowl of miso soup. (2) Four different types of miso, each on a wooden spoon. (3) Miso Dengaku.

3702. **Product Name:** [Red Miso].
Foreign Name: Miso de Riz.
Manufacturer's Name: Projet Miso (owned by Fonds de Contrepartie Rwanda-Canada).
Manufacturer's Address: P.O. Box 2018, Kigali, Rwanda. Phone: (250) 76730.
Date of Introduction: 1993. April.
Wt/Vol., Packaging, Price: 300 gm.
How Stored: Shelf stable.
New Product–Documentation: Letter from, form filled out, and label sent by Johnny Kashama, based on an interview with François Munyankindi of Projet Miso, Rwanda. 1993. Dec. 21 (which see). This company began to ferment red miso in 1992 and to sell it in April 1993. This is the first company in Africa to make and sell miso.

Label. 1993. 8 by 3.25 inches. Green, gold, and brown on white. Illustration of the silhouette of a family sitting around a table. The label text in Kinyarwanda (the local language) states: "Miso is a food made from soybeans, rice, and salt. It contains vitamins and proteins. It aids digestion. It does not require the inconvenience of refrigeration. It can be added to other dishes, and used to sweeten them. Two coffee spoons of miso are sufficient for one person." In French there is a nutritional analysis plus the following: "Miso can be mixed in at the last minute with sauces, soups, or other dishes prepared without salt. 60 gm of miso should be used to season the soup for 4 people. No cholesterol." The expiration date is also given.

3703. Library of Congress, Subject Cataloging Div., Processing Services. 1993. Library of Congress subject headings. 16th edition. Washington, DC: Cataloging Distribution Service, Library of Congress. 4 volumes. Address: Washington, DC.

3704. Belleme, John. 1993. Problems with trying to make traditional seitan America. Plans to start making miso dressings (Interview). *SoyaScan Notes*. June 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John plans to shut down Santa Fe Organics soon and stop making seitan. He is losing too much money. He hopes to start making miso dressings. Address: P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

3705. Carper, Jean. 1993. Colon cancer frighten you? Avoid red meat. Miso power unmasked. *Advance (Staten Island, New York)*. June 16.

• **Summary:** In a new study, researchers at the Columbia University College of Physicians and Surgeons found that women who ate the most saturated fat and red meat were more likely to have polyps—small precancerous growths that can lead to colon cancer years later. This research reinforces warnings from a recent Harvard study which showed that "women who ate a daily main dish of red meat—about five ounces of beef, pork or lamb—upped their risk of colon cancer two and a half times compared with women who ate meat less than once a month."

For more than a decade, Japanese studies have shown that consumption of miso helps prevent cancer. "Researchers from Japan's Okayama University Medical School now believe they have unlocked miso's health-promoting secret. Miso is an anti-oxidant. In experiments, miso neutralized free radicals, rampaging molecules in the body that attack cells and help create a wide array of diseases, including cancer. Miso also helped protect fats in the body from becoming rancid and able to foment disease activity, including artery clogging.

"Miso derives its antioxidant powers from chemicals in soybeans and from substances created by fermentation,

researchers say.”

3706. Weiner, Michael. 1993. New developments with Amano and Yamashita (Interview). *SoyaScan Notes*. June 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Michael works as a consultant for Peter Joe of Sunrise Market Ltd. and with Amano Foods. He used to consult with Mandarin Enterprises in British Columbia. Now his main work is as a broker, representing various U.S. companies such as Vitasoy, Knudsen, Santa Cruz, etc. Amano still makes all of Westbrae’s organic miso. Amano is trying to construct a 60,000 square foot plant. They had a joint venture with Yamashita but it fell apart. Now Yamashita is constructing their own 60,000 square foot soy sauce plant in Oregon. The ground breaking will take place in a couple of weeks. Michael does not feel that this will be much of a threat to Amano, which plans to sell a lot of Amano products in supermarkets. The market is big and growing rapidly. Soyfoods now are given large amounts of shelf space (8-16 linear feet) in the produce section of all supermarkets in western Canada (British Columbia, Alberta, and Manitoba). A major reason for this is that Mandarin and Sunrise have an excellent relationship with the people in charge of the produce section in western Canadian supermarkets. Initially Michael helped to establish some of these relationships; these companies got a few facings for their tofu. Then Mandarin added their tofu burgers. Then Sunrise added Yves Wieners and soy cheese. The products sold, which is proof that exposure will work. Michael was involved in trying to make the same thing happen in Ontario with the Loblaws chain, and in Quebec, but they were never allowed to give the program a try—not even in 1-2 stores.

Safeway supermarkets are so sold on soyfoods that they have developed special open-front, vertical, refrigerated “Tofu Products” cases that are placed adjacent to the produce case, but have a lower temperature. They are quite large and contain everything from soy drinks to tofu, soy cheese to meatless hot dogs. Soyfoods are very widely available on Vancouver Island.

Sunrise and Michael jointly import Mori-Nu tofu into Canada from Japan. Also Sunrise distributes some juice products for which Michael is the broker. Mori-Nu does not sell well in supermarkets because it’s retail price is too high. Address: President, New Age Marketing, P.O. Box 39590, White Rock, BC, V4A 9P3, Canada. Phone: 604-538-0127.

3707. Messina, Mark. 1993. Welcome to *The Soy Connection*. *Soy Connection (The) (Chesterfield, Missouri–United Soybean Board)* 1(1):1-2. [7 ref]

• **Summary:** Discusses the growing interest in soyfoods (such as tofu, tempeh, soymilk, and miso) in America. They are becoming more mainstream. An estimated 2/3 of all tofu is sold in traditional supermarkets. Tofu consumption in America has doubled during the past 10 years.

3708. *Newsletter of the Soyfoods Association of America (Libertytown, Maryland)*. 1993. Thank you to the American Soybean Association. 4(2):2.

• **Summary:** “The American Soybean Association has awarded the SAA [Soyfoods Association of America] a grant for \$27,625.00 to develop and distribute educational materials on soyfoods and to produce periodic press releases. The grant will be used to produce a 4-color brochure on soyfoods and eight individual, camera-ready fact sheets on tofu, soymilk, tempeh, miso, texturized vegetable protein, soy flour, soy-based meat analogs, and soy oil. Materials will be made available to state soybean boards for distribution to consumers and volunteer soy promoters, to state level cooperative extension nutritionists for distribution to consumers through county home economics offices, and to health professionals for use in health and nutrition education programs. The first two fact sheets—on tofu and soymilk—will be available this month. All of the materials will be completed by Fall, 1993.”

3709. Xu, Zeng Quan. 1993. Tempeh in America and molded soybeans in China (Interview). *SoyaScan Notes*. July 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** He is a native of China but is now making tempeh in Michigan. Tempeh reminds him somewhat of a food named *mei dou* (“molded + beans”) which his mother and other housewives used to make in Jiangsu province near Shanghai. The warm weather there makes it easy to produce. His mother (and other housewives) then used the *mei dou* to make soybean jiang (similar to Japanese miso). The Korean word *meju*, also referring to mold-fermented soybeans, was probably derived from the Chinese *mei dou*.

He has never seen tempeh in China nor heard of ‘*Tou chiah ping*’ [soybean fried cake] observed, described, and photographed by William Morse in Beijing, China, in 1931. Address: Rosewood, Ann Arbor, Michigan.

3710. **Product Name:** The Organic Gourmet Miso Paste [Apple, Ginger, Honey, Chili Pepper].

Manufacturer’s Name: Scenario International Co. (Importer-Marketer). Made in Germany by Vitam Hefe Produkt GmbH.

Manufacturer’s Address: P.O. Box 24177, Los Angeles, CA 90024-0177; Walter-von-Selve Str. 2, 31789 Hameln, Germany. Phone: (40) 5151/95-400.

Date of Introduction: 1993. July.

Ingredients: Honey: Honey, Miso from Oats*, sea salt, ginger, garlic*. * = Certified organically grown.

Wt/Vol., Packaging, Price: 125 gm / 4.38 oz glass jar.

How Stored: Shelf stable.

New Product–Documentation: Leaflets and letter sent by Elke Heitmeyer of Scenario International (P.O. Box 24177,

Los Angeles, California 90024-0177. Phone: 310-470-9166). These products are made in Germany by Vitam Hefe Produkt GmbH. The color leaflet shows the products packed in paperboard boxes, and states: "Organically grown oats, not soy, are fermented in a 3-4 months long process to form our delicious miso sauces... A delectable sandwich spread, flavor for rice, soups, tofu, dips, and sauces.

Leaflet titled "Story" by Scenario International. "Elke Heitmeyer, the founder of Scenario International, is originally from the Eastern parts of Germany." She is a vegetarian. "The Organic Gourmet product line has been sold in German specialty health food stores, 'Reformhaus,' for years. The manufacturer is a member of the Neufarm Assoc. of Natural Food Producers."

Leaflet. "New. Organic Flavored Miso Pastes." Gives a recipe for Chili Miso Tortillas.

Letter and products (with Labels) sent in response to enquiry from William Shurtleff of Soyfoods Center. 1994. Jan. 11. The miso pastes were first sold in Germany under the brand name Vitam in August 1992. They were first sold in the U.S. under The Organic Gourmet brand in July 1993.

3711. Centa, Roland A. di. 1993. Re: Introducing tempeh and tofu to Italy. Letter to William Shurtleff at Soyfoods Center, Aug. 9—in reply to inquiry. 4 p. Typed, with signature. Followed by a letter of Sept. 10 answering questions.

• **Summary:** Roland was one of the first people to introduce soyfoods to Italy. He was very interested in macrobiotics and was a close friend of Michio Kushi. "My interest in food was to heal people with food and I had a lot of success using a holistic approach to help people with major diseases. For all these cures I used a lot of miso, tempeh, and tofu. Good miso was available. However tempeh and tofu had to be locally produced. I cured people from 1980 until about 1985.

"As I am a businessman I was always business minded in order to produce, make a profit, and be able to realize my ideas—which always cost. I am educated in international law and advise corporations who want to expand abroad.

"Tempeh: There was only tempeh available for Paris, made by a lady there named Anita Dupuy, who delivered and sold it to Le Bol en Bois (a macrobiotic restaurant in Paris) and to some consulates and embassies (such as the Philippines). As I was busy elsewhere I sent Giovanna Mazzieri (of Milan, Italy) to Paris [for 1 week in Feb. 1983] to study the process. She was a very busy lady and a fan of macrobiotics after I healed her husband of a very difficult disease. She was very smart and she produced in tempeh in Milan in about 1980 [actually mid-1983]. It was perfect and of very good quality. It was sold in a few health food stores. (Letter from Roland of Sept. 10 says Giovanna's tempeh was never sold commercially in stores; she produced tempeh only non-commercially from Feb. 1983 until today.

Roland taught her to make tofu in June 1982; she started to make and sell it shortly thereafter).

"Actually it never took off commercially and eventually was used only for selected people, me and my patients. At that time I was very strict in eating macrobiotic. I was very sensitive to the quality of tempeh: I didn't like the acid taste. On the island of Bali I once ate some tempeh which was very acid. Therefore I used to deep freeze it in order to have it ready when we wanted tempeh with perfectly good taste. Today it is no longer produced, or only in small quantities, for the use of the family of Giovanna and some friends in Italy. As I am no longer living in Italy and I stopped curing people, unfortunately I don't use tempeh any more myself. I was interested to find out whether it worked in curing people. It did! However in order to make a profession and profit-making enterprise, I preferred to do other jobs.

"Tofu: Tofu was produced by myself. I am sure I was the only one who produced it on the basis of your teaching the first time in Italy in 1978. After seeing an ad in the *East West Journal*, I ordered your *Book of Tofu* by mail.

"Tofu already existed in Italy in Chinese restaurants in all the major cities. They called it Tau-Fu. After studying your book, I went to many kitchens in order to observe how it was produced, and with the cooks I ate the okara which was never offered to the clients of the restaurants but was seasoned very hot for themselves. The main restaurant I studied at was "La Muraglia," which means "The Wall" and which still exists.

"I then bought the Tofu Kit [made by Larry Needleman of The Learning Tree] which was advertised in the *East West Journal*. With this kit I started to make my first tofu. It was at once of very good quality.

"I started to make the equipment following the instructions in your book and twice a week produced 10 kg of tofu, which was used by my family, and sold in health food stores and later to my patients. I sold the tofu also in bakery shops where I offered the clients free samples to taste before they eventually bought it. I had a few sales. I produced the tofu in the kitchen of my apartment on Via Maffei in Milan. I got up very early and at 8 A.M. the kitchen was clean—you couldn't see anything left of the production. My wife [who was Vietnamese] didn't want to have a mess in the kitchen when she got up.

"Before I going to work as a consultant in the morning, I delivered the tofu to various shops. I didn't sell as a company because the quantity was too small to justify a commercial set-up yet. After about a year, when the whole business was working well, I transferred everything to a friend of mine who was looking for a job. He did it also in his apartment, but had problems with the neighbors who saw the kettles steaming on his balcony and they wondered what he did in his place. As nobody knew what tofu was, he said he was making some kind of cheese. The neighbors

thought he might even have cows in his flat, and they managed to kick him out of his rented apartment after he had been making tofu there for about one year.

“When we heard that a company from Rimini [located 200 miles southeast of Milan and run by Gilberto Bianchini] had also started to produce tofu, we stopped production I didn’t get the feedback in profit from this business; I preferred to use my time in other operations and buy the tofu made by Gilberto Bianchini at health food stores in Milan. I am sure I would have had success in Italy if I had continued. But I didn’t have the support of my family, even though my wife was Vietnamese, and therefore I oriented myself to other activities. Someone who makes 10 kg of tofu in his kitchen before going to work must be a bit crazy—right?”

“Nowadays in France I eat tofu about 2-3 times a week, as does my companion, Barbara, and our 4-year-old Carolina.

“Tofu-Kit: In about 1979 I produced about 100 tofu kits, which I sold for 30,000 lire to friends and other people who were interested in making their own tofu. As it was actually a copy of the American tofu-kit which I bought in the U.S., I wanted to see whether there was a real interest in this product before marketing it in Italy. Since it didn’t sell very well, I didn’t go ahead with it. Eventually I planned to buy the copyright from the tofu-kit people in the U.S. In 1979 I also published booklets in Italian and French titled “Tau-Fu Kit” and Tofu Kit” respectively. One was sold with each tofu kit; they were not sold separately.

“You have been for me a kind of guru, without knowing each other, because I have a lot of admiration for your approach. You are probably successful because you did only this: Writing about things related to soya.” Address: 3, Boulevard d’Aguillon, 06600 Antibes, France. Phone: (33) 07-80-70.

3712. Obis, Mariclaire Barrett. 1993. Take another look at soyfoods. *Vegetarian Times*. Aug. p. 54-56, 58, 60, 62, 64, 66. [8 ref]

• **Summary:** A good introduction to soyfoods including whole dry soybeans, fresh green soybeans, soy flour and grits, soy sauce, soy oil, textured vegetable protein, soymilk, okara, soy yogurt and cheese, tofu, tempeh, and miso. Address: Contributing editor, *Vegetarian Times*.

3713. Hachmeister, Kathleen A.; Fung, Daniel Yee-Chak. 1993. Tempeh: A mold-modified indigenous fermented food made from soybeans and/or cereal grains. *Critical Reviews in Microbiology* 19(3):137-88. [185 ref]

• **Summary:** An excellent review of the literature. Contents: Introduction. Mold-modified indigenous fermented foods: Miso, shoyu (soy sauce), hamanatto, sufu, fermented rice (sierra rice), tapé (lao-chao), ang-kak, ogi, tempeh, ontjom (oncom, lontjom), bongkrekk (tempeh bongkrekk), kenima.

Processing developments in legume tempeh manufacture: Traditional tempeh fermentation, industrial production of tempeh, methods of preparation (cleaning, dehulling, hydration and acid fermentation, partial cooking, draining, cooling, and surface drying, inoculation, fermentation containers, incubation, harvesting, storage, and preservation, uses and preparation of tempeh). Organoleptic properties of tempeh. Microbiological aspects of legume tempeh: Microbial ecology, traditional and modern soaking methods, effect of soaking, acidification, and initial bean pH, effect of boiling prior to inoculation, effect of *Klebsiella* and *Enterobacter*, effect of lactic acid bacteria and yeasts, microbiological safety and quality, heating prior to consumption. Nutritional quality of legume tempeh. Chemical and biochemical changes in legume tempeh: Changes in protein and amino acids, changes in carbohydrates, changes in lipids, antioxidant potential, changes in minerals, changes in vitamins. Antinutritional factors associated with legumes: Flatulence-producing factors, protease inhibitors, tannins, phytic acid, hemagglutinins, other antinutritional factors. Cereal grain tempeh—practical applications: Background information, materials and methods, results and discussion, conclusions and future developments. Summary. References. Address: Dep. of Animal Sciences and Industry, Kansas State Univ., Manhattan, KS 66506.

3714. Shurtleff, William; Aoyagi, Akiko. comps. 1993. Bibliography of koji—grains and/or soybeans cultured with *Aspergillus oryzae*: 535 references from 700 B.C. to 1993, extensively annotated. Lafayette, California: Soyfoods Center. 151 p. Subject/geographical index. Author/company index. Language index. Printed Sept. 5. 28 cm. [535 ref]

• **Summary:** This is the most comprehensive bibliography ever published about koji. It has been compiled one record at a time over a period of 18 years, in an attempt to document the history of this subject. It is also the single most current and useful source of information on this subject available today, since 59% of all records contain a summary/abstract averaging 185 words in length.

This is one of more than 40 bibliographies on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 25 different document types, both published and unpublished; every known publication on the subject in every language—including 242 in Japanese, 226 in English (plus 75 with an English summary), 33 in German, 11 in Chinese, etc.; 16 original Soyfoods Center interviews and overviews never before published. Thus, it is a powerful tool for understanding the development of koji and related products from their earliest beginnings to the present.

The bibliographic records in this book include 478 published documents and 28 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation of the title, month and issue of publication, and the first author's first name (if given).

The book also includes details on 33 commercial koji products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as references to and summaries of advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject and geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

3715. Seeger, Royce. 1993. Recollections of work with Eden Foods (Interview). *SoyaScan Notes*. Oct. 31. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** At age 18 Royce was introduced to macrobiotics by Jimmy Silver. He was never involved with the food buying co-op before Eden Foods started. He started working for Eden Foods in about the fall of 1970 at the store on State Street. He was married with a child, he needed a job, and he was interested in macrobiotics, so the job was a natural. At the time he started work, Bill Bolduc, Mark Retzlöff, and Tim Redmond were working at that store. After he had worked there about a year, Michael Potter arrived. Initially he ran the cash register, stocked the shelves, and ran the 8-inch stone flour mill grinding wheat, corn, rye, rice, etc. into flour. Shortly after he started work, he also began to mill soy flour. Tom Vreeland grew the soybeans organically. Royce toasted the soybeans lightly, about half way, so that the flour could be milled more easily and was still yellow. The roasting got rid of the heavy raw taste, but some raw soy flour taste still remained. Initially the soy flour was sold in paper bags, but the bags became very oily, so they switched to packing it in 3 sizes of cello bags which we heat sealed. The bags were considered biodegradable. Eden couldn't buy too large a supply since they became brittle after a while. A printed label was affixed by hand to each cello bag. The flour was also sold in big 25 lb paper flour bags, which were stamped with a rubber stamp to indicate the contents.

Eden also made Kokoh, a macrobiotic baby cereal, which contained roasted soy flour and was also packed in the small cello bags. All the ingredients were roasted together and then ground; soy was one of the ingredients. The soy was roasted longer than it was for the flour.

Eden was also importing miso in kegs from Japan. Employees would pack the miso into 1- and 2-lb bags. Eden still imports its miso in bulk kegs.

In those days the store wasn't making much money; it had just come from being a co-op, so often the only pay employees got was to have their bills paid—such as rent, so they didn't get evicted. They didn't really get a pay check. In about 1973 Royce quit work at Eden to do some construction work for a friend, and then moved to Arizona to be with his wife's parents. After about 10 months he returned to Ann Arbor and went back to work for Eden Foods. This time he stayed until 1978, running the mill and doing packaging. Then he left for a second time; he needed to make more money.

In 1982 Royce returned to work for Eden for a third time. He started working in production at a small bottling line where Eden bottled soy sauces (imported in 55 gallon drums from Japan), vegetable oils, and vinegar. Eden still bottles its soy sauce this way. One person runs the filler, which fills 6 bottles at a time; he slides in 6 bottles, pulls down the lever which fills them, then he puts them on a conveyerized line. The next person on the line puts on caps. Finally, at a labeling machine, one person labels one bottle at a time. Then he went back into running the mill, grinding flours. Royce has been working at Eden, more or less, since 1982. However in 1987 he developed testicular cancer, which had spread throughout his lymph system. His weight dropped to 155 lb and parts of his spine had to be removed. The cancer is now in remission and he feels like he is getting stronger. Royce now serves as Michael Potter's driver, since Michael is not allowed to drive at all by himself. Royce likes working at Eden Foods, even though he is not an official employee, since he is receiving disability payments. Address: 133 S. Clinton, Manchester, Michigan 48158. Phone: 313-428-0973.

3716. Brown, Alan. 1993. Kinmata: Fine dining at a Japanese inn. *Bon Appetit* 38(10):118-22. Oct.

• **Summary:** Kinmata Ryokan is a nearly 200-year-old traditional Japanese inn located in Kyoto at 407 Shijo-agaru, Goko-machi, Nakagyo-ku. The owner, Haruji Ukai, who is also the chef, is the seventh generation of his family to run the inn; he greets each new guest in person when they arrive. The food at Kinmata, which is "as delicious as it is beautiful," features *kaiseki* cuisine. There are only seven rooms in two-story Kinmata and no private bathrooms. Contains two miso recipes: Broiled bean curd and eggplant with miso (Kinmata's version of dengaku). White miso soup

with shrimp. Address: Free-lance travel writer based in Tokyo.

3717. **Product Name:** Savory Spreadable Miso (Nerimiso or Sweet Simmered Miso) [Shiitake Mushroom, Peanut Raisin, Red Chili, Gingerroot, Garlic].

Manufacturer's Name: Leo Risin' Foods.

Manufacturer's Address: 1112 Delaware St., Lawrence, KS 66044. Phone: 913-832-1521.

Date of Introduction: 1993. October.

Ingredients: Garlic: Soybeans, rice, water, sake, honey, garlic, salt, and *Aspergillus oryzae*.

Wt/Vol., Packaging, Price: 4 oz glass jar with metal screw-on lid with rubber seal. Retail for \$2.89 per jar (3/94).

How Stored: Shelf stable.

New Product–Documentation: Talk with Clayton McHenry, founder and owner of Leo Risin' Foods. 1994. Feb. 21. He started making Nerimiso in Oct. 1993.

Letter and Labels sent by Clayton McHenry. 1994. Feb. 22. In April 1993 Clayton moved his kitchen from his former home to his new home at 1112 Delaware St., Lawrence, Kansas 66044. He continued to produce a variety of tempehs, plus natto and packaged deli foods (plus Finger Lickin' Miso every now and then). In April 1993 he started making Homemade Saké Kits. Then in October 1993 he started producing *nerimiso*, labeled as Savory Spreadable Miso, was made and sold in various flavors: Shiitake Mushroom, Peanut Raisin, Gingerroot, Garlic, and Red Chili. "The last 3 flavors have proved to be the more popular ones. Now I am attempting to market these nerimisos more widely with the goal of obtaining an account with a natural foods warehouse. My nerimisos are packaged in 4 oz. glass jars."

Label. 1994. The text on the back label reads: "This Savory Spreadable Miso is similar to 'nerimiso,' a Japanese miso product which is among the most popular forms of miso consumed in Japan. Use as a convenient topping for rice, tofu, curries, and fresh or cooked vegetables. Also use as a spread for toast or sandwiches." An illustration shows Farmer John picking his teeth with a long straw, and lots of animated little soybeans running and dancing around the edge of the label.

3718. Shi, Yanguo; Ren, Li. 1993. *Dadou zhipin gongyi-xue* [The technical arts of soybean products]. Beijing, China: Zhongguo Qinggong Yechu Banshe [Chinese Ministry of Light Industry]. xii + 484 p. Illust. No index. 18 cm. [34 ref. Chi]

• **Summary:** Wade-Giles reference: *Ta-tou chih p'in kung-i hsüeh*, by Shi, Yen Kuo; Jên, Li. Contents: Preface. 1. Introduction to soyfoods: Terminology and classification, origin and development, future prospects. 2. Soybeans: Production, seed structure and components. 3. Chemical

composition of soybeans: Soybean lipids, carbohydrates, minor components. 4. Soy proteins: Overview, molecular weight and classification, water solubility, denaturation, functionality, soy enzymes and antinutritional factors. 5. Soy oil extraction: Oil extraction from soybeans, solvent extraction principles and process outline, pre-extraction preparation, extraction process, other extraction technology, supercritical CO₂ extraction. 6. Chinese traditional soyfoods: Principles and ingredients, soybean soaking and cleaning, soymilk preparation for tofu processing, coagulation and molding, lactone tofu, yuba, meat alternatives. 7. Fermented tofu: Varieties (total 14 discussed), ingredients, microorganisms, mucor fermented tofu & process, top 8 products. 8. Soy nuggets and fermented soy paste (miso): Soy nuggets, fermented soy paste. 9. Soymilk (soy beverages): Production principle and outline, beany flavors and reduction, several commercial production lines, fermented soymilk, dry soymilk products. 10. Products from defatted meal: Defatted soy flour, soy protein concentrates (*dadou fenli danbai*), soy protein isolates (*dadou nongsuo danbai*), structured soy protein products, soy emulsifiers, applications of soy protein products. 11. Soy by-products utilization: Okara and its uses, soy whey and its uses. 12. Biological and chemical assay methodology: Assay for protein solubility, soy protein isolation, soy protein molecular weight measurement, gas chromatographic analysis of soy oligosaccharides, HPLC analysis of soy oligosaccharides, phytic acid assay, assay for hexanal Å the major beany flavor component, trypsin inhibitor assay, lectin assay, urease assay, lipoxygenase assay, soybean cell biology: thin sample preparation technology, soybean cell biology: ultra thin sample preparation technology.

Note: Talk with KeShun Liu. 2001. July 9. Green vegetable soybeans (*maodou*) are not mentioned in this book. Address: China.

3719. Soyfoods Association of America; American Soybean Association. 1993. Good news about soyfoods. San Francisco, California. 16 p. 19 cm.

• **Summary:** This attractive booklet, containing 6 color photos, introduces soyfoods. Produced jointly by the Soyfoods Association of America and the American Soybean Association, it represents a first in cooperation between these two organizations. Contents: Soyfoods—A healthy choice: Soyfoods lower blood cholesterol, and fight cancer. Adding soyfoods to your menu: It's easy! The soyfoods family: Soybeans and edamame or fresh green soybeans, soy flour, texturized soy protein (TSP), soymilk, tofu, tempeh, miso, meat analogs, soy oil (a brief description is given of each). Soy recipes: Miso soup. Tofu chocolate cream pie. Creamsicle spritzer (with soymilk). Banana pancakes (with soy flour, soymilk, and soy oil). Sloppy joes with texturized soy protein. Barbecued tempeh.

Nutritional value: Gives the composition of tofu (soft, silken, firm), meat analogs, soy oil, miso, texturized soy protein, tempeh, soymilk (regular or lite), and soy flour (full fat or defatted). Address: 1. One Sutter St., Suite 300, San Francisco, California 94104; 2. American Soybean Assoc., 540 Maryville Centre Drive, Suite 390, St. Louis, Missouri 63141-9200. Phone: 1. (415) 393-9697; 2. 1-800-Talk-Soy.

3720. *SoyaScan Notes*. 1993. Chronology of the American Soybean Association's growing interest in promoting soyfoods in America. Nov. 5. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1992 Jan.—Keith Smith of ASA calls Mark Messina PhD, at the National Cancer Institute and asks what Mark knows about possible cancer-preventing substances in soybeans. ASA was getting a lot of enquiries on the subject, which was Mark's specialty at NCI.

1992 Dec.—ASA decides to allocate a large portion of their 1993 research funds for health-related research. The 1993 budget contains \$1,200,000 in funding for three 2-year projects which each received \$400,000 over the 2 years. One project by Stephen Barnes involves soy and prostate and breast cancer, one by Maurice Bennink of Michigan State involves soybeans and colon cancer, and a third by William Wong involves cholesterol metabolism in soy.

1993 March—ASA allocates \$27,625 for the Soyfoods Association of America (mainly Ginny and Mark Messina) to develop and distribute educational materials on soyfoods and to produce periodic press releases. The grant will be used to produce a 4-color brochure on soyfoods and eight individual fact sheets on tofu, soymilk, tempeh, miso, texturized vegetable protein, soy flour, soy-based meat analogs, and soy oil. These materials will be made available to state soybean boards.

1993 June—*The Soy Connection*, a quarterly newsletter on the nutritional benefits of soyfoods, starts to be mailed to 70,000 registered dietitians across the U.S. This high-quality publication, edited by Mark Messina, contains articles by experts in their fields, plus some good recipes.

1993 Oct.—Dr. Mark Messina is officially hired by ASA as a consultant. He gave about 12 public speeches on soy, diet, and chronic disease prevention in 1993, and has 15 more planned for 1994. Messina also coordinates nutrition research for a group named the North Central Soybean Research Program. As part of this, Steve Sonka of the University of Illinois is conducting a \$43,000 economic impact analysis to determine the market potential for soyfoods and its effect on soybean consumption. The report is expected out in Dec. 1993. USB only has 3 paid employees and 60-65 volunteers, so they hire the ASA to do projects using money from USB and everything that ASA does is approved by David Thomas.

1993 Oct.—USB has a booth (probably its first) at the annual 3-day conference of the American Dietetic Assoc.

attended by roughly 10,000 people. ASA and Dr. Messina were there. Evans Food Group, ASA's big food-related public relations firm in Seattle, Washington, was also there. The booth was geared mostly toward soy oil, but most of the interest from dietitians was in soyfoods. Fact Sheets on soyfoods and a brochure prepared by the Soyfoods Association and Evans Group were distributed. Soynuts were served but they ran out in the first 2 hours. Messina encouraged USB to have enough good soy-based snacks to last for 3 days for next year's show.

1993 Nov.—*Good News About Soyfoods*, an attractive 16-page booklet, prepared jointly by the Soyfoods Association of America (Ginny Messina) and USB, featuring information about and recipes for soyfoods is mailed to about 3,000 to 5,000 key media contacts.

1994 Feb.—The First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease is held in Mesa, Arizona, organized by Dr. Mark Messina and sponsored by the United Soybean Board as well as soybean growers from Nebraska and Indiana.

1995—The United Soybean Board (USB) begins to sponsor dietitian seminars on the health benefits of soy in 26 cities across the USA. The budget for each seminar is \$8,000. Manufacturers can exhibit products at seminars for a fee of \$75 per table.

1996 Jan.—The Indiana Soybean Development Board introduces *Soyfoods USA*, the world's first e-mail newsletter on soyfoods. It is sent monthly to e-mail addresses free of charge. By Feb. 1997 there are 1,200 subscribers.

1996—USB creates and develops the theme "Soybeans—Designed for Life." When someone phones one of the state soybean associations or boards, music with these words plays in the background while he or she is on hold.

1996 Sept.—The Second International Symposium on the Role of Soy in Preventing and Treating Chronic Disease is held in Brussels, Belgium, again organized by Dr. Mark Messina. Sponsors contributing more than \$15,000 include: American Soybean Association, Nebraska Soybean Board, United Soybean Board, Ohio Soybean Board, Indiana Soybean Development Council. Other sponsors: Illinois Soybean Association and Illinois Soybean Program Operating Board, Soyfoods Association of America, Minnesota Soybean Research and Promotion Council, Iowa Soybean Promotion Board, and Michigan Soybean Promotion Committee.

1997 Jan.—USB announces 11 more Soy Connection Dietitian Seminars that will be held in major cities across America during 1997, from April 4 to Sept. 12.

1997 Feb. 25—The Illinois Soybean Assoc. (ISA) mails a form letter to all known soyfoods manufacturers in the USA, stating that it has recently teamed up with a number of industry leaders and researchers to examine the feasibility of a cholesterol health claim for soy protein products. The letter asks that each manufacturer send ISA

(by March 5) nutritional labels for each soyfood product that it makes or distributes.

3721. Coward, Lori; Barnes, N.C.; Setchell, K.D.R.; Barnes, S. 1993. Genistein, daidzein and their β -glycoside conjugates: Antitumor isoflavones in soybean foods from American and Asian diets. *J. of Agricultural and Food Chemistry* 41(11):1961-67. Nov. [31 ref]

• **Summary:** This is a very important article. Isoflavones were first extracted with alcohol (80% aqueous methanol) and then the fat was removed from the extract with hexane solvent. Details of the isolation process are given. The results showed that most Asian and American soy products, with the exception of soy sauce, alcohol-extracted soy protein concentrate, and soy protein isolate, have total isoflavone concentrations similar to those in whole soybeans. Asian fermented soyfoods contain mainly isoflavone aglucones, whereas in nonfermented soyfoods of both Asian and American origin isoflavones are present mainly as β -glycoside conjugates. The estimated daily intake of these isoflavones by Asians is similar on a body weight basis to the isoflavones in soy-containing diets which inhibit mammary tumorigenesis in animal models of breast cancer. Therefore, it is possible that dietary isoflavones are an important factor accounting for the lower incidence and mortality from breast cancer in Asian women.

“The concept of reducing cancer risk by chemoprevention has become an important aspect of current cancer research. It has been suggested that two so-called phytoestrogens, lignans and isoflavones, may play a role in the prevention of estrogen-dependent breast cancer and colon cancer.

Three tables show the isoflavone concentrations in various types of soyfoods. For each food, the content of the following is given: Conjugated genistin, conjugated daidzin, genistein aglucone, daidzein aglucone, total isoflavones, D/G ratio, percentage of genistein aglucones, and percentage of daidzein aglucones. After each food listed below we will show the total concentration “as is” and then (if given) on a dry weight basis.

Table 1 shows isoflavone concentrations (in mg per gram) in basic nonfermented Asian soyfoods: Soymilk (0.252 / 3.256), Tree of Life tofu (0.417 / 2.031), Mori-Nu tofu (0.494 / 3.827), soy flour (1.338), soy powder (1.748), and soy nuts (2.363).

Table 2 shows isoflavone concentrations (in mg per gram) in fermented Asian soyfoods: Tempeh (0.430 / 1.130), miso (0.920 / 1.379), rice miso (0.404 / 0.721), barley miso (0.721 / 1.195), Shiromiso soup mix (0.708), Akamiso soup mix (0.882).

Table 3 shows isoflavone concentrations (in mg per gram) in other soyfoods: Soy sauce (0.023 / 0.090), soy cheese (0.050 / 0.105), Tofutti soy ice cream (0.032 / 0.092), Ice Bean soy ice cream (0.117 / 0.360).

Although flavonoids are found in many plants, vegetables, and flowers, isoflavones such as genistein and daidzein are found in just a few botanical families. This is because of the limited distribution of the enzyme chalcone isomerase largely to tropical legumes. Partly for this reason, isoflavones are a very minor part of American or British diets. Address: Depts. of Pharmacology and Biochemistry and Comprehensive Cancer Center, Univ. of Alabama at Birmingham, Birmingham, Alabama 35294, Mass Spectrometry Lab., Children’s Hospital Medical Center, Cincinnati, Ohio 45229.

3722. Wheatley, Georgia. 1993. An American vegetarian resource directory: Some signposts on the journey towards a healthier, more ethically and environmentally balanced lifestyle. Ferguson, Missouri: WheatSong Press. 94 p. Nov. Index. 22 cm.

• **Summary:** Contents: 1. Audio/Visual resources: Audio, video, tape producers/distributors. 2. Cookbooks (248 citations). 3. Electronic resources: Internet sources (America Online, Compuserve, Public Dialup Internet Access List compiled by Peter Kaminski), vegetarian sources accessible from the Internet (rec.food.veg, fat-free, veggie {send email to the Internet address listserv@gibbs.oit.unc.edu}, granola, world guide to vegetarianism, AR-Talk, AR-News), other electronic vegetarian sources (Genie, Prodigy). 4. Family and children’s resources: Audio, activities, books, cookbooks, periodicals, video. 5. Mail order products. 6. Organizations and groups: National, local organizations listed alphabetically by state and city, starting your own group. 7. Periodicals, journals, and newsletters. 8. Publishers/distributors. 9. Radio/television resources: Radio, television. 10. Resource books. 11. Travel resources.

Note 1. This is the earliest document seen (July 2007) that mentions the Internet in connection with soyfoods or vegetarianism. Note 2. A new edition was published in Aug. 1996. Address: P.O. Box 35009, Ferguson, Missouri 63135. Phone: (314) 524-0894.

3723. Kashama, Johnny. 1993. Re: Projet Miso in Kigali, Rwanda. Questions answered on Soyfoods Center questionnaire and returned to SC on 21 December 1993. 3 p. Handwritten, with signature. [Eng]

• **Summary:** The following is based on an interview with Mr. François Munyankindi of Projet Miso (B.P. 2018, Kigali, Rwanda). Projet Miso (Project Miso), was founded on 1 Oct. 1990 to manufacture miso and to contribute to the improvement of the diet of the people of Rwanda. It was founded by Mrs. Suzanne Dionne of the *Fonds de Contrepartie Rwanda-Canada*, which is the owner. It is a cooperative venture between Canada and the government of Rwanda. The company began to ferment red miso in 1992 and to sell it in April 1993; it now makes red miso (340 kg/

week), tamari (14 liters/week), and shoyu (it is still in the fermentation and has not yet started to be sold). Miso is the best-selling product of the three, with sales of 102,000 Rwandese francs per week (1 U.S. dollar = 145 francs). They learned the process by studying *The Book of Miso* and *Miso Production* by Shurtleff and Aoyagi. The company employs 11 people: 1 manager, 6 production workers, and 4 office workers and others. The company has 290 square meters of production space and 27 square meters of office space.

Mr. Munyankindi thinks [and he is correct!] that this is the first company in Africa to make and sell miso, tamari, or shoyu. The miso is accepted by the local people. "As you know, miso is a medicinal food and it is recommended by many physicians." Address: c/o Tofu-Rwanda, P.O. Box 1906, Kigali, Rwanda. Phone: (250) 76730.

3724. Viana Naturkost GmbH. 1993. Sound im Glas [Sound in Glass]. Euskirchen-Kuchenheim, Germany. 6 panels. 21 cm. Company catalog. [Ger]

• **Summary:** This stylish, 6-panel company catalog is black, red, and white on pea green. The company sells Brown-Rice Miso (*Genmai* Miso) and Barley Miso (*Mugi* Miso). Spreads for breads include Chickpea Spread (*Kichererbsen Pastete*, with shoyu and soybeans), Vegetable Garden (*Gemuesegarten*, with organic tofu), Inka (with organic tofu), Toto (with organic tofu), and Miso Squash Paste.

Note: During 1993-94 Viana purchased modern tofu production equipment from Takai in Japan. Address: Willi Graf Str. 88, 33881 Euskirchen-Kuchenheim, Germany. Phone: 02251/56076.

3725. **Product Name:** [Viana Barley Miso].

Foreign Name: Viana Mugi Miso: Soja Gersten Wuerzpaste.

Manufacturer's Name: Viana Naturkost GmbH.

Manufacturer's Address: Willi Graf Strasse 88, 53881 Euskirchen-Kuchenheim, Germany. Phone: 02251/56076. Fax: 02251/75638.

Date of Introduction: 1993.

Ingredients: Soybeans*, barley*, water, sea salt. * = Organically grown.

Wt/Vol., Packaging, Price: 200 gm.

How Stored: Refrigerated.

New Product-Documentation: Label sent by Bernd Drosihn, founder and owner of Viana. 1994. Feb. 14. 8 by 2 inches. Red and white on dark green. "Ideal as a basis for soups, dressings, creams and pastes. A savory spread for bread. Light. Free of cholesterol and of yeast."

3726. **Product Name:** [Viana Brown Rice Miso].

Foreign Name: Viana Genmai Miso: Soja Reis Wuerzpaste.

Manufacturer's Name: Viana Naturkost GmbH.

Manufacturer's Address: Willi Graf Strasse 88, 53881 Euskirchen-Kuchenheim, Germany. Phone: 02251/56076. Fax: 02251/75638.

Date of Introduction: 1993.

Ingredients: Soybeans*, rice*, water, sea salt. * = Organically grown.

Wt/Vol., Packaging, Price: 200 gm.

How Stored: Refrigerated.

New Product-Documentation: Label sent by Bernd Drosihn, founder and owner of Viana. 1994. Feb. 14. 8 by 2 inches. Red and white on yellowish gold. "Ideal as a basis for soups, dressings, creams and pastes. A savory spread for bread. Light. Free of cholesterol and of yeast."

3727. **Product Name:** [Viana Spreads for Bread (Chickpea Spread, Vegetable Garden, Inka, Toto, Miso Squash Spread)].

Foreign Name: Viana Brotaufstriche (Kichererbsen Pastete, Gemuesegarten, Inka, Toto, Miso Kuerbis Pastete).

Manufacturer's Name: Viana Naturkost GmbH.

Manufacturer's Address: Willi Graf Strasse 88, 53881 Euskirchen-Kuchenheim, Germany. Phone: 02251/56076. Fax: 02251/75638.

Date of Introduction: 1993.

New Product-Documentation: Brochure titled "Sound im Glas," sent by Bernd Drosihn, founder and owner of Viana. 1994. Feb. 14. The ingredients for each spread are as follows (* = organically grown): Chickpea Spread: Chickpeas*, sesame seeds*, peanuts*, apple cider vinegar*, shoyu* (water, wheat, soybeans, sea salt), garlic powder*, herbs*, spices*, sea salt; Vegetable Garden: Tofu*, carrots*, leeks*, vegetable oil*, celery*, sea vegetables, garlic powder*, onion powder*, herbs*, spices*, sea salt; Inka: Tofu*, amaranth*, hazelnuts*, vegetable oil*, vegetables*, herbs*, spices*, sea salt; Toto (Italian): Tofu*, tomato pulp*, vegetable oil, olives*, herbs*, spices*, sea salt; Miso Squash Spread: Squash or pumpkin*, onions*, sesame seeds*, celery*, miso (soybeans*, rice*, barley*, water, sea salt), spices.

3728. Escano, Crisanto R.; Gaddi, Virgilio Q. 1993.

Country report 11-Philippines. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 92-108. RAPA Publication (FAO), No. 1993/6. [12 ref]

• **Summary:** Contents: (1) Introduction. (2) Production: Status, major growing seasons and cropping systems, constraints, resolving constraints. (3) Processing, utilization and marketing: Status, supply and demand, exportation of soybean products, constraints, resolving constraints.

Figures: (1) Trend in soybean production, Philippines, 1980-90. (2) Soybean area harvested, Philippines, 1980-90. (3) Trend in the soybean yield, Philippines, 1980-90. (4) Regional shares of total production, Philippines, 1990. (5) Soybean and soybean product shares in importation, Philippines, 1990. (6) Country of origin, soybean meal import, Philippines, 1990. (7) Country of destination, soysauce export, Philippines, 1990.

Tables: (1) List of soybean-based food products popularly used in the Philippines. (2) Volume and value of soybean imports, 1980-90.

Soybean production increased from about 9,800 tonnes (metric tons) in 1980 to a peak of 11,466 tonnes in 1982, then decreased to 5,614 tonnes in 1990. Area planted to soybeans increased from about 10,000 ha in 1980 to a peak of about 11,000 ha in 1982, then decreased to about 7,000 ha in 1990. The average yield for the period 1980-1990 was 920 kg/ha, but has generally been falling since 1983. Southern Mindanao has been the single most important soybean producing region in the Philippines for more than a decade, accounting for about 67% of total Philippine soybean production in 1990; Central Mindanao comes next with about 23%.

A brief history of soybean production in the Philippines from 1983 to 1990 appears on pages 99-10. Popular soyfoods products in the Philippines include: A. Fermented products: Soy sauce (toyo), fermented soybean curd (tausi [sic, salted, fermented black soybeans]), tempeh (tempe), soybean paste (miso), soft fermented soybean curd (tahuri). B. Non-fermented products: Soybean sprouts (toge, taugé), soybean cheese [curds] (tokwa), Geerlings cheese (taho [tofu]), soybean milk (soymilk), and roasted soybean powder (soy coffee).

Philippine imports of soybeans and soybean products have increased rapidly since 1980, yet 93% of these imports in 1990 were soybean meal, of which 38% comes from India, 33% comes from the USA, 22% from China, and 7% from others.

In April 1991 the General Milling Corporation's soybean solvent extraction plant began operation in Tabango, Batangas. It is expected to reduce the country's imports of soybean meal but increase the imports of raw soybeans. Address: 1. Scientist III. 2. Subject Matter Specialist. All: PCARRD, Los Baños, Laguna, Philippines.

3729. Kataoka, Haruyo. 1993. Japan: A cookbook. Munich, Germany: Mosiak Verlag. 157 p. Index. [Eng]*

• **Summary:** This book contains one section (2 pages) that discuss tofu, including how to make tofu at home, followed by 15 tofu recipes. Other dishes using soy appear elsewhere, like Plum Wine with Soya, Milk Jelly, and some dishes that use miso as an ingredient.

Note: This book was originally published by in 1990 Mosiak Verlag in German.

3730. Kitamura, Keisuke. 1993. Country Report 6-Japan. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia: Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 64-69. RAPA Publication (FAO), No. 1993/6.

• **Summary:** Contents: (1) Production and uses. (2) Research activities. (3) Germplasm.

Figures: (1) Scheme of domestic soybean price in Japan. (2) Geographical distribution of soybean varieties according to their ecotypes and location of soybean breeding stations in Japan.

Tables: (1) Planted area, production and yield of soybean in Japan. Total planted area has decreased from 306,000 ha in 1960 to 146,000 ha in 1990. Production has decreased from 418,000 tonnes (metric tons) in 1960 to 220,000 tonnes in 1990. Yield has increased from 1,360 kg/ha in 1960 to a peak of 1,790 kg/ha in 1990. (2) Trends of soybean supply and demand. Japan's imports have increased from 3,244,000 tonnes in 1970 to 4,330,000 tonnes in 1991, when 97.3% of the soybeans used in Japan were imported. Uses of soybeans in 1990: Oil 3,630,000 tonnes—up from 2,505,000 tonnes in 1970. Food 725,000 tonnes—up from 522,000 tonnes in 1970. Fermented products (miso, shoyu, natto) 196,000 tonnes—down from a peak of 208,000 tonnes in 1980. Animal feed 95,000 tonnes—up from 10,000 tonnes in 1970. (3) Trends of soybean price. (4) Trends of seed production. (5) Soybean research activities in Japan. (6) Objectives of the respective breeding stations for soybean. (7) Characteristics of the leading and some unique soybean varieties in Japan. For each of 15 varieties gives: Name, year registered (1928-1991), breeding method (crossing, pure line, mutation, back-crossing), ecotype, weight of 100 seeds, seed color, hilum color, characteristics. Address: National Agricultural Research Centre, Tsukuba City, Japan.

3731. Marks, Copeland; Kim, Manjo. 1993. The Korean kitchen: Classic recipes from the land of the morning calm. San Francisco, California: Chronicle Books. 236 p. Illust. Index. 23 cm. [8 ref]

• **Summary:** Korea is a peninsula surrounded by water (including the Yalu River that marks the border between China and Korea). There are an estimated 200 varieties of kimchi such as cabbage, cucumber, eggplant, white radish, turnip, etc. The glossary (p. 7-13) includes: Denjang paste (a fermented soybean paste and flavor enhancer). Gochu Jang (hot fermented chili paste; Gochu means chili). Seaweed: Kelp (*Ulva conglobata*, laver (*Porphyra umbilicalis*, sold in very thin sheets [nori]), *miyuk* (*Undaria pinnatifida* [wakame])). Soy sauce (with directions for making it at home). Soybean curd (Two types: Chinese is a

firm square about 4 inches on a side and 1 inch thick; Japanese is soft and creamy, about 2 inches thick).

Concerning Gochu Jang: This is the main seasoning in Korean cooking. It has been prepared at home for centuries and stored in the many black pottery pots so conspicuous on Korean rooftops or gardens. Each year on March 3, an auspicious date, the householder starts to prepare enough gochu jang to last all year. Ingredients: Glutinous rice (cooked to a pudding consistency), fermented soybean cake (*meju*), hot red chilis, salt, and barley malt syrup mixed with water. These are mixed and allowed to ferment [outdoors] in a pottery jar for at least 3 months. In early May, as the weather warms, the [woven conical bamboo] cover of the storage jar is removed early each day “so that the sun can strike and warm the contents to accelerate fermentation. At night the cover is replaced.” The fermentation process eventually reduces gochu jang to a smooth, jamlike consistency with a many-dimensional flavor; it adds a lively sting and rich red color to any food with which it is used. “Korean cooking without this indispensable condiment is unthinkable.”

Recipes include: Beef shreds in soy sauce (p. 48). Fried spiced bean curd (p. 57, *Tubu choerim*). Stuffed bean curd (p. 58, *Tubu gui*). Crushed bean curd salad (p. 70, *Tubu sang she*). Bean curd and pork patties (p. 96). Assorted stuffed fritters (p. 100-01, *Jon*). Seasoned dipping sauce (p. 109, *Yang yeum kanjang*). Simple bean curd soup p. 117, *Tubu kook*). Bean curd soup with clams (p. 125, *Sundubu*). Vegetable soup with soybean curd (p. 135, *Tubu jigae*). Soybean sprout soup (p. 136, *Kongnamul kook*). Address: 1. Food historian; 2. Dr. (Mrs.), expert on history, science, and preparation of kimchi.

3732. Pitchford, Paul. 1993. *Healing with whole foods: Oriental traditions and modern nutrition*. Berkeley, California: North Atlantic Books. xxii + 656 p. Illust. Index. 26 cm. [536 ref]

• **Summary:** Contents: 1. Origins. Part I: The roots of diagnosis and treatment. 2. Yin-yang and beyond. 3. Qi vitality. The six divisions of yin and yang: 4. Heat/cold—The thermal nature of food and people. 5. Exterior/interior: Building immunity. 6. Excess and deficiency.

Part II: Essentials of nutrition. 7. Dietary transition. 8. Water. 9. Protein and vitamin B-12. 10. Oils and fats. 11. Sweeteners. 12. Salt. 23. Condiments, caffeine, and spices. 14. Vitamins and supplements. 15. Calcium. 16. Green food products. 17. Survival simplified. 18. Enjoyment of food. 19. Food combinations. 20. Fasting and purification. 21. Food and children.

Part III: The five element and organ system. 22. Five elements: Seasonal attunement and the organs in harmony and disease. 23. Therapeutic use of the five flavors. 24. Wood element. 25. Fire element. 26. Earth element. 27. Metal element. 28. Water element.

Part IV: Diseases and their dietary treatment. 29. Blood sugar imbalance [diabetes]. 30. The stomach and intestines. 31. Blood disorders. 32. Cancer and regeneration diets. 33. Other degenerative disorders.

Part V: Recipes and properties of vegetal foods. 34. Vibrational cooking. 35. Grains. 36. Breads. 37. Legumes—Peas, beans, and lentils: Healing properties of legumes, improving the digestibility of legumes, techniques for cooking legumes, miso, tempeh, tofu. 38. Nuts and seeds. 39. Vegetables. 40. Sprouts. 41. Salads. 42. Seaweeds: Agar-agar, dulse, hijiki and arame, kombu and kelp, nori, wakame, Irish moss and Corsican (*Alsidium helminthocorton*; it is sold as a tea and discharges worms. 43. Soups. 44. Sauces. 45. Condiments: Chutneys and relishes. 46. Spreads and patés. 47. Pickles. 48. Grain and seed milks (incl. sesame seed milk, almond milk, almond milk shake, sprouted grain milk {oats, rice, millet, barley}, cooked grain milk). 49. Rejuvelac and yogurt. 50. Fruit. 51. Desserts. Appendixes: Recipe locator. Bibliography (180 references, mostly alternative; Oriental philosophy. Chinese medicine: Theory and foundations. Chinese dietary therapy. Ayurvedic and Tibetan medicine. Western approach to nutrition. Healing the spirit and mind. Chinese herbology. Western herbology. Healing with food. Green foods. Amaranth. Seaweeds. Vegetarian, macrobiotic, vegan. Children. Ecology, politics, and ethics of food. Degenerative diseases and immunity. Toxins and radiation. Cookbooks. Food catalogs, guides, and references. Sources of data for tables, charts, and nutritional statistics). References and notes (356 refs, mostly scientific). Resources index (Incl. Soyfoods Center).

The following are listed in the index (f = most important pages): Acid-forming foods (p. 235f, 240). Aduki [azuki] beans (p. 26, 34, 50, 60, 68, 77, 178, 273, 305, 307, 319, 362, 467f). Amaranth (lots, 419-20f). Amasake (p. 98, 152-53, 155, 160, 163, 275, 287, 592f). Animal products (lots). *Aspergillus oryzae* (p. 592). Ayurveda (lots). Black sesame seed (lots, 492f). Black soybean (60, 68, 288, 317, 324, 327, 468). Bran (p. 332) and its role in relieving constipation (345-46). Buckwheat (lots, 422f). Buddha. Calcium (lots). Cancer. Cheese (lots). Cholesterol. Cigarette smoking. Coldness, bodily. Dampness, bodily. Deficiency. Five elements system. Free radicals. Gerson, max and cancer therapy (p. 41, 126, 162, 365-66, 381). Goiter. Gomasio (sic, gomashio; sesame salt, p. 272, 566f). Heart / Heart/ mind. Heat (lots). Hijiki. Ice cream (p. 291, 305). Job's tears (p. 381, 383). Kasha (buckwheat, p. 422). Kelp. Kloss, Jethro (p. 366, 381). Koji (p. 479). Kudzu (p. 22, 25, 29, 60, 289, 299, 309, 317, 414f). Lecithin (lots, p. 127, 470, 414f). Legumes (lots, p. 466-471f). Macrobiotics (p. 3-4). Marijuana (lots). Menopause. Microwave cooking (p. 20). Milk. Mind, Chinese Zen concept of. Miso (p. 33-34, 60, 72-74, 78, 81, 90, 92, 98, 101, 105-06, 150, 159, 164, 195, 221-22, 272, 275, 315, 376, 479-82f; natto miso p. 482).

Mochi (p. 436-37f). Mother's milk—to increase. Mucus. Nails, dry and brittle (p. 285). Oils (incl. soy oil, p. 138-41). Omega-3 fatty acids. Nori. Protein (lots). Qi [chi, p. 16-17]. Quinoa. Rice syrup. Schweitzer, Albert (365). Sea palm (p. 541). Seaweed (lots, p. 540-55f—see also Agar, alaria, arame, bladderwrack, Corsican, dulce, hijiki, Irish moss, kelp, kombu, nori, ocean ribbon, sea lettuce, sea palm, wakame). Seitan (p. 446-47). Sesame butter (p. 81, 492). Sesame seed (lots, 492f). Soybean (p. 52, 56, 60, 105, 124, 161, 178, 232, 235n, 250, 300, 466, 470f; children and soy products 253-54; soy sprouts p. 22, 34, 122, 470f; see also miso, soy sauce, tempeh, tofu). Soy sauce (p. 34, 78, 81, 98, 105-06, 150, 159, 164, 195, 222, 272, 277, 315, 414f, 480). Spirulina. Sprouting (p. 232-33). Sprouts (lots, p. 528-30f). Steiner, Rudolf (p. 19-20, 504). Stomach (beneficial foods, stomach/duodenal heat and, strengthening food). Stress. Sugar (lots). Superoxide dismutase (SOD). Sweating—night sweats (p. 24, 117, 441). Sweeteners. Sweet rice (p. 433f). Tahini (sesame, p. 106, 225, 493). Tempeh (p. 22, 34, 56, 60, 96, 99, 105, 124, 216, 221, 242, 250, 290, 307, 310, 482-86f; vitamin B-12 and p. 98). Thirst. Tobacco. Tofu (p. 22, 25, 34, 55-56, 60, 68, 81, 105, 124, 242, 250, 290, 300, 303, 307, 310, 317, 327, 486-89f). Tomato. Tongue coating and digestion (p. 399). Umeboshi plums (p. 78, 159, 222, 272, 307, 414, 583f). Umeboshi vinegar (p. 414). Urinary incontinence and deficiency of kidney qi (p. 318-19). Urination, frequent, from kidney qi and yang deficiencies (p. 318). Valerian root. Vegan (p. 5, 95, 137, 261, 389, 502). Vegetarianism (p. 81-82, 95). Vitamin B-12. Vitamin E. Vitamin K. Wakame. Warming foods (p. 18-20, 26-27). Warts. Watermelon. Wind, bodily (foods which quell, 286-89; incl. black soybean, p. 468). Yang. Yin.

Talk with Heartwood Institute. 1997. Nov. 12. This is basically a massage school that also offers retreats. Paul's background is in the martial arts and massage. He graduated from a college after 4 years but the name of the college is not available. He also did 2 years of graduate work at an institution whose name is not available. The Institute sent their catalog/brochure. Address: Director, Heartwood Inst. Wellness Clinic and Oriental Healing Arts Program, 220 Harmony Lane, Garberville, California 95542. Phone: 707-923-5000.

3733. Shimizu, Kay. 1993. Tsukemono: Japanese pickled vegetables. Tokyo: Shufunotomo Co. Ltd. 112 p. Color plates. *

3734. Shinshu-Miso Research Institute. 1993. *Report of the Shinshu-Miso Research Institute* No. 34. p. 1-119. [Jap; eng]
Address: Nakagosho 469-6, Nagano-shi 380, Japan.

3735. Tran, Van Lai 1993. Country report 15—Vietnam. In: N. Chomchalow & P. Narong, eds. 1993. Soybean in Asia:

Proceedings of the Planning Workshop for the Establishment of the Asian Component of a Global Network on Tropical and Subtropical Soybeans. Bangkok, Thailand: FAO Regional Office for Asia and the Pacific. viii + 218 p. See p. 143-150. RAPA Publication (FAO), No. 1993/6.

• **Summary:** Contents: (1) Introduction. (2) Production: trend, major growing seasons and cropping systems, constraints, resolving the constraints, future research. (3) Processing, utilization and marketing: Consumption, processing, marketing, constraints, resolving the constraints. (4) Resources: Personnel, seeds. (5) On-going research projects. (6) Information required. (7) Conclusion.

Tables: (1) Area, yield, and production of soybean in Vietnam, 1970-90. (2) Soybean production constraints in Vietnam. (3) Several research findings on soybean breeding and farming patterns. (4) Identified constraints for soybean production in Vietnam. (5) National requirement for food and production of soybean. (6) Methods of soybean processing of Vietnam. (7) Constraints to soybean processing, utilization, and marketing. (8) Future research priority for soybean in Vietnam. (9) Number of scientists working on soybean research. (10) Training needs on a priority basis. (11) Soybean varieties of high yield potential.

Introduction: "Soybean has been cultivated in Vietnam for a long time. Le Quy Don, in his book "Van Dai Loai Ngu", written in 1773, mentioned about soybean cultivation. It is the second most important legume in Vietnam. All soybean products are used as human foods and animal feed because of its high food value (40-50% of protein and 20-25% of oil).

"The Government of Vietnam, which is conscious of the importance of soybean and its role of human food and animal feed, and the possibility to increase its production, has listed soybean as the number two most important crop after groundnut in her agricultural development policy."

Table 1: Area planted to soybeans in Vietnam grew from 17,078 ha in 1970 to 149,000 ha in 1990, projected to grow to 300,000 ha in the year 2000.

Production of soybeans in Vietnam increased from 5,277 tonnes (metric tons) in 1970 to 146,020 tonnes in 1990, projected to grow to 420,000 tonnes in the year 2000.

Yield of soybeans in Vietnam grew from 309 kg/ha in 1970 to 980 kg/ha in 1990, projected to grow to 1,400 kg ha in the year 2000.

"Most of the soybean produced in Vietnam is consumed as human food prepared by traditional methods, which include fermented products such as soysauce, soypaste (miso), soycurd (fermented tofu), and soycheese, and non-fermented products such as soymilk, soycurd (tofu) and soybean oil.

Note: This is the earliest English-language document seen (March 2009) that uses the term "soypaste" to refer to miso.

Concerning the Vietnamese names of these foods, Huong Quan Nguyen (Zomore Quan) writes, in reply to a question from Soyinfo Center. 2008. Aug. 17. Soy sauce = “xi dau” (the Vietnamese “d” written without the bar across the vertical stroke is pronounced “Z”).

Soy paste = “tuong dau nanh” or “tuong Cu Da.” “Tuong” is a generic term meaning “sauce.” As you know, Cu Da is the name of the village famous for its soy paste. “Tuong Cu Da” literally means “sauce made in Cu Da Village.” Soy paste is made in many villages in North Vietnam, not just in Cu Da. I have heard that Tuong Ban and Tuong Pho Thoi are just as good as Tuong Cu Da.

Soy curd = “dau hu” (which is unfermented. Once the soy curd is fermented, it is referred to as “chao”).

Soy cheese = “chao” (this word has no diacritical mark).

Note: Zomore asked six Vietnamese people who are knowledgeable about soyfoods and all are aware of only one kind of fermented tofu in Vietnam; therefore they cannot imagine what fermented “soycheese” is. Address: Legumes Research and Development Centre, INSA, Dong Da, Hanoi, Vietnam.

3736. *SoyaScan Notes*. 1994. Keywords used with more than 1,000 documents in the SoyaScan database, as of 1 January 1994 (Overview). Jan. 1. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** 1. USA 24,636. 2. Commercial soy products 6,565. 3. Japan 5,948. 4. Tofu 5,122. 5. Soymilk 3,884. 6. Illinois 3,642. 7. Soy sauce 3,387. 8. California 3,129. 9. Historical (documents published from 1900 to 1923) 3,013. 10. Soy flour 2,822. 11. History 2,730. 12. Soy oil 2,648. 13. Germany 2,447. 14. Miso 2,324. 15. Vegetarianism 2,319. 16. United Kingdom (England, Scotland, Wales, N. Ireland) 2,134. 17. China 1,554. 18. Soybean meal 2,019. 19. Cookery 2,017. 20. Soybean production: Cultural practices and agronomy 1,996. 21. France 1847. 22. Tempeh 1,844. 23. Soybean production (General): 1,825. 24. U.S. Department of Agriculture 1,744. 25. New York 1,665. 24. Nutrition (General) 1,471. 25. Historical (documents published before 1900) 1,460. 26. India 1,397. 27. International trade in soybeans, soy oil, and/or soybean meal 1,225. 28. Canada 1,204. 29. Soy protein isolates 1,204. 30. Michigan 1,146. 31. Meatlike commercial products 1,145. 32. USDA state agricultural experiment stations in the USA 1,120. 33. Soybean production: Marketing 1,098. 34. Ohio 1,095. 35. Soybean production: Variety development 1,083. 36. Indonesia 1,063. 37. Tofu used as an ingredient in second generation commercial food products 1,062. 38. Bibliographies and literature reviews 1,049. 39. Massachusetts 1,029. 40. Macrobiotics 1,022. 41. Soy ice cream 1,014.

3737. O'Brien, Jim. 1994. Can tofu stop cancer? Research shows soy foods cut risk of breast, prostate cancers *Your*

Health. Jan. 25. p. 21-22. [1 ref]

• **Summary:** Mark Messina, PhD, a nutritionist and former researcher at the National Cancer Institute for 5 years, states that “There’s strong evidence to indicate that soy can lower cancer risk, especially of the breast and prostate.” Messina says that “soy may contain ‘anti-estrogens,’ compounds that perform many of the necessary and beneficial functions of real estrogen, but not the harmful stuff (for example estrogen is vital for reproductive health, but researchers believe it may spur growth of many breast cancers).

In Japan, where the diet is rich in soy [and much lower in fat], the breast cancer rate is much lower than in the USA. Every year in Japan roughly 7 women per 100,000 die of breast cancer and 28 per 100,000 are diagnosed with the disease; the corresponding figures for U.S. women are 27 and 105.

Japanese men also have low rates of prostate cancer. 3.5 per 100,000 Japanese men die of this disease every year but it kills 15.7 per 100,000 American men—also nearly a fourfold difference.

3738. Macdonald, Bruce. 1994. Macrobiotic Wholesale Co. is now Macrobiotic Company of America (MCOA) (Interview). *SoyaScan Notes*. Jan. 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bruce (who was one of the early important figures in Erewhon) bought this company from Kurt Schmitz on 15 Sept. 1993. Kurt, who is about age 65, had come to North Carolina from California to retire. He had worked at Hewlett-Packard for more than 20 years. He purchased the company (named Macrobiotic Wholesale Co.) in Aug. 1986 from Great Eastern Sun; Barry Rand negotiated the deal. At the time the company had sales of about \$170,000/year; now its sales are well over \$1,300,000/year and the last two months have set sales records. Bruce renamed it Macrobiotic Company of America. Bruce used to live in Vermont, but he now lives in North Carolina. Kurt is interested in possibly starting a miso manufacturing company in North Carolina—which has long been considered by macrobiotic teachers to have an ideal climate for making miso (hot summers, cold winters, somewhat humid). The American Miso Company is only 50 miles away. Bruce would like to move the company up to the northeast; he feels it is situated in the wrong place.

Macrobiotic Wholesale Company used to be a division of Great Eastern Sun. Great Eastern Sun sold products to distributors, whereas Macrobiotic Wholesale Company sold directly to retail stores. The distributors got upset with Great Eastern Sun for wearing two hats, so Great Eastern Sun decided to sell Macrobiotic Wholesale Company. Barry Evans still owns Great Eastern Sun.

Note: Half of MCOA is owned by Muso Shokuhin of Japan. When William Shurtleff asked Bruce about this on 4 April 1997, Bruce confirmed that it was true. When the

company was purchased from Kurt Schmitz on 15 Sept. 1993, Yuko Okada of Muso put up 95% of the money and Bruce put up 5%—using his own funds. Yuko borrowed all or most of the 95% to make the purchase, and MCOA is paying him back. Bruce agreed to manage the company in exchange for 50% ownership, which he still has. Muso owns the other 50%. He did not tell the true story to Shurtleff in 1994 because Muso wanted to keep this semi-confidential. Address: Owner, Macrobiotic Company of America, 799 Old Leicester Hwy, Asheville, North Carolina 28806. Phone: 704-252-1221.

3739. DeBona, Don. 1994. Early work with natural foods, macrobiotics, and soyfoods in America (Interview). *SoyaScan Notes*. Jan. 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Don was born in Eagle Pass, Texas, in 1955. He had “hung around natural food stores since high school.” While in high school, he worked as produce clerk at a natural foods store named The Powerhouse in his home town on Towson, Maryland. It was the town’s first natural foods store. They bought foods from Erewhon.

In 1977 Don graduated from a small Catholic college named Mount St. Mary’s College in Emmitsburg, Maryland. He got interested in macrobiotics through books (such as *Zen Macrobiotic Cooking* by Michel Abehsera) that same year several months after he graduated; he had been a vegetarian for about 6 months. His first job after college was in Virginia at Appalachian Outfitters, a store which outfitted people going on camping or river trips.

Don worked for Laurelbrook Foods in Maryland for about a year, starting in 1981. He left shortly after the company filed for Chapter 11 bankruptcy protection on 15 Feb. 1982, then he went to work on a Permaculture farm named Watkins Farm on the Maryland/Virginia border. Run by a man named Law Watkins, it was testing no-till agriculture, growing organic winter wheat, barley, soybeans and summer produce according to the principles set forth in Masanobu Fukuoka’s classic, *The One Straw Revolution...* After working there for a year and a half, in December 1983 he went to Great Eastern Sun (GES, which had started business in March 1982). GES was just starting to get involved with soymilk (Ah Soy) when Don arrived; taking charge of the soymilk was his first project at GES. Barry Evans hired Don and was actively running GES at the time. Marty Roth had just left for Westbrae when Don arrived; Don took his place as general manager/sales manager. John Belleme was still at American Miso Co. John Fogg designed the package for Ah Soy; Don invented the phrase “Nondairy Soy Beverage” which is now widely used on other soy beverages. After working at GES for about a year plus several months, Don and his wife went down to the American Miso Company in Feb. 1985 to take over from John Belleme. Bob Ballard took Don’s place at GES, but

Don was the general manager of GES until Nov. 1993, when he hired John Swann. Don still owns part of GES (as well as part of American Miso Co., along with Barry Evans) and is paid by them, even though American Miso Co. is a separate corporation. Bean Mountain Soyfoods in North Carolina was shut down about 2 years ago; John Swann used to be in charge of Bean Mountain. John Fogg worked with John Troy for a while; they started a company named American Natural Foods. Then John Fogg did consulting for Arrowhead Mills, but 2-3 years ago he left the natural foods business and was writing books on motivation. Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3740. Shurtleff, William; Aoyagi, Akiko. comps. 1994. Soyfoods industry and market—Bibliography and sourcebook, 1985 to 1993. Lafayette, California: Soyfoods Center. 361 p. Subject/geographical index. Author/company index. Language index. Printed 11 Jan. 1994. Published Jan. 1995. 28 cm. [985 ref]

• **Summary:** This is the second of the two most comprehensive books ever published on the soyfoods industry and market worldwide.

In May 1982 the first study of the burgeoning soyfoods industry in the Western world was compiled by Shurtleff and Aoyagi, and published by Soyfoods Center. In April 1985 the fifth edition of that book, titled *Soyfoods Industry and Market: Directory and Databook* (220 pages), was published. It contained statistics through 1984, the market size and growth rate for each soyfood type, rankings of leading soyfoods manufacturers of each soyfood type and the amount each produced, analyses, trends, and projections. This book is published to update the 1985 market study.

In the decade since 1984 the soyfoods market has continued to grow at a very healthy rate, with some soyfood types (such as soymilk) growing at a truly astonishing sustained rate—in both the USA and western Europe—as the statistics in this book show so vividly. In 1975 only 75 new commercial soyfood products were introduced in the USA, yet that number skyrocketed to 217 in 1979, reaching an amazing 422 new products in 1987.

During the decade from 1984 to 1994, Soyfoods Center has invested most of its time and resources in the production of SoyaScan, the world’s largest computerized database on soyfoods, which contains more than 44,500 records as of Jan. 1994. This database also includes a wealth of carefully researched statistics and analyses of the soyfoods market; those from the start of 1985 to the end of 1993 are contained in this book. Its scope includes all known information on this subject, worldwide. Its focus, however, is statistics, analyses, and trends concerning the soyfoods industry and market in the United States and Europe.

In May 1990 Soyfoods Center conducted an in-depth study of the tofu market in Europe (137 pages), and in July 1990 of the soymilk market in Europe (261 pages). All original interviews and published records from both of these market studies, plus a summary of each study, are included in the present book.

The SoyaScan database is composed of individual records. One record might be an original interview with the head of the largest soymilk company in Europe, on the size and growth of the soymilk market in Europe, and new trends in that market, conducted by William Shurtleff of Soyfoods Center. Another might be a published article or an unpublished document concerning the growth of the market for soy yogurts or soy sauce in America.

This book documents the growth of each product category in every country worldwide. The book contains three extensive and easy-to-use indexes: A subject/geographical index, an author/company index, and a language index. These allow you to find the exact information you need on the soyfoods industry and market quickly and easily. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

3741. United Soybean Board; Nebraska Soybean Program. 1994. Designed for life: A closer look at the versatile soybean's contribution to human health (Brochure). Lincoln, Nebraska. 12 panels. 23 x 10 cm each. [1 ref]

• **Summary:** Contents: Soybean fiber. Soybean protein (in soy flour, isolates, concentrates). Soybeans: The newest and oldest of designer foods. Finding and using soybeans: Miso, tofu, natto, tempeh, full fat flour, soymilk, soy nuts, soy sauce. Soybean oil: 85% unsaturated fat, no cholesterol, high in polyunsaturates, hydrogenation and *trans* fatty acids. Once upon a time ("circa 1500 BC, Yu Xi-ong and Gong Gang-shi, who were either bandits or warlords depending on your perspective..." discovered the soybean. Note: This story has no basis in historical fact). The soybean: Health insurance in a pod.

Photos show: Two hands holding up a large Chinese bowl of miso soup containing squares of tofu. A table set with dishes of various East Asian soyfoods. Charts: Bar graphs showing percentage of saturated, monounsaturated, and polyunsaturated fatty acids in soybean oil and other oils and fats. Nutritional analysis of 1 cup of cooked soybeans.

Note: This brochure was developed for the United Soybean Board (USB) by the Evans Group in Seattle, Washington. It was mailed mostly to food manufacturers. Address: Lincoln, Nebraska.

3742. United Soybean Board. 1994. Soybeans: Unlocking the secret to good nutrition. Healthcare guide. St. Louis, Missouri. 8 p. 28 cm. [5 ref]

• **Summary:** Contents: A critical food source from the dawn of history. The only vegetable that contains complete

protein. World soybean production (1992/93, bar graph). The most versatile food on earth. Health benefits of soy foods (discusses only soybean oil!). Nutritional analysis of soybeans, kidney beans, and peanuts. Bar graph showing the fatty acid composition of soybean oil and other oils and fats (soybean oil is "the balanced oil"). Hydrogenation and health. Cis and *trans* fatty acids. Soybean oil's place in the diet. Whole soybeans foods: Tofu, tempeh, miso, natto, soy sauce, full fat soy flour, soy "nuts" and soymilk. Soybean fiber (the outer hull). Soy protein products: Defatted soy flours, soy isolates, soy concentrates. Isoflavones (incl. Genistein). Soybeans, the "All American" legume. For more information call 1-800-Talk-Soy.

Note: This brochure was developed for USB by the Evans Group in Seattle, Washington. It was mailed mostly to dietitians, nutritionists, and members of the food industry. It focused more on soy oil than on soy protein. Address: St. Louis, Missouri.

3743. Nakagawa, Keiko H. 1994. The miso market in America (Interview). *SoyaScan Notes*. Feb. 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Keiko has just finished a market survey titled *Beikoku Miso Shijo Chōsa Hōkoku* (The miso market in America: Report of a survey; 22 pages, in Japanese). She used statistics (with permission) from *Soyfoods Industry and Market: Directory and Databook* (1985) by Shurtleff and Aoyagi and from a database search of the SoyaScan database to get started on her research. Then she contacted all miso manufacturers listed in the directory and in this search, and interviewed the owner of each company. She found that total miso production by the 7 manufacturers listed below was 1,467 tonnes/year = 3,227,400 lb/year. She found that the largest miso makers in the USA (including Hawaii) are as follows, listed in descending order of size: 1. Miyako Oriental Foods (founded 1976, 1,000 tonnes/year = 2,200,000 lb/year, Los Angeles; Mr. Shimizu says they are still only using half their production capacity. Note: In 1982 Miyako produced 544 tonnes/year of miso according to Shurtleff and Aoyagi. 1985. *Soyfoods Industry and Market*, p. 108). 2. Hawaiian Miso & Soy Co. (founded 1936, 227 tonnes/year = 500,000 lb/year, Honolulu. Production was 512 tonnes/year in 1982). 3. American Miso Co. (founded 1979, 113 tonnes/year = 250,000 lb/year, North Carolina. Production was 125 tonnes/year in 1982). 4. American-Hawaiian Soy Co. (founded 1941, 91 tonnes/year = 200,500 lb/year, Honolulu. Production was 125 tonnes/year in 1982). 5. South River Miso Co. (founded 1981, 18.18 tonnes/year = 40,000 lb/year, Massachusetts). 6. American Biofoods (founded 1983, 16 tonnes/year = 35,300 lb/year, Holmdel, New Jersey; also makes Dengaku Miso). 7. Junsei Yamazaki Miso Co. (founded 1983, 2 tonnes/year = 4,400 lb/year, Orland, California).

Companies listed in the 1985 directory which cannot be located and probably no longer make miso are: Cottage Miso (Wisconsin), Imagine Foods (Missouri), Parks Brands (Hawaii), The Soy Plant (Ann Arbor, Michigan), and Well House (Colorado).

Imports of miso to the USA have continued to increase dramatically, from 959 tonnes (metric tons) in 1982 to 1,554 tonnes in 1992 (according to Japanese Customs sources).

On 20 Feb. 1994 Keiko sent a copy of her Japanese-language market study to Soyfoods Center, where it was placed in the library. Address: 667 Spyglass, Valley Springs, California 95252. Phone: 209-772-1502.

3744. Asbridge, David D. 1994. Agricultural importance of soybeans. In: Mark Messina, ed. 1994. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease: Abstracts. Chesterfield, Missouri: United Soybean Board. 27 p. See p. 6. Held 20-23 Feb. 1994 at Mesa, Arizona.

• **Summary:** "Soybeans are omnipresent in American life... Last year, the average American consumed only four pounds of soyfoods in the form of soy protein products, tofu, soymilk, tempeh, miso, soy sauce, and soynuts. They consumed over 40 pounds of soybean oil in the form of margarine, salad dressings, cooking oils, and shortening. They consumed 204 pounds of meat, poultry, and eggs. Soybean meal, the most widely used processed feed ingredient in the U.S., is the leading source of protein for meat and poultry animals. To meet this huge demand for soybeans, vast resources are needed. In 1992, 440,000 U.S. farmers planted 59 million acres of soybeans. That's enough to nearly cover the entire state of Arizona. The farm value of the 2.2 billion bushel crop was more than \$12 billion dollars. Once farmers sold the 1992 crop, the majority of the soybeans were either crushed into meal and oil, or exported. The meal and oil were valued at \$6 billion and \$3 billion, respectively. Exports, which historically make up one-third of the U.S. soybean crop, directly reduced the U.S. trade deficit by almost \$4.5 billion dollars and indirectly employed 126,600 people. It has been estimated that since 1975, the value of the soybean crop has been about \$275 billion in nominal terms. The multiplier effect brings the total impact to the US economy of soybean production to \$800 billion." Address: American Soybean Assoc., 540 Maryville Centre Drive, Suite 390, P.O. Box 27300, St. Louis, Missouri 63141-1700.

3745. Badani, Bernard. 1994. Edible soybean mission report, Indonesia, Taiwan, Korea, February 1994. Ottawa, Ontario, Canada: Agriculture and Agri-Food Canada. 23 p. 28 cm. Spiral bound.

• **Summary:** Contents: Foreword: Mission objective, countries visited, main goals, conclusion. Acknowledgments. Names of the 8 mission members. Visit

to Indonesia (Jakarta): Background, visits (Nestle soymilk plant in Surabaya, BULOG), conclusions, market potential (short, medium, and long term). Visit to Taiwan (Taipei, Taichung, Tainan, Kaohsiung): Background (the pro-American soybean lobby), visits (Taiwan Tofu Manufacturers Assoc., Tet Union Corp., Great Wall Enterprises, Heng Yih), conclusions, market potential (short and medium term). Visit to Korea (Seoul): Background, visits (Hyosung Corp., AFMC, Korean and Seoul Tofu Manufacturing Co-operatives), conclusions, market potential (short and medium term). List of contacts by country (photocopies of business cards). Note: Mr. Badanai works for this federal organization in Ottawa.

This mission, whose coordinator was Michael Loh, took place between Feb. 25 and March 10, 1994; it was organized by OSGMB with assistance from the Canadian Embassies in Jakarta and Seoul, and the Canadian Trade Office in Taipei. The overall objective of the mission was to open these 3 markets to the sale of Special Quality White Hilum (SQWH) soybeans from Canada for use by their soy food industries.

Indonesia imports about 700,000 tonnes of soybeans each year, mostly grade #1 from the USA, to supplement its local production of about 1.3 million tonnes. About 250,000 tonnes of the imports are used to make soyfoods such as tempeh (which accounts for about 80% of the total), tofu, tauchu (Indonesian miso), and soybean milk. The majority of their domestically grown soybeans are also used to make soyfoods. All Indonesian soybean imports are handled by BULOG, a government agency which determines yearly requirements and allocates the resulting imports to various companies under a complex price structure formula apparently designed to maintain the competitiveness and full utilization of the domestic crop whose internal prices are very high by international standards. Sarpindo is the largest Indonesian soybean crusher. Nestle operates a soymilk plant in Surabaya that makes 12,000 tonnes/year and is completing a second one of 20,000 tonnes capacity in Jakarta. Much of Nestle's production, especially for the new Jakarta plant, is oriented toward the export market, with the Philippines as their top priority.

Taiwan grows only 12,000 tonnes of soybeans domestically, but they import 2,400,000 tonnes per year. Their main suppliers are the USA (1,938,000 tonnes, 80.8% of the total), China, 297,000 tonnes), and Argentina (6,000 tonnes). Imports are handled mostly by a small number of major crushers, which then select a portion of the #2 soybeans imported, bag them, and sell them to Taiwanese soyfood manufacturers. About 8% of the total imports (200,000 tonnes) are handled in this way. Tofu is by far the most important soyfood in Taiwan, with consumption of 49.79 kg/capita/year. Most tofu is made by very small companies. The main problem facing Canadian exporters is the almost total control that the pro-American soybean

lobby has shown so far in Taiwan. This lobby includes the main local crushers/importers of U.S. soybeans (which have a strong interest in maintaining the present import and distribution systems that make local tofu manufacturers dependant on them), and the American Soybean Association (ASA) office (with a staff of 15) in Taipei. Tet (Ttet) Union Corp. in Tainan is the largest crusher in Taiwan. Fwusow (Fwu Sow) is a large edible oil company. Taiwan's largest tofu manufacturer is Herng Yih Food Industrial Co. of Kaohsiung. The 13 year old company has two plants, 14 minutes drive apart.

Korea imports between 1 and 1.1 million tonnes of soybeans a year to supplement domestic production of about 200,000 tonnes. Approximately 200,000 tonnes of the total imports and 20,000 tonnes of domestically grown soybeans are used to make soyfoods, mostly tofu. All soybeans destined for this purpose are purchased by AFMC, the Agricultural and Fisheries Marketing Corporation, a state-owned corporation and government monopoly under the Ministry of Agriculture. that resells soybeans to food processors according to their needs, charging a very high markup over the import purchase price. This markup, in turn, allows AFMC to subsidize purchases of domestic soybeans which it buys at prices close to 5 times the international price but which it resells to tofu manufacturers at the same price as the imported soybeans. It is expected that AFMC will loose its importing monopoly on food grade soybeans by 1997 due to the GATT agreement. An immediate market potential for Canadian soybeans seems to exist for sprouting soybeans, of which Korea purchases about 6,000 tonnes a year. Address: Grains and Oilseeds Div., International Markets Bureau, Agriculture and Agri-Food Canada, Ottawa.

3746. Andoh, Elizabeth. 1994. Tokyo's rich array of regional dining. *New York Times*. March 6. p. XX6, XX19 (Sunday).

• **Summary:** Contains excellent reviews of the following Tokyo restaurants: Konomi, Kakiden, Itosho, and Shigeyoshi. The latter served "warabi ferns wrapped in fresh yuba (broad ribbons of bean curd [tofu])" and a "soup, which contained cubes of tofu and strips of fried bean curd... well seasoned with a burnished brown miso."

Note: This brief description of yuba is inaccurate; yuba is made from soymilk, not tofu. Address: Japan.

3747. *Toyo Shinpo (Soyfoods News)*. 1994. Miso no shukka juncho. Shôyu wa tomoni genshō. 93 nen no seisan shukka [Miso and shoyu production and shipment in Japan for 1993: Miso is increasing but shoyu is decreasing]. March 21. p. 5. [Jap]

• **Summary:** In 1993 in Japan 559,238 tonnes (metric tons) of miso were produced and 578,024 tons were shipped. Also

in 1993 some 1,163,843 kiloliters of shoyu were produced and 1,189,896 kiloliters were shipped.

3748. Hayhow, Sally; Messina, Mark. 1994. The soy solution: Might this humble bean have a critical role in preventing heart disease and cancer? *Vegetarian Times*. March. p. 77-78, 80, 82-84.

• **Summary:** A growing body of scientific evidence indicates that soyfoods can help in preventing heart disease and cancer. Soy protein has been shown to reduce the "bad" type of cholesterol, known as low-density lipoproteins (LDL). But the public is largely unaware that eating soyfoods may lower blood cholesterol markedly, thereby reducing heart disease risk. As a result of the lack of publicity given to these important scientific studies, a powerful, palatable form of preventive medicine is not being used.

One long section discusses isoflavones, which are plant estrogens that are only about 1/100,000th as potent as human estrogen. This weak estrogen activity may be responsible for their anticancer effects in hormone-related cancers such as breast cancer. Estrogen increases cancer risk by binding to receptors in breast cells. Isoflavones mimic estrogen, attaching to the receptors, and effectively blocking human estrogen. The most widely used drug in breast cancer treatment, tamoxifen, works in a similar way. Soyfoods are one of the only plentiful food sources of isoflavones.

Six little "sidebar" illustrations explain: Add a quarter pound of cubed, firm tofu to your stir fry: 13 gm of soy protein + 40 mg isoflavones. Pour half a cup of soymilk on your morning cereal: 10 gm soy protein + 20 mg isoflavones. Replace ¼ of the wheat flour in your bread with soy flour: 3 gm soy protein + 5 mg isoflavones (assuming a 3-cup loaf cut into 16 slices). Snack on a quarter cup roasted soynuts instead of peanuts: 18 gm soy protein + 50 mg isoflavones. Add a quarter cup TVP per person to chili: 11 gm soy protein + 35 mg isoflavones. Mix a tablespoon of miso into a cup of water for a warming broth: 1 gm soy protein + 5 mg isoflavones.

3749. Minnesota Soybean Growers Association; Minnesota Soybean Research & Promotion Council. 1994. *Cooking with soy*. North Mankato, Minnesota. 45 p. March.

• **Summary:** Talk with Christie Metzger of the MSRPC. 1996. Jan. 4. The first edition of this book was published in March 1994. Some of the recipes came from the winners of a contest. Address: 360 Pierce Ave., Suite 110, North Mankato, Minnesota 56003. Phone: 507-388-1635.

3750. Palmer, Jane. 1994. Soybeans: From tiny pods come big gains in the field of medical research. *World-Herald (Omaha, Nebraska)*. April 6. p. 37-38. Living section.

• **Summary:** Dr. Connie LaBarr, director of consumer information for Nebraska Soybean Program in Lincoln discusses new medical research linking soybeans with the prevention and treatment of diseases such as cancer, heart disease, and osteoporosis. She notes that “The soybean genistein has been called the ‘magic bullet’ in the fight against cancer.”

One sidebar titled “Joy of Soy Can Be Sampled at Home” gives recipes using whole dry soybeans, tofu, miso, and soynuts. Another sidebar titled “Soy Pops Up in Product After Product” lists the many products in a typical Omaha supermarket that use soy as an ingredient. Address: World-Herald Food Writer.

3751. Begley, Sharon; Springen, Karen; Hager, Mary. 1994. Beyond vitamins: Just a few years ago, scientists didn’t know phytochemicals existed. But today they are the new frontier in cancer-prevention research. *Newsweek* 123:44-46. April 25.

• **Summary:** A pull-quote states: “Soybeans, whether as miso soup or tofu or straight up, contain genistein. This phytochemical seems to keep tiny tumors from getting connected to capillaries that carry oxygen and nutrition. Without these supply lines, the tumor never grows, metastasizes—or kills.”

Most small tumors are not dangerous. The “danger lies in lumps that grow, invade the bloodstream and send colonists throughout the body. That is how breast, prostate and other solid tumors kill. But the original lump cannot grow without supply lines—capillaries that bring oxygen and other nutrients. Last year German researchers announced that they had isolated a chemical in soybeans that prevents these vital supply lines from forming. Called genistein, it might one day be copied in the lab and given to people to prevent small tumors from growing. In fact, the lack of genistein may explain why Japanese men who relocate in the West and adopt a soy-poor diet for even a few years have a greatly elevated risk of prostate cancer: without genistein, tiny tumors are no longer deprived of the blood vessels that let them grow.”

During 1993, some 1.17 million new cases of cancer were reported in the United States. The National Cancer Institute is so excited about phytochemicals that it has launched a multimillion dollar project to find, isolate, and study them.

Broccoli contains many cancer-preventing phytochemicals. Sulforaphane (which is also found in cauliflower, Brussels sprouts, turnips, and kale) removes carcinogens from cells. Cooking does not destroy it, and an improved version has now been synthesized. PEITC prevents carcinogens from binding to DNA. And indole-3-carbinol helps a precursor to the hormone estrogen break up into a benign rather than a cancer-causing form.

Citrus fruits, berries, and many other fruits and vegetables contain flavonoids [flavonoids], which help cancer-causing hormones from latching onto a cell.

Tomatoes, strawberries, pineapples, and green peppers are a rich source of p-coumaric acid and chlorogenic acid, two phytochemicals that work by disrupting the chemical union between two common molecules in cells; this union can produce a carcinogen.

A one-page sidebar titled “Are supplements still worth taking?,” by Geoffrey Cowley, notes that millions of health-conscious Americans consume antioxidant vitamins, revered for their power to subdue free radicals. In 1993 alone store sales of vitamin E supplements grew by 39% to \$123 million, vitamin C grew by 10% to \$117 million, and beta-carotene (vitamin A) grew by 31% to 22 million.

3752. Kath. Gemeinden St. Johann und St. Joseph. 1994. Soja fuer Ghana [Soya for Ghana]. Duisburg-Hamborn, Germany. 24 p. Illust. 21 cm. [Ger]

• **Summary:** Each year this group of German Catholics has one development-help project in Ghana. In 1991 and 1992 it was trees for Ghana. In 1993 it was soya for Ghana. Contents: Development help? by Gottfried O. Praem. Africa’s need (incl. population growth, demographics, per capita GNP, and infant mortality). Our new project: Soya for Ghana. Why soya? Yields a variety of foods, healthy, ethical (in relation to eating animals and protecting the environment), good for agriculture. History of the soybean plant. Food products from the soybean: Soymilk, tofu, soy protein, soy sauce, miso, tempeh, soy oil, soy sprouts. Cultivation of soybeans in northern Ghana. Planting and harvest. Ghana—the land and its agricultural products. Teaching hygiene in Ghanaian. Dear money: Where does it come from and how is it spent? Past projects in Ghana and the 1993 Soya for Ghana project. The Bole mission station in northern Ghana (90,000 inhabitants of which 4,000 are Christian). Recipes. A talk with Brother Rudolf, age 62, during his visit to Hamburg in Sept. 1993. Address: Duisburg-Hamborn, Germany.

3753. *SoyaScan Notes*. 1994. Foods of East Asian origin that the macrobiotic movement/community has played a leading role in introducing to America, starting in about 1960 (Overview). May 10. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** These include brown rice, rice cakes, miso (many types), shoyu (traditional Japanese-style soy sauce), tamari (Japanese soy sauce containing little or no wheat; prior to about 1980 many practitioners of macrobiotics referred to natural shoyu as “tamari,” thus inadvertently popularizing real tamari, which now may be better known in the USA than it is in Japan), natto (fermented soybeans), seitan (wheat gluten seasoned with a soy sauce broth; this word was coined by George Ohsawa), amazake (thick rice

beverage), umeboshi salt plums, sea vegetables (kombu, wakame, hijiki, nori, etc), tofu, soymilk, alternatives to dairy products (macrobiotics do not consume dairy products), buckwheat noodles (*soba*), kuzu, rice syrup, barley malt syrup, azuki beans, sesame seeds, sesame salt (*gomashio*), daikon (white radish) and daikon pickles, kabocha (Hokkaido pumpkin), shiitake mushrooms (also known as Chinese black mushrooms, they have a firm "meaty" texture), burdock, jinenjo (glutinous yam).

They have done this by starting and running many natural food companies to import, distribute, manufacture or grow these foods; by writing cookbooks and other books about these foods; by teaching classes (including many cooking classes in which these foods are used); by influencing other people to do all of the above.

The Japanese names of many of these foods have become anglicized and are now the standard English-language names.

The macrobiotic movement also played a major role in introducing "tahini" or sesame butter (a Middle-Eastern food) to America, starting with George Ohsawa's book *Zen Macrobiotics* in 1960. Of the first 20 records in the SoyaScan database that mention "tahini," 14 are associated with macrobiotics. Likewise, 22 of the first 50 records are associated with macrobiotics.

3754. Barnard, Neal D. 1994. Going vegetarian: beefing up without the beef. *Muscle & Fitness* 55:132. May. *

3755. Daley, Rosie. 1994. In the kitchen with Rosie: Oprah's favorite recipes. New York, NY: Alfred A. Knopf. xii + 130 p. Illust. Index. 20 x 19 cm.

• **Summary:** Note: Oprah is Oprah Winfrey, one of America's best known TV celebrities, famous—in part—for her lifelong struggle to control her weight, and for her Oprah Winfrey Show.

Contains 50 recipes that are low in fat, sugar, and salt. On pages 114-15 is Rosie's recipe for Chocolate Tofu Cake. The author says: "My version of chocolate cheesecake provides all of the treat with none of the guilt. I replace the typical bulk ration of cream cheese with tofu..." Other soy-related recipes: Cauliflower puree with peas (and brown rice miso, p. 20). Several recipes contain reduced-sodium soy sauce (p. 25, 33, 54, 88, 92, 102). Address: Chicago, Illinois.

3756. Melina, Vesanto; Davis, Brenda; Harrison, Victoria. 1994. Becoming vegetarian: A complete guide to adopting a healthy vegetarian diet. Toronto, Canada: Macmillan Canada. x + 262 p. Foreword by Louise Lambert-Lagacé. Index. 26 cm. [20 ref]

• **Summary:** An excellent vegan sourcebook and cookbook by three registered dietitians. For the Contents and details, see the 1995 revised American edition.

Talk with Vesanto Melina. 1996. July 22. This book has presently sold about 25,000 copies in Canada alone. A revised U.S. edition was published in Nov. 1995 by The Book Publishing Co. in Summertown, Tennessee. Address: Canada.

3757. Marrese, Anthony. 1994. Travels collecting soyfood products, interviewing soyfoods manufacturers, and sending the packages and reports back to Soyfoods Center (Overview). *SoyaScan Notes*. June 3. [Eng]

• **Summary:** Letter—1989 Oct. 28. Report from France.

Letter—1990 Dec. 24. Contains 1 report from India and 11 labels. He is now c/o Richter in Worpswede, Germany.

All the products (priced with "Dm") from Germany were purchased between Jan. 1992 and June 1992. All the products from Ireland (priced with "P") were purchased between June 1992 and May 1993. In March 1993 he interviewed Molly Turner and Teac Macro Center in Ireland. All the products priced with escudos (\$) from Portugal were purchased between May 1993 and May 1994.

Letter—1994 May 12. Contains 19 labels and 3 company reports (all from Ireland). He has been out of touch for about 2 years. From Germany he traveled to England, then Ireland, then Portugal, with interim visits to France, Israel, and Germany. He is now in Lisbon, Portugal. He and girlfriend Mary have just received starter cultures from GEM Cultures in California. They plan to make their own koji and misos this year, for their own use and the use of a small group with which they work. This group is mainly interested in psychic development.

3758. *Soyafoods (ASA, Europe)*. 1994. U.S. soyfoods consumption predicted to grow. 5(2):3. Summer.

• **Summary:** A U.S. study titled *An economic analysis of the use of soybeans as human food* predicts that domestic increases in consumption of soyfoods could use an additional 100 to 240 million bushels of soybeans each year. The study was conducted for the North Central Soybean Research Program by researchers at Agricultural Education and Consulting in Savoy, Illinois (Phone: 217-352-1190).

The study found that the following food categories which have the greatest potential to use soya as an ingredient (listed in descending order of projected use levels): (1) Flour products—bread, bakery products, pasta, and pizza dough. 2. Meat products—ground beef and processed meats. 3. Dairy products—liquid milk replacements, processed cheeses and yogurt. 4. Snack foods—crisps, extruded snacks, snack nuts and meat snacks. 5. Soyfoods—tofu, soymilk, tempeh, soy sauce, and miso. 6. Fresh vegetables—green vegetable soybeans.

However there will be tradeoffs. For example, increased use of soya to make meatlike products will ultimately lead to less need for soybean meal to feed livestock animals. But overall, the researchers believe that net crop income, at least

for the North Central Region of the United States, will rise from nearly 8% to over 30%.

3759. *Gourmet*. 1994. The last touch: Salad dressings. 54(6):176. Aug.

• **Summary:** One of the recipes, Miso vinaigrette dressing, calls for red miso.

3760. Wang, Huei-ju; Murphy, Patricia A. 1994. Isoflavone content in commercial soybean foods. *J. of Agricultural and Food Chemistry* 42(8):1666-73. Aug. [28 ref]

• **Summary:** Isoflavones are one class of phytochemicals and are found in soybeans in large amounts. Twelve isomers of isoflavones were quantified: three aglycons and nine glucosides. Soybeans contain two major isoflavone aglycons, genistein and daidzein, and a minor one, glycitein. In the seed, the isoflavones are present primarily as β -glucosides. The nine glucosides are: daidzin, genistin, glycitin; 6"-O-acetyldaidzin, -genistin, or -glycitin; and 6"-O-malonyldaidzin, -genistin, or -glycitin.

This paper gives data on the concentration and distribution of isoflavones in 29 commercial soybean foods, grouped into three types: Soy ingredients, traditional East Asian soy foods, and second-generation soyfoods. Four values are given for each product in micrograms per gram, on an "as is" basis: daidzein, genistein, glycitein, and total isoflavones.

(1) Soy ingredients: Vinton 81 90: 600, 954, 82, 1636. Vinton 8191: 240, 648, 107, 995. Green vegetable soybeans: 546, 729, 79, 1354. Soy flour: 226, 810, 88, 1124. TVP #1: 473, 707, 202, 1382. TVP #1: 484, 702, 156, 1342. Soy isolate #1: 77, 273, 115, 466. Soy isolate #2: 115, 392, 102, 610. Soy isolate #3: 122, 393, 99, 615. Soy concentrate: trace, 13, 42, 56.

(2) Traditional soy foods: Roasted soybeans: 563, 869, 193, 1625. Instant soy beverage #1: 311, 617, 109, 1037. Instant soy beverage #4: 407, 665, 111, 1183. Tofu (73% moisture): 146, 162, 29, 337. Tempeh: 273, 320, 32, 625. Bean paste (ko chu jang in Korea): 272, 245, 77, 593. Fermented tofu: 143, 224, 23, 390. Honzukurimi miso (rice and soybeans): 79, 177, 38, 294.

(3) Second generation soyfoods: Soy hot dog: 34, 82, 34, 150. Soy bacon: 28, 69, 24, 122. Tempeh burger: 64, 196, 30, 289. Tofu yogurt: 57, 94, 12, 164. Soy Parmesan: 15, 8, 41, 65. Soy Cheddar cheese #1: 2, 5, 27, 34. Soy Cheddar cheese #1: 34, 40, 35, 109. Soy mozzarella cheese: 11, 36, 30, 76. Flat soy noodle: 9, 37, 39, 85.

Some manufacturers use ethyl alcohol extraction to prepare soy protein concentrates; this process removes a substantial portion of the isoflavones. The products examined for this paper which had the lowest content of isoflavones (all less than 100 micrograms per gram) were: soy cheddar cheese A 34, soy protein concentrate 56, soy Parmesan 65, soy mozzarella cheese 76, flat noodle 85.

"Proposed anticarcinogenic doses of soybean isoflavones range from 1.5 to 2.0 mg per kg of body weight per day (Hendrick et al, 1994). There are a number of soy food choices that will fit this dose requirement without the need to consume unusual amounts of these soy foods."

Isoflavone standards and extraction of isoflavones: Authentic standards of daidzein and genistein were obtained from commercial sources (ICN Pharmaceuticals, Plainview, New York, and Calbiochem Corp., San Diego, California). Daidzein and genistein were from previous work in the laboratory (Murphy 1981). The starting material for extracting isoflavones was defatted soybean flour. It was, in turn, extracted with acetonitrile (ACN) and 0.1 N HCl [hydrochloric acid] (1:5:1 w/v/v) according to the procedure of Murphy 1981. Address: Food Science and Human Nutrition, 2312 Food Sciences Building, Iowa State Univ., Ames, Iowa 50011.

3761. *Weight Watchers Magazine*. 1994. Pacific heights. 27(8):42. Aug. *

• **Summary:** Asian foods. Includes Recipes.

3762. Andoh, Elizabeth. 1994. Where Tokyo's young crowd likes to eat: Choice tables. *New York Times*. Sept. 18. p. 165.

• **Summary:** A look at popular restaurants in Tokyo. "One sampler is made up of five rolls of sushi—one each of tuna, omelet, natto (sticky fermented [soy] beans), mentaiko (spicy cod roe) and fresh ama ebi (shrimp).

Also mentions: "chilled cubes of silky bean curd," "miso-thickened broth with wakame, or sea tangle..." "fried bean curd" "sweet adzuki beans."

3763. Business Trend Analysts, Inc. 1994. The health and natural food market: Past performance, current trends, and opportunities for growth. 2171 Jericho Turnpike #342, Commack, NY 11725. 325 p. Sept. Price \$995.00. *

• **Summary:** Chapter 3 of this report, the first of seven chapters that discuss individual product categories, is titled "The Market for Soy Foods: An in-depth analysis of historical, current, and projected sales. Trends in the U.S. market for soy foods. Manufacturers' total sales of soy foods. Manufacturers' sales of soy foods, by distribution channel. Total retail sales of soy foods. Retail sales of soy foods, by distribution channel. Retail sales of soy foods, by type: Soy sauce, tofu, second generation, soymilk, miso, soy nuts, tempeh. Worldwide soybean production, total and per capita. U.S. production of soybean oil. New product introductions in the market for soy and vegetarian foods, including names of manufacturers, brand names, and product descriptions.

Under "Report Highlights and Special Features" we read that after the 3-year recession, most product categories posted strong gains, but "several segments failed to cash in on the growth bonanza. Manufacturers' sales of soyfoods

were up a meager 2½%, while the market for frozen health foods declined slightly... One-third of consumers under the age of 35 feel it is extremely important that the food products they purchase are natural; the percentage is even higher among older consumers. Over 40% of adults believe they will contract heart disease or cancer.” Today 68% of adults are overweight, up from only 58% a decade ago.

Overall report Contents: 1. Executive summary. 2. Overall market dynamics (including Soyfoods). 3. The market for soy foods. 4. The market for herbal teas. 5. The market for dairy foods. 6. The market for grains and cereals. 7. The market for frozen foods. 8. The market for snack foods. 9. The market for groceries. 10. The health food consumer. 11. The health/natural food store industry. 12. Competitor profiles. 13. Industry directory. Address: Commack, New York. Phone: 516-462-2410.

3764. Legume, Inc. 1994. Healthy vegetarian meals from Legume (Ad). *Natural Foods Merchandiser*. Sept. Insert glued in after p. 34.

• **Summary:** The full-page color ad begins: “Legume means vegetarian. Whether ‘vegetable’ in French, or ‘bean’ in English, the Legume name stands for the finest in vegetarian cuisine. And now, Legume’s pledge to quality, organic ingredients, convenience and great taste comes in energy efficient, recyclable cans.” A color photo shows the six products in the Legume Healthy Vegetarian line (in 15 oz cans): Chicken Style Soup, Chicken Style Chili, Beef Style Stew, Beef Style Soup, Beef Style Tamales, Italian Polenta. All products except the Polenta contain wheat gluten and miso.

Talk with Chandri Barat of Legume. 1995. Sept. This new line of canned entrees was launched in Dec. 1994. All products in the line are vegan; most products contain wheat gluten and miso. The new labels will state: “no animal products” rather than “vegan.” The present terms such as “chicken flavored meat analog” will be replaced by “flavored wheat gluten (water, wheat gluten, miso,” etc.). The company that makes these products is an old-fashioned, established one. The products are now starting to be sold in supermarkets, in the natural/health foods section. Address: P.O. Box 609, Montville, New Jersey 07045.

3765. Kennedy, J. Robert. 1994. How rice syrup and grain syrup came to America from Japan (Interview). *SoyaScan Notes*. Nov. 14. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Chico-San was launched on 6 March 1962 in Chico, California, as a retail store and a wholesale business, capitalized with \$10,000. The first Yinnies grain syrup (rice and barley) and Yinnies (rice syrup candies) that Chico-San sold in America were made in Chico-San’s food plant at 1262 Humboldt Avenue, in Chico, California, and sold in about 1971. The Yinnies syrup was on the market about 2-3

months before the candy. The candy was made by boiling down the syrup a little more, then pulling it like taffy using a regular taffy-pulling machine (Bob’s idea, never conceived of in Japan). So already Bob had developed two American innovations: Growing koji on brown rice, and pulling Japanese-style rice candy to give it a texture like taffy. Bob recalls that the demand for the Yinnies syrup (which was used as an all-purpose natural sweetener, especially by macrobiotics) was greater than the demand for the Yinnies confection. These macrobiotic products were made using the traditional Japanese koji process, except that the koji was made from organically-grown brown rice, grown by the Lundberg Brothers at Wehah Farms in Northern California.

Bob used to visit Japan 2-4 times a year in the early 1970s, because Chico-San was importing a large number of Japanese food products and Bob went to visit the farmers and suppliers. During these visits, Lima Ohsawa took him to visit several traditional Japanese shops that made rice syrup (*amé* or *mizuumé*) from koji. Bob observed carefully and took a few notes, which may still be in his diaries (which are in storage). He may have ordered a few samples from Japan, but they were not sold in America.

Bob dabbled and experimented with making rice syrup for at least two years before the product was launched commercially. During this time he learned how to make koji and rice syrup mostly from Mr. Junsei Yamazaki who had emigrated to Chico from Japan in 1963 (sponsored by Bob Kennedy) to make miso and natural shoyu for Chico-San. After graduating from Tokyo Agricultural University, Yamazaki had been a rice farmer in Japan for 17 years. In 1964 he began his first experimental production of miso and shoyu in Chico. His first large batches were made in mid-1970. Since he had to make koji for both miso and shoyu, it was an easy step to make rice koji for amazake. The amazake was cooked, filtered (to removed the fiber), then simmered slowly to yield rice syrup—a slow but relatively simple process. By the late 1960s or early 1970s Yamazaki was making small batches of rice syrup on an experimental basis in the back room at the Humboldt Ave. plant. By 1971 production of rice syrup was in full swing; it was sold in a 12 oz. glass jar and labeled “Yinnies Grain Syrup.”

On 14 Sept. 1972 disaster struck. A fire at the Chico-San plant and warehouse at 1262 Humboldt Ave. destroyed 90% of the company’s natural food inventory worth approximately \$350,000. The company moved to 2244 West First Street in Chico and struggled to get back on its feet. For several months, they continued to make Yinnies syrup from koji in the traditional way in a newly-built koji room. But the demand for this syrup was much greater than the amount that could be made using the traditional koji process. Bob had a friend named Carl Abbott, who worked at a nearby nut plant (Continental Nut Co.) and was also a very bright food chemist. So right after the fire Bob asked

Carl if he could do some research to find a way to expand output of rice syrup using natural enzymes with organically grow brown rice to maintain the natural quality and without addition of chemicals—such as caustic chemicals. Carl met with experts at Miles Laboratories (who had never worked with brown rice before), determined the best commercial enzymes, then made adjustments in cooking times and temperatures to fit the needs of the enzymes. Bob is not sure, but he recalls, two enzymes were purchased from Miles: Alpha-amylase to liquefy the rice, and gluco-amylase to break down the rice carbohydrates into sugars (mostly maltose). When Chico-San switched over to using commercial enzymes with brown rice to make rice syrup, they discontinued the use of koji.

In 1971 and 1972 sales of Chico-San's rice cakes began to increase dramatically. After the 1972 fire, it took the company about a year to get back to manufacturing any significant volume of rice cakes. By 1973 the demand for rice cakes was growing like mad. Bob had to build new and better machines that could keep up with the demand. Sales of Yinnies syrup were also growing nicely. Then the company ran out of space at the location on West First Street. So on 1 Jan. 1979 the company moved its Rice Cake machines back to the original address at 1262-1266 Humboldt Ave.—which had been renovated after the fire, and on which Chico-San now had a 10-year lease. Chico-San retained 6,000 square feet of its location on West First Street for the manufacture of Rice Syrup. At about that time Bob met Pat and Cheryl Mitchell, owners of California Natural Products (CNP) in Manteca, California. They were making various syrups, but definitely not from rice.

Note: Robert Nissenbaum of Imagine Foods (23 Nov. 1994) strongly disagrees with this 1979 date. He is certain that in the summer of 1984 he visited the Chico-San plant that was making rice syrup. It was located in Chico, in a sort of garage at the end of an alley. He was buying rice syrup from Chico-San at the time for use as a sweetener in amazake he was making in Missouri, and he wanted to find out why the quality was so inconsistent. He thinks that CNP first began making rice syrup under contract for Chico-San after August 1984.

Bob Kennedy decided to contract with CNP for production of all his Rice Syrup. Bob sold all Chico-San's Yinnies syrup equipment to Pat and Cheryl; this equipment was compatible to whatever they were doing. He also told them all his secrets for making brown rice syrup and had them sign a non-disclosure agreement and a contract which stated that CNP would make rice syrup only for Chico-San. Chico-San guaranteed in writing to buy a specified amount of rice syrup. "Everything went fine until I sold the business to Heinz."

When Heinz bought Chico-San on 16 Nov. 1984, they wanted it all or nothing. If they decided after six months that there were parts of the business they did not want, Bob

could buy those parts back. Chico-San carried \$100,000 to \$150,000 inventory of Japanese food imports. Bob expected to be able to buy back the Yinnies syrup business if Heinz decided not to pursue it, but the contract wording, unfortunately for Bob, allowed Heinz to essentially trade the rice syrup business to CNP. Bob lost track of what was happening between Heinz and CNP. He was supposed to work for Heinz as a consultant for about a year, but he didn't like it so he asked to be released from that obligation—which they did after about 3 months. "If I had had a crystal ball at the time, I would have kept the rice syrup business, but at the time I did not think much about it. I was really a little burned out with Chico-San. I was doing 10-12 hours a day for years. It was quite a relief to be free of it."

Bob Kennedy knew about Robert Nissenbaum, who was developing Rice Dream non-dairy ice cream before Chico-San was sold to Heinz. Chico-San was shipping hydrolyzed rice (made by CNP) to Robert Nissenbaum before Nissenbaum was aware of CNP. [Note: Robert Nissenbaum—see interview of Nov. 1994—says he bought only rice syrup from Chico-San, and he became aware of CNP at about the same time as Chico-San, before CNP was processing rice]. Then Chico-San was sold to Heinz in Nov. 1984 and Rice Dream (made with rice beverage from CNP) started to be manufactured in Palo Alto, California, in Jan. 1985. Address: Chico, California. Phone: 916-891-0970.

3766. Gold Mine Natural Food Co. 1994. *Macrobiotic, organic and Earthwise products for you and your home* (Mail order catalog and price list). San Diego, California. 64 p. 28 cm.

• **Summary:** Soy-related products include organic black soybeans, organic yellow vegetable soybeans, organic aduki beans, Ohsawa soy sauce, Ohsawa tamari, South River miso, Junsei Yamazaki miso, Ohsawa yuba, Ohsawa organic dried tofu, and kuzu. Address: 3419 Hancock St., San Diego, California 92110-4307. Phone: 1-800-475-3663.

3767. Shinshu-Miso Research Institute. 1994. *Report of the Shinshu-Miso Research Institute* No. 35. p. 1-100. [Jap; eng]
Address: Nakagosho 469-6, Nagano-shi 380, Japan.

3768. Fryer, Anne-Marie; Fryer, Wil. 1994. *Das kleine Buch ueber Salz, Miso, und Shoyu* [The little book about salt, miso, and shoyu]. Voelklingen, Germany: Ost-West-Bund Verlag. Illust. No index. 15 cm. [Ger]*

3769. Grogan, Bryanna Clark. 1994. *The (almost) no-fat cookbook: Everyday vegetarian recipes*. Summertown, Tennessee: The Book Publishing Co. 192 p. Index. 21 cm. [10 ref]

• **Summary:** This low-fat vegan cookbook contains a wealth of soy-related recipes, including 27 recipes that call for tofu. Address: Denman Island, east of Vancouver, British Columbia, Canada.

3770. Miyako Oriental Foods, Inc. 1994. Cold Mountain Miso: Ethnic versatile seasonings (Portfolio). Baldwin Park, California. Six inserts. 31 cm.

• **Summary:** The portfolio jacket was printed in about 1993 or 1994. The six inserts (all leaflets), printed over a period of ten years, include: (1) "Miso: Made from organic soy bean" (March 1995; two sides, color photo of four products on front, recipes on the back). (2) "Cold Mountain Miso: A traditional taste of Asia to the modern world" (March 1997; two sides, color photo of four products on front). (3) "Miso: Made from organic soybeans" (1983; two sides, printed brown on light beige). Gives specifications for three types of miso. (4) "Miso: Made from organic soybeans" (1983; two sides, printed brown on tan). Gives specifications for Cold Mountain dehydrated miso. (5) "Fermented black bean paste: Versatile seasoning" (1995; two sides, printed brown on light blue). Gives specifications for Cold Mountain fermented black bean paste. Ingredients: Black soybean, rice, salt, water, *Aspergillus oryzae*. (6) "Dehydrated fermented black bean paste: Versatile seasoning" (1996; two sides, printed brown on light gray). Gives specifications for Cold Mountain dehydrated fermented black bean paste. Address: 4287 Puente Ave., Baldwin Park, California 91706. Phone: 818-962-9633.

3771. Ontario Soybean Growers' Marketing Board. 1994. New uses for soybeans (Leaflet). Ontario, Canada. 2 p. Undated. 28 cm.

• **Summary:** Contents: Soy diesel. Premium building materials (such as Environ). Industrial solvents. Anti-chronic disease agent (isoflavones and protease inhibitors from tofu, miso, and tempeh). Road dust suppressants. Asphalt and concrete release agents. Lubricants and hydraulic fluids. Biodegradable plastic utensils. Soy oil based inks. Soy textile fibres (can be used for erosion control on landscape projects, for peat pots, fishing nets, and "soy silk" in clothing). Soy adhesives (for plywood products and composites). Address: Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

3772. Stepaniak, Joanne. 1994. The uncheese cookbook: Creating amazing dairy-free cheese substitutes and classic "uncheese" dishes. Summertown, Tennessee: The Book Publishing Co. 192 p. Index. 21 x 18 cm. [16 ref]

• **Summary:** This is an excellent, very creative cookbook with a poor index, developed especially for people who, due to choice or chance, have eliminated cheese from their diet. The recipes are well designed to satisfy any compelling cheese fantasies you may have.

Contents: Introduction. Cheezes, spreads & dips. Soups and chowders. Fondues & rarebits. Sauces, pestos & dressings. Pizzas, polentas & breads. Quiches, casseroles & entrées. Sweets. Glossary. Mail order suppliers of natural foods.

Tofu is used as a major ingredient throughout this cookbook. For example: Muenster cheese (p. 23). Chunky Roquefort dip & dressing (p. 24). Tofu cottage cheese (p. 27). Tofu ricotta (p. 27). Betta feta (p. 28). Brie (p. 31). Liptauer käse (p. 32). Boursin cheese (p. 33). Tofu cream cheeze—rich or light (p. 34-35). Kefir cheeze (p. 36). Garbanatto (p. 39). Hot Parmesan artichoke dip (p. 41). Pecan cheese (p. 42). Egg-free (vegan) mayonnaise (p. 89). Tofu sour cream (p. 90). Calzones (p. 100-10). Tofu tetrazzini (p. 122) Tofu devonshires (p. 140). Mattar paneer (p. 146). Tofu cheezecakes & cream pies (ten varieties, p. 164-74). Tofu whipped topping (p. 172).

Many other recipes also call for "low-fat, dairy-free (vegan) milk" which is defined (p. 183) as "a generic term which refers to any creamy beverage such as soymilk, nut milk, or rice milk that is produced from non-animal products.

Interesting products in the glossary (p. 180-184) include: Agar, barley malt syrup, brown rice syrup, liquid aminos, mirin, miso, seitan, tahini, tamari, tempeh, toasted sesame oil, tofu, umeboshi plum paste, vegan milk, yeast—nutritional (*Saccharomyces cerevisiae*).

3773. **Product Name:** [Tofu Quiche (With Smoked Tofu)].

Foreign Name: Tof'quiche—Au Tofu Fume.

Manufacturer's Name: Gaia.

Manufacturer's Address: 11, rue François Chancel, 31190 Auterive, France. Phone: 61 50 67 39.

Date of Introduction: 1994?

Ingredients: Tofu*, soymilk* [filtrat de soja], smoked tofu*, flour T65*, rolled oats, sunflower oil*, shoyu [sauce de soja], miso [pâte de soja], aromatic herbs. * = Organically grown.

Wt/Vol., Packaging, Price: 130 gm.

New Product—Documentation: Color leaflet (undated, 6 panels) sent by Jean-Luc Alonso. 1994. May 16. *Une gamme de pains spéciaux, goûters et desserts naturels, 100% végétaux, biologiques et sans adjonction de sucre* [A line of special breads, snacks, and natural desserts. Made purely from plants, organically grown, and without the addition of sugar]. The printed address has been crossed out; the new address is: 7, rue du Mail, 81300 Graulhet, France. Phone: 63 42 16 03. The following products are included in the leaflet (the label of each is shown): Tof'délice—Caroube (A fresh carob pastry based on tofu). Tof'quiche—Au tofu fume (Tofu quiche based on smoked tofu). Friand au seitan (Seitan appetizer).

3774. Rosas, Juan Carlos; Young, Roberto A. 1994?. El cultivo de la soya. Quinta edición [The cultivation of soya. 5th ed.]. *Departamento de Agronomía (Zamorano, Honduras), Publication No. AG-9603*. 68 p. Undated. [Spa]

- **Summary:** Contents: 1. Overview: Economic importance, chemical composition, history, taxonomy. 2. Morphology of the soybean plant. 3. Physiology of the growth and development of the soybean plant: Stages of development. 4. Environmental factors that affect the cultivation of soya: Soil, water, irrigation, light / photoperiod, temperature, period of growth. 5. Practical cultivation: Preparation of the soil, time of planting, density of planting, quantity of seeds, systems of cultivation, control of weeds (methods of weed control, chemical control). 6. Mineral nutrition of soybeans (and inoculation). 7. Diseases that affect the cultivation of soybeans and their management: Bacterial, fungal, viral, other, seed treatment. 7. Insects that attack soybeans. 8. Harvest and storing. 10. Improvement of soybeans. 11. Processing and utilization: Industrial processing (extraction of oil, soy flours, soy protein concentrates (*concentrados proteicos de soya*), soybean cake). Direct consumption: In the Far East, the soybean is consumed in the form of fermented and non-fermented foods. Fermented foods include shoyu, miso, mato [sic, natto], and tempeh, while non-fermented foods include soymilk (*la leche de soya*), tofu, yuba (*juba*), and kinako. 12. The cultivation of soya in Honduras (history).

In 1972, the Ministry of Natural Resources (*Ministerio de Recursos Naturales*) reported the initiation of commercial soybean production on a small scale in various departments of the country (Olancho, El Paraíso and Comayagua). Three varieties were used at that time: Biloxi, Hardee and Jupiter. However, before these reports were made, at the Panamerican Agricultural School (*la Escuela Agrícola Panamericana (EAP)*), some hectares had already been planted with the varieties Jupiter and Pelican. Discusses additional developments in 1974, 1982, 1986, 1987, and 1988. Address: 1. PhD; 2. PhD.

3775. Rower, Howard. 1995. History of The Infinity Company and Infinity Foods. Part I (Interview). *SoyaScan Notes*. Jan. 22. Conducted by William Shurtleff of Soyfoods Center.

- **Summary:** Howard grew up in a Jewish family in Boston, Massachusetts. In about 1964 or 1965 he got interested in macrobiotics. John Hammond, his next door neighbor and a blues singer, was involved in macrobiotics and he told Howard about it one day. So Howard went to the Ohsawa Foundation in New York City, which was run by Irma Paule in those days. He bought some groceries from her and began practicing macrobiotics. George Ohsawa came to New York in 1965 for a summer camp (See Kotzsch 1985, p. 137) and Howard met him. "Ohsawa said he was looking for a guy like me and he wanted me to grow rice in New

York state. I found out that was a pretty impossible task so I asked him to pick something easier. He said 'Okay, grow kuzu.' I said, 'Okay, when you get back to Japan, send me some kuzu plants.' And he said, 'Oh no. That's not the Zen way. The Zen way is for you to do it yourself, now.' I spent about 6 months finding out what a kuzu plant was. Finally I got some old agricultural bulletins that described how good kuzu was, then later described how bad it was. I finally managed to find somebody in the South who dug up some kuzu in the winter and sent it to me. I grew it in my garden in New York. The next year when Ohsawa came, I sat him down under this huge kuzu vine, like an arbor, at the back of my house. I said 'There's the kuzu you wanted.' I took some of the kuzu roots and actually extracted kuzu from them and put it in a test tube. I showed it to Ohsawa, told him it was the first kuzu ever extracted in New York, and gave him the test tube. He was astonished and delighted. He said, 'Now we have to begin to work. I knew I was right. You *are* the man I'm looking for. You must begin to import macrobiotic food products from Japan at once. I will ship them to you.' So we started this relationship and in 1965 I began importing foods from Ohsawa in 1965. He used to send me tamari [soy sauce] and miso in beautiful little 18-liter wooden kegs, tied with rope." Howard sold these products to health food stores and to Michio Kushi.

Also during 1965 Howard read a book about grain and he got very interested in freshly-ground flour. A grain of wheat is alive, but as soon as you mill it, it dies. After 5 days the taste and nutritional value have both declined. So people should mill flour, then keep it refrigerated, and use it as soon as possible. So Howard bought a little home flour mill, and set it up in his house. He ground some wheat flour, his wife made some bread, and they really liked the bread. They served the bread to friends who came to dinner, then they wanted fresh flour, so he made flour for them. Pretty soon he was delivering flour to people, then a health food store wanted to sell it, so he had a label made, even though he didn't have a company name at all. So he threw the *I-Ching* to help him choose a name. The hexagram was "Perseverance Furthers." He was going to name the company "Thomas J. Perseverance" so it would sound like a real person. His brother, who was visiting at the time, said "That's a stupid name. You might as well call it Infinity if you're going to have a dumb name." Howard liked the name Infinity, and decided to name his company The Infinity Co. However, later he did have some labels printed on which Perseverance Foods was the company name—just for fun. He once had a lawyer named Bill Pratt, so he sold "William Pratt Old Barrister" brand honey. One of his children pinched his thumb in the flour mill at home and his wife became concerned that a more serious injury could happen. Moreover everything in the house began to dusted with a thin layer of flour.

Howard started The Infinity Company in about 1965 at 188 Duane Street in New York, in the lower Manhattan neighborhood named Tribeca. It distributed, imported, and manufactured natural foods. George Hannides (pronounced HAN-uh-dees) came to work with him, and he later became a minor working partner. the Infinity Food Company in New York.

Howard had a friend who practiced karate in a loft at 188 Duane Street, and his landlord gave Howard a small space that had a desk in it on another floor of the same building. So Howard moved in his mill and started doing business as The Infinity Company. Within 2-4 years Howard incorporated the company and changed the name to The Infinity Food Company. Then the health food stores began asking Howard to make other kinds of fresh flour, such as rye flour or corn meal. He did, and soon the product line had expanded to 250 different products. Eventually he had two 30-inch flour mills plus a 24-inch mill and some little 8-inch ones. He had a room full of mills, and milling was a large part of Infinity's manufacturing business. In addition, at one point, the company was getting truckloads of dried fruit and of fruit juices from California, plus jams and jellies made without sugar from the City of Industry, California.

"Michio Kushi was operating out of a house on Harvard Square in Cambridge. He was selling groceries in the hallway. He had started out in New York, then he ran into some kind of terrible financial trouble. He fled to Cambridge to avoid his creditors. His wife, Aveline, ran the business and he was the guru. In the early days, Michio was Erewhon's biggest asset. He used to go around and lecture, then people would say 'Where can we get this food,' and he's say 'Go to Erewhon.'" Howard is not sure whether or not he ever sold products to Erewhon in the early days. Howard is not sure whether or not he began importing foods before Erewhon. "Erewhon didn't have any kind of an operation going on when I had my warehouse. They became important later. In the beginning, they may have been getting some products from Ohsawa in Japan at the same time I was. Erewhon was located in the Kushi house in Cambridge, where a few of the real loyal macrobiotics lived with the Kushis and helped to pay the rent. They had sort of a grocery display in the hall, and they sold some foods. In the early days, Erewhon bought miso, tamari and other typical macrobiotic products from Infinity." Continued. Address: 84 MacDougal St., New York, NY 10012. Phone: 212-982-3620.

3776. Drosihn, Bernd. 1995. The soyfoods market in Germany. New developments at Viana Naturkost (Interview). *SoyaScan Notes*. Jan. 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bernd's company, Viana, is now one of the two largest tofu manufacturers and soyfoods marketers in Germany. The other large company is Life Food in Freiburg.

Their brand name is Taifun, and they have been growing rapidly for the last two years.

The tempeh market is very small in Germany. There are only two manufacturers: Hamburger Tofu Manufaktur (Christian Nagel, in Hamburg) and Viana. There is now only one real miso manufacturer in Germany: Kanta Kozaki GmbH in Urbach near Stuttgart. Viana stopped making miso 2 years ago, however Viana sells miso made by Kanta Kozaki in glass jars under the Viana label. A Japanese man (Hiroshi Kozaki) and a German man (Karl Selgmann) run the company together. They have been making miso for 3-4 years. Viana also sometimes makes koji for Kanta Kozaki.

Bernd and Albert Hess are planning to attend the Natural Products Expo West in Anaheim, California, March 10-12, 1995. Address: Founder and president, Viana Naturkost GmbH, Willi Graf Str. 88, 53881 Euskirchen-Kuchenheim, Germany. Phone: 02251-56076.

3777. Mindell, Earl. 1995. *Earl Mindell's soy miracle*. New York, NY: Simon & Schuster. A Fireside Book. 256 p. Index. 22 cm. [97 ref]

• **Summary:** Contents. Part I: Soy—The miracle food. 1. The soy story: explaining the miracle. 2. Soy by any other name. 3. Does soy prevent cancer? 4. Heart and soy. Part II: Soy for special needs. 5. Just for women: Rx for menopause and osteoporosis. 6. Just for men: Rx for prostate problems. 7. Kids, cancer, and heart disease. 8. Tips for vegetarians. Part III: Not by soy alone. 9. Thirty-seven miracle foods from the Pacific Rim. Earl's pearls: A guide to vitamins and minerals. Part IV: Get more soy in your life. 11. Savvy substitutions. 12. Cooking with soy. 13. Breakfast the soy way. Part V: Seventy super soy recipes (p. 149-230). Glossary. Resources. Selected bibliography.

Pages 12-13 note that soybeans are an abundant source of many different types of phytochemicals, including isoflavones, genistein, protease inhibitors, and phytic acids.

Chapter 2 describes the different types of soy foods. Traditional soy foods: Soy milk, tofu (firm tofu, silken tofu, yakidofu, koyodofu [sic, koya-dofu]), okara, natto, tempeh, miso, soy sauce, kinnoko [sic, kinnako] flour. Soy protein products: Soy protein concentrates, soy protein isolate, soy flour, texturized soy protein, meat analogs. Other soy products: Soy fiber, soybean oil, lecithin. Questions about soy foods. Page 33 asks the question: "If phytochemicals in soybeans are so healthy, why can't they be extracted from food and made into a pill like a vitamin?" Answer: Researchers are not yet certain which phytochemicals are the most important. "There may even be other beneficial compounds in soy that have yet to be identified. Your best bet is to eat the real food." A section titled "Soy's top ten benefits" (p. 36-38) discusses: 1. Antioxidant. 2. Breast cancer. 3. Cholesterol lowering. 4. Colon cancer. 5. Hip fracture. 6. Hot flashes. 7. Immunity. 8. Kidney disease. 9. Lung cancer. 10. Prostate cancer.

Chapter 3, titled "Does soy prevent cancer?" discusses six compounds which cancer researchers believe may be effective in cancer prevention: Isoflavones, genistein, daidzein, protease inhibitors, phytic acid, and saponins. A long section later in the chapter discusses each of these, with special emphasis on genistein.

Note: The author has also written *Earl Mindell's Herb Bible* and *Earl Mindell's Food as Medicine*. He is a newcomer to this field. This book may appeal to those who are looking for miracles from the foods they eat. Most of the information contained in this book can be found in Mark and Virginia Messina's outstanding *The Simple Soybean and Your Health* (1994), and the *First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease: Proceedings from a symposium held in Mesa, Arizona, on February 20-23, 1994*, published in full in *The Journal of Nutrition* Vol. 125, No. 3S, March 1995 Supplement. It was from this symposium and the outline published before the symposium that Mindell got his idea for this popular book.

Dr. Mindell is an R.Ph. (Registered Pharmacist) with a PhD in Nutrition from Pacific Western College in Renton, Washington.

According to a review of *Earl Mindell's New and Revised Vitamin Bible*, by James A. Lowell, PhD. (Nutrition Forum, June 1986) "Mindell claims to hold valid credentials in nutrition. Although he does have a bachelor's degree in pharmacy from the University of North Dakota, his Ph.D. is from the University of Beverly Hills, an unaccredited school which lacks a campus or laboratory facilities." Mindell helped to found the Great Earth chain of vitamin and health food stores, numbering about 200 in 1986, America's second largest such chain. Address: R.Ph, PhD, registered pharmacist and Prof. of Nutrition at Pacific Western Univ. in Los Angeles. He lives in Beverly Hills, California.

3778. Minnesota Soybean Growers Association; Minnesota Soybean Research & Promotion Council. 1995. *Cooking with soy*. Revised 2nd ed. North Mankato, Minnesota. 48 p. Jan. 22 cm.

• **Summary:** Contents: Introduction. Tofu facts. Soy milk facts. Soy flour facts. Miso facts. Tempeh facts. Texturized soy protein facts. Meat analog facts. Soy oil facts. Whole (dry) soybean facts. Whole (green) soybean facts. How to cook whole soybeans.

Recipes: Appetizers & snacks. Dips & dressings. Beverages. Salads & soups. Breads. Main entrees. Cakes, cookies & desserts. Substitutions.

Talk with Christie Metzger of the MSRPC. 1996. Jan. 4. The revised edition of this book was published in Jan. 1995; the first edition was published in March 1994. Address: 360 Pierce Ave., Suite 110, North Mankato, Minnesota 56003. Phone: 507-388-1635.

3779. **Product Name:** Vegan Cajun Burger (On a Bun), and Cajun Tofu Sloppy Joe (The Filling).

Manufacturer's Name: Soy Devine.

Manufacturer's Address: 1881 Fieldbrook Road, Arcata, CA 95519. Phone: 707-849-8430.

Date of Introduction: 1995. January.

Ingredients: Processed organic tofu [frozen], tomato sauce, onions, honey, mustard, cider vinegar, safflower oil, tamari (Westbrae), peanut butter, garlic, miso, spices (incl. paprika, cayenne, allspice).

New Product-Documentation: Talk with Mara Devine.

1995. June 1. Cajun Barbecue Style was first introduced in 1987. In Jan. 1995 it was renamed and divided into two products: Vegan Cajun Burger, and Cajun Tofu Sloppy Joe. The latter product is sold as a product in its own right, but also serves as the filling for the burger. She moved from Miranda to Arcata, California, in June 1993.

3780. Mann, Sue. 1995. Re: Tempeh, tofu, and miso in Ecuador. Letter to William Shurtleff at Soyfoods Center, Feb. 4. 4 p. Typed, with signature, and handwritten.

• **Summary:** A woman, who is about to get some kind of degree in soyfoods/nutrition and who is Quito's top macrobiotic teacher/cook/storeowner, already makes her own tofu and miso, and is interested in tempeh. Sue will be talking with her soon.

"I have been making tempeh for friends, and in about 3 weeks will start moving toward commercial production. With three restaurants waiting and friends no longer willing to take it without paying, prospects are good." She orders a copy of the book *Tempeh Production*, by Shurtleff & Aoyagi, to be sent to Andrew McCallum in Rochester, New York. On a separate handwritten sheet she gives details on 3 commercial soy products from Ecuador and Colombia. Address: c/o Donna Lewen, Cassilla 17-12-578, Quito, Ecuador. Phone: 593 2-570-600.

3781. Arnold, Kathryn. 1995. The joy of soy. *Delicious! (Boulder, Colorado)*. Feb. p. 34-36. [3 ref]

• **Summary:** The soybean "has long been revered by vegetarians as a nutritional powerhouse. However, the real secret is that soyfoods may help prevent disease." They are cancer fighters and good for the heart. A table (p. 36) lists 12 different types of soyfoods and their uses: Tofu, tempeh, okara, miso, natto, TVP, soymilk, soy grits, soy flour, soy cheese, soy sauce, soy yogurt.

Note: This periodical, which began publication in about 1983, is published for natural products consumers by New Hope Communications in Boulder, Colorado. As of March 1998 some 425,000 copies of *Delicious!* are distributed each month to over 900 health food retail stores throughout the United States.

3782. **Product Name:** Barley Miso (Long Term).

Manufacturer's Name: Earth Fire Products Co.
Manufacturer's Address: P.O. Box 92 (Corner of Grove and North Railroad Streets), Gays Mills, WI 54631. Phone: 608-735-4711.

Date of Introduction: 1995. February.

New Product–Documentation: Talk with Bob Ribbens, owner of Earth Fire Products Co. (formerly Traditional Foods Cooperative). 1995. Nov. 1. Long-term barley miso was first sold in Feb. 1995.

3783. **Product Name:** [Sweet Barley Miso, 6-Month Barley Miso].

Foreign Name: Miso.

Manufacturer's Name: Lion Health Food Co.

Manufacturer's Address: Zagorska 12/9, YU-11080 Zemun, Yugoslavia. Phone: +381 11-106073.

Date of Introduction: 1995. February.

Ingredients: Organic barley, organic soybeans, spring water.

How Stored: Shelf stable.

New Product–Documentation: Talk with Don DeBona and Paul Chaplin. 1997. March 20. Two new miso makers in Yugoslavia are Sladjan Randjelovic and his wife, Vladimirka, of Lion Health Food Co. (Zagorska 12/9, YU-11080 Zemun, Belgrade, Serbia / Yugoslavia). Their business card says: "Belgrade, London, and Beijing." Vladimirka is actively involved in the business. They are both very macrobiotic. They already make *mizumamé* (rice syrup or rice malt). Their miso was of fairly good quality. They also make an interesting miso with added shiitake and kombu.

Talk with Sladjan Randelovic. 2001. April 21. He learned how to make miso in Sweden from Tim Ohlund in 1992-93 (he lived in Tim's house for several months) and from Soyfoods Center's books on miso. On 30 May 1992 the United Nations imposed sanctions on the newly reconstituted Yugoslavia as a means of ending the bloodshed in Bosnia; these sanctions have been in effect throughout the life of his business and have made it very difficult for him to order ingredients, sell products, etc. Both his miso factory and sales office are in Serbia; the factory has always been in a small village named Barajevo about 50 km from the center of Belgrade. He first began selling the barley miso he made in Feb. 1995—starting with sweet barley miso (short term), then 6-month barley miso. The next year he sold 18-month barley miso. These were made with all organic ingredients. He uses much of his miso to make Imoplex, a cleansing product that contains shiitake mushrooms, kombu extract, and herbal extract. In 1997 he exhibited his miso and miso products at Biofach in Germany. Neither Sladjan nor Soyfoods Center are aware of any company that made miso commercially in Eastern Europe before he began; thus he was probably the first! Today his home is in Montenegro, very near the Serbian

border. He is married and has three children. A book he wrote about food was published last year. He also makes tofu for his own family.

3784. Messina, Mark; Messina, Virginia. 1995. Soybeans linked to health benefits. *Vegetarian Voice (Dolgeville, New York)* 20(4):10-11. Winter.

• **Summary:** Contents: Introduction. Soy and heart disease. Soy and cancer. Other roles for soy. What if you can't tolerate soy. The whole diet approach.

A table shows the isoflavone content of selected foods: Soymilk (1 cup) 40 mg. Tofu (½ cup) 40 mg. Tempeh (½ cup) 40 mg. Miso (½ cup) 40 mg. TVP, cooked (½ cup) 35 mg. Soy flour (½ cup) 50 mg. Soybeans, cooked (½ cup) 35 mg. Soy nuts (1 ounce) 40 mg. Isoflavones (unlike vitamins) are not destroyed in conventional cooking methods.

3785. *Ontario Soybean Growers' Marketing Board Newsletter*. 1995. 1994 Annual Meeting highlights. Feb. p. 3.

• **Summary:** More than 300 soybean growers, industry and government representatives, and suppliers attended the Dec. 1994 Annual Meeting of the Ontario Soybean Growers' Marketing Board. Bernard Leung (photo shown) of Harcan Kingsoya spoke on soyfood opportunities. Garth Baxter of Maple Leaf Foods expressed his belief that the miso market holds the best potential for expansion of Canada's food soybean exports to Asia. New markets with good potential include Taiwan, South Korea, Indonesia, and the Philippines.

"Frank Daller of ProSoya reported that his company is setting up soymilk production facilities in several locations across Canada. Their strategy is to sell bulk soymilk to dairies for processing and packaging."

The Board reported a financial operating surplus of \$311,225 for the year ending 31 August 1994, and a reduction in Board fees from 90 cents per tonne to 80 cents for the 1994 crop. Address: Box 1199, Chatham, ONT, Canada N7M 5L8. Phone: 519-352-7730.

3786. *Ontario Soybean Growers' Marketing Board Newsletter*. 1995. Japanese miso mission visits Ontario. Feb. p. 4.

• **Summary:** Five Japanese miso manufacturers, who collectively purchase 180,000 tonnes/year of soybeans for their miso requirements, visited Ontario to see for themselves the excellent quality and appearance of Ontario soybeans. These 5 men represent over 1,600 miso manufacturers in Japan. They also met with OMAFRA Minister Elmer Buchanan. Address: Box 1199, Chatham, ONT, Canada N7M 5L8. Phone: 519-352-7730.

3787. *Tufts University Diet and Nutrition Newsletter*. 1995. Scientists spotlight phytoestrogens for better health.

12(2):3-6. Feb.

• **Summary:** This article, which discusses the health benefits of phytoestrogens in detail and portrays soy in a very favorable light, contains a 3/4- page sidebar titled “Is there soy in your future?” Breast cancer is the number two killer of women in America and prostate cancer is the number two killer of men. Some scientists now believe that both men and women can take the same step to reduce their risk of succumbing to these diseases—change their diets to include phytoestrogens. This change of diet will probably also have a profound effect on menopausal symptoms such as hot flashes and mood swings. There are several classes of phytoestrogens: Isoflavones (which “are especially prominent in soy—apparently the most potent food in terms of its estrogen-like effects on the body”), coumestans, and lignans.

“Understanding the hypothesis behind the protective effects of the phytoestrogens in soy and other foods can be a bit tricky, especially when it comes to women, because it relies on seemingly contradictory concepts that have to do with whether a woman is pre- or postmenopausal.”

The sidebar on soy discusses tofu, tempeh, and miso.

3788. Krizstan, Jan. 1995. Re: Work with seitan and soyfoods in Slovenia. Letter to William Shurtleff at Soyfoods Center, March 1. 2 p. Typed, with signature.

• **Summary:** Jan phoned on 6 January 1995, then wrote a long letter dated March 1. His first name is pronounced “Yan.” He was born in 1967 in Ljubljana, the capital of Slovenia, where he now lives. He worked for two years on Slovenian television, then in 1992 he quit because of unhealthy working conditions. He had already been a vegetarian for 2 years and he knew that many people are looking for and need healthy food, but they don’t know how to get it. So he started a small private company named “Izvor” (“The Source”) and in Sept. 1992 started (together with friends) to publish a magazine in Slovenian titled *Bio Novice* (“Bio News”) that would connect these people. The main subjects were growing plant foods in accordance with Nature, healthy diets, ecology, alternative medicine, and the culture of peace and non-violence. “It was very difficult, because we started with almost no money, but we published 15 issues of *Bio News*. In December 1994 we had to stop publishing because of big financial problems.

“One of my friends [Vesna Crnivec] translated some paragraphs from *The Book of Tofu* about preparing home made tofu and made an article. We published her translation, a summary of the Introduction, and some of Akiko’s illustrations in one of the first issues of *Bio News* (See issue 5/6, letnik 1993, p. 40-44). Some readers (especially women) showed great interest in it! Later I translated some paragraphs from *The Book of Tofu* and published them (together with Akiko’s good illustrations) in issues 14 and 15 of *Bio News*. At the end of the article I

gave the address of Soyfoods Center for all people interested in ordering your books.

“Last year I was attracted to making seitan and tofu from organic wheat and soybeans. Mr. Mirko Trampus is my very good friend. He has an organic farm in Metlika (1 km from the border with Croatia, in southeastern Slovenia). He has been growing wheat, soybeans, and daikon organically for the last 6 years with very good results. We decided to make a kitchen in his house for transforming Mr. Trampus’ soybeans, wheat and daikon into tofu, tempeh, natto, soymilk, seitan and pickled daikon.

“A few days before New Year 1995 I visited all Ljubljana’s bookshops, because I wanted to find some information about tofu and seitan. What a surprise! There was your *Book of Tofu*. I found it once again and bought a copy. I was so happy. Not far away I found the book *Cooking with Seitan* by Barbara and Leonard Jacobs, with a foreword by Aveline Kushi.

“Now (at the end of February 1995) we are making about 50 kg of seitan per week by hand. We sell it in some 20 healthy food shops all over Slovenia.” He would like to start making tofu, soymilk, natto, and tempeh, Later he would like to make miso too. “Our aim is preparing 100% vegetarian foods of the highest possible quality, made from organically grown soybeans, wheat, and daikon. Now we need more information. Presently Mr. Trampus grows about 12,000 kg of wheat and 9,000 kg of soybeans per year. Prof. Spanring is our good friend. He helped Mr. Trampus to choose the best varieties of soybeans for making tofu and the wheat with the highest gluten content for seitan. Now we use hard winter wheat. We mill it into flour in our own mill with stones. From 100 kg of wheat flour we get about 23 kg of very dark brown seitan.

“Up until now, all of the starch has been rinsed by hand, but we have constructed an automatic rinsing machine which will be prepared for use very soon. We presently rinse using only warm water at about 30°C. We discard all the starch (putting it on compost heaps on the fields), but later we will use it as an ingredient in cooked soymilk puddings.”

Jan would like to order *The Book of Tempeh*. He is looking for a source of tempeh starter. Tempeh is largely unknown in Slovenia, but he would like to introduce it because it is a healthy food and tastes very good. Address: Mestni trg 22/1, 68330 Metlika, Republic of Slovenia. Phone: (386) 068 59 481.

3789. Azevedo, Chris; Gallagher, Paul. 1995. Trends in Japan’s soybean market. Paper presented at a conference titled “Producing Soybeans for the Soyfoods Market.” 8 p. Held 2 March 1995 at Ames, Iowa. [6 ref]

• **Summary:** The pages and most tables in this report are unnumbered. One table shows per capita annual consumption (in lbs) of soybeans in selected Pacific Rim

countries in 1974, 1984, and 1994, as follows, in descending order of pounds consumed per capita in 1994: Indonesia: 9.2, 14.0, 23.2. South Korea: 21.4, 18.8, 20.1. Japan 11.0, 15.3, 16.7. North Korea: 11.8, 12.2, 11.2. Malaysia: 2.9, 5.2, 10.3. China: 14.7, 13.0, 9.7. Thailand: 1.2, 3.9, 3.9. Philippines: 0.4, 0.5, 0.8. Sources: (1) USDA; (2) U.S. Bureau of the Census, World Population Profile, 1994 and 1984; (3) Statistical Yearbook, Statistical Office of the United Nations, New York, NY.

Another table shows annual soybean consumption in million metric tons in 1974, 1984, and 1994, as follows, in descending order of amount consumed in 1994: China: 5.237, 6.193, 5.350. Indonesia: 0.546, 1.072, 2.105. Japan: 0.716, 0.830, 0.950. South Korea: 0.328, 0.358, 0.410. North Korea: 0.083, 0.109, 0.117. Thailand: 0.023, 0.092, 0.105. Malaysia: 0.015, 0.036, 0.090. Philippines: 0.007, 0.013, 0.025. Source: USDA.

A final table shows the amount of soybeans used (in thousand metric tons) in Japan, by product and total, each year from 1978 to 1993, as follows: Use of soybeans for tofu rose from 486 in 1978 to a peak of 531 in 1984, falling to 492 in 1993. Use for natto rose from 71 in 1978 to a peak of 109 in 1993. Use for miso rose from 182 in 1978 to a peak of 185 in 1980, falling to 173 in 1993. The total rose from 750 in 1978 to a peak of 927 in 1992, falling to 920 in 1993. Address: Iowa State Univ. Phone: 515-294-0160.

3790. Cheney, Susan Jane. 1995. Taking the mystery out of miso: Flavor soup, stew, sauce and more with this versatile seasoning. *Vegetarian Times*. March. p. 90, 92-94.

• **Summary:** Contents: Introduction. How miso is made. Good health helper. A little dab'll do ya. A color photo shows Savory adzuki beans and vegetables with miso. Address: Former Moosewood cook.

3791. **Product Name:** Soy Miracle Ultimate Shake (Chocolate Royale, Creamy Vanilla Almond).

Manufacturer's Name: FreeLife International.

Manufacturer's Address: 354 Woodmont Rd., Suite 5, Milford, Connecticut 06460. Phone: 1-800-882-7240.

Date of Introduction: 1995. March.

Ingredients: Ultra Soy Complex I (Trademark) {An exclusive blend of Supro brand soy protein isolate, soy fiber, soy lecithin, tofu powder, soy flour, tamari soy powder, miso powder, & Cholestatin (Trademark) (mixed soy phytosterols)}, crystalline fructose, complex carbohydrate (maltodextrin), Dutch cocoa powder, natural flavors, xanthan gum, oat fiber, calcium phosphate, magnesium oxide, potassium chloride, siberian ginseng, ascorbic acid, inositol, choline bitartrate, blue-green micro algae, L-carnitine, vitamin E acetate, Spanish bee pollen, apple pectin, citrus bioflavonoid, niacinamide, zinc oxide, invertase (plant enzyme), ferrous fumarate, D-calcium pantothenate, vitamin A palmitate, manganese sulfate,

pyridoxine hydrochloride, riboflavin, thiamine hydrochloride, bromelain, papain, folic acid, biotin, vitamin D-3, potassium iodide, chromium, picolinate, sodium selenate, sodium molybdate, cyanocobalamin.

Wt/Vol., Packaging, Price: 15 oz (240 gm).

How Stored: Shelf stable.

Nutrition: Per one level scoop (14 servings per container): Calories 95, calories from fat 0, total fat 0 gm (0% daily value; saturated fat 00 gm), cholesterol 0 mg, sodium 150 mg (6%), potassium 150 mg (4%), total carbohydrate 16 gm (dietary fiber 2 gm, sugars 10 gm), protein 10 gm. Vitamin A 100%, vitamin C 100%, vitamin B-1 100%, vitamin B-2 100%, vitamin B-6 100%, vitamin E 100%, niacinamide 100%, pantothenic acid 100%, folic acid 100%, biotin 100%, vitamin D-3 100%, vitamin B-12 100%, calcium 30%, phosphorus 20%, magnesium 20%, iron 25%, zinc 100%, iodine 100%. Percent daily values are based on a 2,000 calorie diet.

New Product-Documentation: FreeLife leaflet. 1995.

“FreeLife: Experience the incredible benefits of FreeLife’s exclusive Soy Miracle products.” “The cornerstone of the Soy Miracle Ultimate Body Program is the fat-free Ultimate Shake. The Ultimate Shake was specially designed to be a great-tasting source of many important nutrients needed to achieve optimal health and to help decrease excess body fat when used as part of the complete Soy Miracle Ultimate Body Program.

“Dr. Mindell’s exclusive formula, Ultra Soy Complex I, contains eight of the most powerful soy foods synergistically combined to create the ultimate nutritional shake. These soy foods include the world’s best soy protein isolate, soy fiber, soy lecithin, tofu powder, soy flour, tamari powder, miso powder, and mixed soy phytosterols. The Ultimate Shake also contains blue-green micro-algae, Siberian ginseng, Spanish bee pollen, and active enzymes [from the soy flour?] for better absorption.

“The Soy Miracle Ultimate Shake can be used as a complete meal replacement or healthy snack and provides 100% of the USRDA of all essential vitamins and most minerals. For maximum fat-loss results, replace one or two meals each day with a delicious Soy Miracle Shake and eat at least one well-balanced meal. Increase your daily physical activity and supplement your diet with FreeLife’s Soy Miracle Ultimate Antioxidant and Ultimate Body Toner.”

Label for Chocolate Royale sent by Carolyn Ashman of Napa, California. 1995. May 15. She is a FreeLife distributor. Phone: 707-259-9459. “Directions: As a dietary supplement, add one level scoop (scoop included in can) of Soy Miracle Ultimate Shake (TM) to 8 fl. oz. of skim milk or Westsoy nonfat soy milk and blend or shake until smooth. For best flavor, milk should be very cold. For maximum results” the shake should be used together with

the two other products in this line and “the complete Soy Miracle Ultimate Body Program (TM).”

Talk with Luke Taffuri, Vice-President of Operations, FreeLife International (354 Woodmont Rd. #5, Milford, Connecticut 06460. Phone: 1-800-882-7240). 1995. May 30. To buy these products, you must be sponsored by a distributor. Cost: \$61.25 for all 4 products incl. shipping. Each can of shake is \$18.55. Antioxidant is \$19.60. Body toner is \$18.55. How much genistein is in these products? If each day you take one serving of a shake and two antioxidant pills plus two body toner pills, you will get 20 mg/day of genistein, plus 16-17 mg/day of daidzein. These products were introduced on 1 Feb. 1995, at the same time as Dr. Mindell's book became available. The company, FreeLife, was started in 1995.

Talk with Karma McLleskey of Fairfax Station, Virginia. 1995. Aug. 18. Luke Taffuri runs the computers at Freelif. The people who know the most about the products are Ray Faltinsky (president) and Kevin Fournier (vice president).

3792. Furuhashi, Hideki. 1995. Japanese soyfoods markets. Paper presented at a conference titled “Producing Soybeans for the Soyfoods Market.” 9 p. Held 2 March 1995 at Ames, Iowa.

• **Summary:** This paper consists of nine very interesting statistical tables, one on each page. Table 1 shows the supply and demand for soybeans in Japan from 1984 to 1992 (in tonne = metric tons). The supply of Japanese-grown soybeans decreased from 126,000 tonnes in 1984 to a low of 73,000 tonnes in 1992, and imports increased from 4,401,000 tonnes in 1984 to 4,725,000 tonnes in 1992. The demand for soybeans from crushers has stayed about steady, ranging from a low of 3,428,000 tonnes in 1991 to a high of 3,928,000 tonnes in 1985. Demand for food uses has increased from 786,000 tonnes in 1984 to a high of 927,000 tonnes in 1992 (up 18%). Demand for use as feed has increased from 55,000 tonnes in 1984 to 95,000 tonnes in 1992.

Table 2 shows soybean utilization in Japan by type of food product from 1987 to 1994: Use of soybeans for tofu and aburage stayed about steady at 498,000 tonnes, by far the largest food use. Use for miso decreased slightly from 180,000 tonnes in 1987 to 170,000 tonnes in 1994. Use for natto grew strongly from 97,000 tons in 1987 to 110,000 tonnes in 1994. Use for kori-tofu (dried-frozen tofu) grew slightly from 29,000 tonnes in 1987 to 30,000 tonnes in 1994. Use for soy sauce grew strongly from 5,350 tonnes in 1987 to a record 25,300 tonnes in 1992, dropping slightly to 23,000 tonnes in 1994. Use for soymilk decreased slightly from 4,000 tonnes in 1987 to 3,100 tonnes in 1994. Total use of soybeans for food in Japan grew slowly from 875,350 tonnes in 1987 to 930,000 tonnes in 1994 (up 6%).

Table 3 shows Japanese population and per capita consumption of soyfoods from 1982 to 1992. Population

grew from 103,720,000 to 124,452,000 during this period, while per capita consumption grew from 6.8 to 7.4 kg/capita (up 8.8%).

Table 4 shows per family expenditures and consumption per year on tofu, natto, miso, and soy sauce from 1982 to 1992. For example, expenditures on tofu increased from 2,535 yen in 1982 to 7,992 yen in 1992, while consumption fell from 87.98 cakes to 79.26 cakes. Thus in 1992 the average Japanese family consumed 1 cake of tofu every 4.6 days.

Table 6 shows imports of soybeans for food from the USA, Canada, and China from 1982 to 1992. Imports from the USA are subdivided into IOM, Beeson, and other identified varieties. In 1992 about 88.7% of food-grade soybeans imported to Japan from the USA were IOM. Moreover, of all these soybeans imported for food use in 1992, about 76.6% came from the USA, 21.5% from China, and 1.85% from Canada.

Table 6 shows the amount spent per capita by people of different 5-year age-groups on four soyfood products. The average person in the age 60-64 year group spent ¥2,976 on tofu, ¥1,539 on miso, ¥1,490 on soy sauce, and ¥1,098 on natto. The average person in the age 30-34 year group spent ¥1,581 on tofu, ¥603 on miso, ¥508 on soy sauce, and ¥708 on natto.

Table 7 shows the source of soybean used to make four soyfood products in 1984, 1990, and 1992. In 1992, of the 498,000 tonnes of soybeans used in tofu and aburage in Japan, 74.8% of the soybeans were IOM from the USA, 6.0% were Beeson (USA), 8.0% were other U.S. varieties, 3.0% were from China, and 8.0% were grown in Japan. Of the 30,000 tonnes use to make dried-frozen tofu, 86.7% were IOM and the rest were from China. Of the 108,000 tonnes used to make natto, 55.5% were from the USA and Canada, 39.8% were from China, and 4.6% were grown in Japan. Of the 176,000 tonnes of soybeans used to make miso, 88.0% were from China, 5.7% were white-hilum beans from the USA, and 6.25% were grown in Japan.

Table 8 shows that production of soybeans in Japan from 1982 to 1994 has decreased sharply. In 1982 some 262,300 tonnes were produced on 147,000 ha with a yield of 1,782 kg/ha. In 1994 some 98,800 tonnes were produced on 26,500 ha with a yield of 1,620 kg/ha.

Table 9 is two charts showing the distribution system for (1) Imported soybeans from suppliers to end users, and (2) Domestic soybeans from farmer to end users. Farmers sell to the Zenno Nokyo or a collector. Address: Mitsui & Co. Phone: 515-294-0160.

3793. Golbitz, Peter. 1995. Traditional soyfoods: Processing and products. *J. of Nutrition* 125(3S):570S-572S. March. Supplement. First International Symposium on the Role of Soy in Preventing and Treating Chronic Disease. [9 ref]

• **Summary:** Contents: Introduction. Soymilk. Tofu. Tempeh. Miso. Soy sauce. Address: Soyatech, Inc., Bar Harbor, Maine 04609. Phone: 360-379-9544.

3794. **Product Name:** Hot Mama's Large Garden Tofu Ravioli.

Manufacturer's Name: Hot Mama's Ravioli, Etc.

Manufacturer's Address: 1485 Gericke Road, Petaluma, CA 94952.

Date of Introduction: 1995. March.

Ingredients: Tofu, spinach, onions, carrots, garlic, miso, spices, salt, pepper.

Wt/Vol., Packaging, Price: 16 oz. paperboard box. Retail for \$5.99 (3/95, California).

How Stored: Frozen.

New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 1995. March. Paperboard box. 11 by 7¼ by 1 inch. Green and red on white. "Egg free. Dairy free. Oil free. No preservatives added. Carry flat. 24 ravioli."

3795. Iowa State University. 1995. Producing soybeans for the soyfood market: Conference schedule and registration (Leaflet). Ames, Iowa. 6 panels.

• **Summary:** On Thursday, 2 March 1995, Iowa State University held a 1-day conference titled "Producing Soybeans for the Soyfoods Market" at the Holiday Inn Gateway Center, Ames Iowa. No proceedings were published. Schedule: Wednesday evening: Tour of Iowa State University's Pilot Plant and Center for Crops Utilization and Research. Soyfoods tasting reception follows at the Holiday Inn Gateway Center for conference registrants. Thursday. Morning session: Markets, trade, and policy. 8:30 a.m.–Welcome and introductions, by Lester A. Wilson. 9:00–Japanese soyfoods markets, by Hideki Furuhashi, Mitsui & Co. 9:45–Growth potential for soyfood beans in Asian markets, by Lester A. Wilson. 10:30–Break. 10:45–U.S. participation in soyfoods markets in the Pacific Rim, by Robert Neal, Agri-Grain Marketing. 11:30–Trade policy changes and opportunities, by Paul Gallagher. 12:15–Lunch. Afternoon session: Soybean varietal effects on soyfood quality. 1:30 p.m.–The effect of varietal characteristics on perceived soyfood quality, by Keisuke Kitamura, Chief, Legume Breeding Lab, MAFF [Ministry of Agriculture, Forestry and Fisheries], National Agricultural Research Center, 3-1 Kannondai, Tsukuba, Ibaraki 305, Japan. 2:15–Soybean breeder panel discussion, with Keisuke Kitamura, Walter Fehr (ISU), Dennis Strayer (Strayer Seeds), Tom Brumm (MBS Seeds), Clark Jennings (Pioneer Hi-Bred Intl.), Jerry Lorenzen (FTE Genetics). 2:45–ISU research presentations: (1) Soybean varietal and storage effects on tofu processing–Pilot plant study, by Lester A. Wilson and Patricia Murphy. (2) Rapid quality testing with near-infrared whole grain analyzers, by Charles

Hurburgh. 3:30–Break. 3:45–Health benefits of soyfoods, by Mark Messina (American Soybean Association health consultant); Isoflavones in soybeans and soyfoods, by Patricia Murphy (ISU Dep. of Food Science and Human Nutrition). 5:00 p.m.–Closing comments and questions.

Conference sponsors: Midwest Agribusiness Trade Research and Information Center (MATRIC, Iowa State Univ.). Center for Crops Utilization Research (ISU). Utilization Center for Agricultural Products (UCAP, ISU). Iowa Soybean Promotion Board. MSGA/MSPRC (Minnesota Soybean Growers Assoc. / Minnesota Soybean Research & Promotion Council). Registration fee: \$100 before Feb. 15, or \$125 thereafter.

A five-page directory of the 74 attendees is attached. Address: Ames, Iowa.

3796. Northrup King. 1995. Corporate corner: Specialty soybeans offer farmers profitable alternatives without yield sacrifices. *ASA Today (St. Louis, Missouri)* 1(5):4. March.

• **Summary:** At Northrup King edible soybeans combine specialty traits with top-notch yields. "Unlike many edible soybeans, Northrup King varieties are developed first for yield, then for specialty traits such as yellow hila, seed size, and high protein content." John Thorne, director of breeding for Northrup King, says: "We recognize that even though these food-grade soybeans may capture a premium price, our customers can't afford to sacrifice yields."

3797. Ontario Soybean Growers' Marketing Board. 1995. Technical soybean mission: Japan, Hong Kong, Malaysia, Singapore. March 10-26, 1995. Chatham, Ontario, Canada. 23 p. 28 cm. [Eng]

• **Summary:** Contents: Participating members: Dr. Karen Lapsley, Mr. Ron McDougall, Mr. Michael Loh, Mr. Doug Jessop (food technologist and tofu expert, Harrow Research Station), Mr. Kim Cooper (marketing specialist, OSGMB). Note: This is the first Canadian soybean mission in which a food technologist (Doug Jessop) participated. Background. Mission objectives. Acknowledgements. Mission details–Japan: Canadian embassy.

Japan Miso-Co-op Industrial Association: Japan imports about 250,000 tonnes {metric tons} of soybeans from China each year, and about 150,000 tonnes of that amount is for the miso market. The remaining miso soybeans come from Canada, USA, and Japan. The best soybean for making miso comes from the Hokkaido area of Japan. It is a large, white hilum type, perhaps Toyomasuri. Generally the larger the soybean the better for making miso. Japanese miso makers need two types of soybeans from Canada: (1) Normal SQWH (Special Quality White Hilum); average values for color, taste and texture are acceptable though higher values would be preferable; (2) High Premium Soybeans; they would consider paying a premium for better color, taste, and texture.

Azuma Natto Foods Co. Ltd.: This natto company uses 7,000 tonnes/year of soybeans making them the third largest natto maker in Japan. They use 65% USA, 25% Japanese, and 15% Canadian soybeans. There are four sizes of natto: Small natto < 5.5 mm accounts for 72% of the natto market in Japan; Large natto, 5.5 to 6.2, account for 18%. Extra large natto > 8.5 mm account for 18%. Split seed natto account for 10%. Factors in assessing the suitability of soybeans for natto are: Fat content should be less than 19%. Total sugars—Group 1 contains sucrose, fructose, and glucose, group 2 contains raffinose and stachyose. Calcium affects the hardness or softness of natto. The ideal range is 180-250 mg/100 gm. Sanwa Company—Tofu manufacturer.

Wed., March 15—Japan Tofu Association: There are over 20,000 tofu makers in Japan, and 53 of these are members of this association, with half of the 53 being in the Tokyo area. Only 185 tofu manufacturers in Japan have 30 or more employees. Tofu makers consider there are two types of organic soybeans: true organic and semi-organic. The association imports about 2,000 tonnes of each type from the USA; they are OCIA certified.

Home Foods Company Ltd. uses 4,000 metric tons of soybeans a year, mostly a blend of 70% Chinese white hilum and 30% U.S. white hilum. The soys from the USA are I.O.M. soybeans, especially the “High Super” variety. For the more premium market they use a blend of 50% Japanese soys and 50% Harovinton soybeans. They have also just started blending 50% Chinese and 50% Canadian white hilum soybeans. The two most important criteria for their soybeans are high protein and high total sugars. Sugar levels of Chinese soybeans (24-25%) are higher than those of Canadian soybeans (23-24%).

Thursday, March 16—Takeya Miso Co.: Ikuo Fujimori, President. Takeya has two plants employing 100 production workers and using 5,000 to 6,000 tonnes of soybeans yearly. 70-80% of their products are sold in supermarkets. For years they have been using the U.S. soybean variety Kanrich.

Nagano Chushin Agricultural Experiment Station: They have been breeding soybeans since 1957 and in that time have developed and released 17 varieties, the most famous being Enrei. The staff of 34 includes 5 soybean breeders. Dr. Nobuo Takahashi has been breeding soybeans for over 18 years. Japan has domestic soybean area of 370,500 acres (150,000 ha); it is decreasing, so imports are increasing.

Nagano Miso Industrial United Co-operatives: This group consists of 8 local co-ops made up of 160 miso manufacturers, who pay a fee to this group based on sales. There was a detailed discussion of the types of sugars in soybeans necessary for good miso.

Friday March 17—National Food Research Institute. Tsukuba is developing into a science research park, now containing over 200 different research institutes. NFRI, originally founded in 1934 as the Rice Institute, moved to

Tsukuba from Tokyo in 1973. Thirty years ago, all tofu in Japan was made with Japanese soybeans. Dr. Toshiro Nagai spoke about natto: In 1992 the natto needs of Japan were met by soybeans from China (45%), USA (38%), Canada (17%), and Japanese domestic (8%). Natto consumption has increased by about 10% for each of the last few years. Dr. Sayuki Nikkuni spoke about miso: In 1992 the miso needs of Japan were met by soybeans from China (87%), USA (6%), Japan (6%), and Canada (1%). Dr. Kaoro Koyama spoke about tofu: In 1992 the soybeans for tofu totaled 490,000 tonnes and came from USA (390,000 tonnes; 80%), Canada (50,000; 10%), Japan (20,000; 4.1%), China (20,000; 4.1%), and South America (10,000; 2.0%).

Asahi Food Processing Co. Ltd. This plant, which has 350 employees and operates 365 days/year, was established in 1972 and produces tofu, fried tofu, natto, noodles, and juices. They use 15 tonnes of soybeans daily or 4,900 tonnes/year, of which 38.8% are grown in Japan and the remaining 61.2% are IOM from the USA. Each day they make 120,000 cakes of tofu, 100,000 pieces of fried tofu, and 20,000 packages of natto. Most of the soybeans they use in production are dehulled. They use about 500 tonnes/year of OCIA certified soybeans from the USA and some semi-organic soybeans from Japan. The prices they pay per kg of soybeans are: IOM 30-40 yen; Vinton, identity preserved varieties, and Harrovinton [Harovinton] 100 yen; organic 120-140 yen; Enrei (Japanese) 400 yen.

Saturday, March 18—Hong Kong. Canadian High Commission. Canada Packers (Hong Kong) Ltd.

Monday, March 20. Shenzhen Economic Zone: This area of 30 square km, just outside the Hong Kong border, contains 1 million people or 60% of the provincial population, all of whom require a special permit to work in the area. This economic zone is booming, basically due to spiralling costs in Hong Kong, where many businesses and factories are closing and moving to this area, where land and labor costs are much lower.

Shenzhen Vitasoy (Guang Dong) Foods & Beverage Co. This plant, which is only one year old, produces a major share of the soymilk for Hong Kong. They are able to import soybeans at a low tariff rate because they ship the majority of their finished products back into Hong Kong. The plant uses Canadian SQWH (Special Quality White Hilum) soybeans, but has problems with uneven seed size. They presently receive the soybeans in 45 kg jute bags, but would prefer strong 45 kg poly-lined paper bags. A small percentage of dairy milk is mixed with the soymilk, which is thought to improve its texture and taste.

Tuesday, March 21. Dah Chong Hong, Ltd. This was the first company to import Canadian soybeans for food use in the early 1970s. Dah Chong pointed out that Ontario soybeans were experiencing increasing competition from Quebec soybeans, especially in the past two years. The Quebec soybeans are 5-10% less expensive, due to lower

basis levels, lower freight costs, and being more aggressive in a new market. Their quality is similar to Ontario, though the seed coat color is somewhat darker. There are about 50 tofu makers in Hong Kong, 10 larger size and 40 smaller size, although there is not a large difference in size. Consumers believe that packaged tofu is not as fresh as that purchased fresh daily from local markets.

Amoy Food Ltd. (Dr. Alain Butler; This plant makes soy sauce and other sauces used in cooking. They use only Canadian soybeans, the Maple Glen variety from Quebec). Wed., March 22. The group visited Hung Tao Soya Bean Products Pty., a traditional Hong Kong tofu and soybean sprout plant in the New Territories.

Thursday, March 23—Malaysia. Canadian High Commission. Yeo Hiap Seng (Malaysia) Berhad (Contains excellent details on the company). Chop Lee Kit Heng Sdn. Bhd. (A soybean trader selling to end users in Malaysia).

Friday, March 24—Singapore. Canadian High Commission. Yeo Hiap Seng Ltd. (Singapore). Meeting with nine tofu manufacturers in Singapore. (The name of each company is given. There are 40 tofu makers in Singapore, and the majority now use Canadian soybeans. Tofu growth in the last 5 years has been very rapid and competition is fierce). Asia Corporation Pte. Ltd. (This company accounts for about 70% of the soybeans imported into Singapore and Malaysia. They first brought Canadian soybeans into the area in 1978). Canadec Private Ltd. Sing Yeap Trading Pte. Ltd.

Saturday, March 25—Unicur Food Company Pte. Ltd. (Mr. Goh gave a tour of his facility and discussed his plans for a new plant in late 1995). Yam Thye & Co. (Warehouse).

Encore Ltd.: Sylvia B. Hollenstein, managing director. This company, based in Switzerland, uses Swiss technology to produce soy yogurts, chocolates, and noodles in Switzerland from Chinese soybeans—mostly for the taste. The products are shipped from Switzerland to the company's 3 retail stores in East Asia; they plan to expand to 10 retail stores by the end of 1995.

Appendixes A through J, issued as a separate document, contain extensive and detailed information and some published documents related to the technical mission. Address: P.O. Box 1199, Chatham, ONT N7M 5L8, Canada. Phone: 519-352-7730.

3798. Fujimori, Ikuo. 1995. Canadian soybeans for miso manufacturing in Japan. *Canadian Export Soybeans (OSGMB, Chatham, Ontario, Canada)* 8(1):1. April.

• **Summary:** "I have been using Canadian soybeans constantly since 1975, which I first tested soybeans from Ontario. I chose the variety 'Harwood' because of its large size, white hilum, and high sugar content... These first soybeans were bagged shipments in containers, and now we receive the soybeans in bulk containers.

"In 1978 I visited soybean growing areas in Ontario. I found a new variety "Harcor" to be one of the better varieties for miso making... The majority of the Ontario soybeans purchased are SQWH (Special Quality White Hilum), namely mixed varieties of white hilum soybeans. At the same time we have bought some 'IP' (Identity Preserved) varieties in limited quantities."

"In the 1980s, I joined with four soybean missions to Canada, sponsored by the governments of Canada and Ontario, and also by the Ontario Soybean Growers' Marketing Board (OSGMB). I gained much information and knowledge about Ontario soybeans. I was impressed by the co-operative system between the OSGMB, the governments of Canada and Ontario, the soybean producers and the industry personnel involved. I was also impressed by the work of keeping quality standards by the Canadian Grain Commission, and by the study of developing new soybean varieties for food use at the Harrow Research Station. Using Canadian soybeans, I found the quality rather stable compared to Chinese soybeans. That is a big advantage for miso manufacturing."

In December 1994 the Japanese Miso Manufacturers Association visited Ontario. As of 1995 "the quality of Chinese soybeans seems unstable and their ability to supply is fluctuating. Therefore many miso makers are now thinking of using Canadian and American white hilum soybeans instead of Chinese soybeans."

A photo shows Mr. Fujimori, Fred Brandenburg of OSGMB, and Elmer Buchanan (Ontario Minister of Agriculture).

Note: This bi-annual newsletter was formerly titled *Ontario Export Soybeans*. Formerly 2 pages, green on yellow, it is now 4 pages, dark green and brown on tan. Address: President, Takeya Miso Co., Nagano, Japan.

3799. Lowe, James M. 1995. Testing at the Canadian Grain Commission. *Canadian Export Soybeans (OSGMB, Chatham, Ontario, Canada)* 8(1):2-3. April.

• **Summary:** "Canada has long been recognized internationally as a producer and supplier of high quality grains... For over 25 years the Canadian Grain Commission (CGC) has monitored shipments of Canadian grains, including soybeans, for a variety of compounds that might pose a risk to the health of animal and human populations." Today the CGC tests for over 70 pesticide residues, 10 mycotoxins (including aflatoxins), and "heavy metals."

A photo shows members of the Japanese Miso Manufacturers Association examining grain samples at the CGC office in Chatham, Ontario. Address: Regional Manager, Canadian Grain Commission, Chatham, Ontario, Canada.

3800. **Product Name:** Cold Mountain Fermented Black Bean Paste [Regular, or Dehydrated].

Manufacturer's Name: Miyako Oriental Foods, Inc.

Manufacturer's Address: 4287 Puente Ave., Baldwin Park, CA 91706.

Date of Introduction: 1995. April.

Ingredients: Black soybeans, rice, salt, water, *Aspergillus oryzae*.

New Product–Documentation: Portfolio sent by Terry Shimizu of Miyako Oriental Foods. 1999. Nov. 22. Talk with Terry Shimizu. 1999. Nov. 29. The regular product was introduced in April 1995, and the freeze-dried form in June 1996.

3801. *Ontario Soybean Growers' Marketing Board Newsletter*. 1995. Producing soybeans for the soyfood market. April. p. 3.

• **Summary:** In early March, 1995, Iowa State University conducted a seminar titled "Producing Soybeans for the Soyfoods Market." Topics covered included an introduction to soyfoods (complete with tasting at Iowa State's Center for Crops Utilization Research facility), a review of Japan's soyfoods market, trade policy changes and challenges, quality assessment, and the effects of varietal characteristics on soyfood quality.

Speaking on Japan's soyfoods market, Hideki Furuhashi of Mitsui & Co. reported that consumption of tofu and natto is increasing slowly in Japan, while miso and soy sauce are decreasing. China has been supplying Japan with 250,000 to 300,000 tonnes/year of soybeans, mainly for making miso and natto. Japan imports between 120,000 and 130,000 tonnes/year of identity preserved soybeans, up from 100,000 tonnes 5 years ago. For example, 50,000 tonnes of Vinton were imported in 1994.

Bradley Hildebrand of Cargill in Minneapolis, Minnesota, reported that the U.S. exports about 130 million bushels/year of soybeans to Japan. About 30 million bushels (23% of the total) are used to make soyfoods. Most of the soybeans used for soyfoods in Japan are "IOM" beans because they are grown in Indiana, Ohio, and Michigan. IOM soybeans are not any specific variety or hilum color, but they are generally higher in protein and better in quality than other U.S. soybeans. They trade at a premium of 10-20 cents per bushel over other U.S. soybeans in Japan. IOM soybeans are traded on the Japanese grain exchange. For shipment to Japan, IOM soybeans are railed to Baltimore (Maryland) or Norfolk (Virginia) for shipment via panamax size vessels. They may also be railed to Mobile (Alabama) or New Orleans (Louisiana) for vessel shipment.

Hildebrand reported that IOM soybeans will keep the largest market share due to their low price, however there is a market for variety soybeans. He said that Vinton is the most popular variety for making tofu in Japan, but it does not yield high enough in the field to make it price competitive. "He suggested that breeders need to develop a high-yielding soybean with Vinton's tofu-making

characteristics. However he said the market for variety soybeans is not huge and is easily flooded." Address: Box 1199, Chatham, ONT, Canada N7M 5L8. Phone: 519-352-7730.

3802. Slavin, Joanne L. 1995. Health benefits of soy fiber: A quick taste. *Soy Connection (The) (Chesterfield, Missouri–United Soybean Board)* 3(2):1, 4. Spring. [9 ref]
• **Summary:** The insoluble dietary fiber content in ½ cup of various soyfoods is as follows: Soybeans (raw/uncooked) 12.0 gm, soy meal [soy flour] 7.0 gm, miso 3.9 gm, soy milk 1.3 gm, tofu (raw) 0.6 gm.

Soy fiber is also isolated and used as a food additive. Different companies produce various types of soy fiber, but most of the published research is on soy polysaccharide, which contains 75% total dietary fiber (TDF) including a mixture of cellulosic and noncellulosic structural components of the internal cell wall. Soy polysaccharide is mostly insoluble dietary fiber, but clinical studies have shown it has properties of both insoluble and soluble dietary fiber. Soy polysaccharides, like other insoluble fibers, increases stool weight.

There is considerable evidence that intake of fiber-rich foods is inversely related to risk of cancers in the colon and rectum. It is estimated that the risk of colorectal cancer could be reduced by about 31% if fiber intake were increased by 13 gm/day.

"Dietary fiber has also been shown to be effective in lowering serum cholesterol. It may decrease risk of coronary heart disease by decreasing serum lipids, lowering blood pressure, improving glucose metabolism, and aiding weight maintenance. Soluble fibers appear most effective in lowering serum cholesterol" but they are only effective in subjects with elevated cholesterol levels.

"Potential negative effects of dietary fiber include lower absorption of vitamins, minerals protein and calories. It is unlikely that healthy adults who consume fiber amounts within the recommended ranges will have problems with nutrient absorption."

"Soy fiber appears to be extremely fermentable in human subjects, with 93% of the dietary fiber as soy polysaccharide being fermented... Fermentation of dietary fiber produces gas and short chain fatty acids, one of which, butyrate, appears to play an important role in cancer prevention."

"Compared with other fiber sources available as supplements for food, soy fiber provides a range of positive functional, nutritional, and physiological effects. Soluble fibers, such as gums and pectins, lower serum cholesterol but are difficult to incorporate into foods and are not palatable. Insoluble fibers, such as wheat bran or cellulose, are effective in the prevention and treatment of constipation, but are difficult to consume on a long term basis. Soy polysaccharide has found wide acceptance as a

supplemental fiber source and is added to hospital nutrition products, breads, and other baked products, including muffins, cookies, and crackers.” Address: Prof., Dep. of Food Science and Nutrition, Univ. of Minnesota, St. Paul, MN.

3803. Walker, Morton. 1995. Concentrated soybean phytochemicals. *Healthy & Natural Journal* 2(2):58-60. April. [12 ref]

• **Summary:** Contents: Introduction (Designer Foods Symposium III). Cancer inhibitors in soybeans. Prostate cancer cured by fermented soybean drink (Haelan 851). The therapeutic characteristics of Haelan 851. Note: The address, phone number, and fax number of Haelan Products Inc. in Metairie, Louisiana, is given.

Soybeans contain five different types of anti-cancer agents: protease inhibitors, phytate, phytosterols, saponins, and isoflavones. The latter are plant estrogens with strong inhibiting effects in hormone-related malignancies such as prostate, ovarian, cervical, and breast cancers. Isoflavones are found in a variety of soy foods, including soy milk, tofu, tempeh, miso, textured vegetable protein, soy flour, soy nuts, and soybeans. “The isoflavone component which most excites the medical research community is genistein. It’s an overpowering suppressor of the oncogene enzymes that ordinarily stimulate pathological cell growth.” Address: Medical Journalist, 484 High Ridge Road, Stamford, Connecticut 06905-3020.

3804. Shimizu, Teruo. 1995. Recent developments at Miyako Oriental Foods (Interview). *SoyaScan Notes*. May 3. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Miyako’s miso business is growing rapidly. They can no longer keep up with demand. This summer Miyako plans to triple its production volume. They hope to buy another plant nearby and make miso in both their current plant and at the new location. Note: As of Feb. 1994 Miyako reported that it was making 2.2 million lb/year of miso.

In 1982 Miyako started importing freeze dried miso and spray dried miso from its parent company in Japan. But the high cost of Japanese imports resulting from the steady decrease in the value of the U.S. dollar has led Miyako to develop its own freeze-dried product in California. They are working with Mercer Processing Inc. in Palo Alto, which does the freeze drying. Later, they plan to use this freeze-dried miso to formulate other products, such as instant miso soups.

In addition, they plan to develop a spray-dried miso (which is lower quality and less expensive, and contains maltodextrins).

Miyako has started getting my enquiries for products from companies in Canada and Mexico because of NAFTA. Address: Vice President, Miyako Oriental Foods Inc., 4287

Puente Ave., Baldwin Park, California 91706. Phone: 818-962-9633.

3805. Liu, Keshun; Orthoefer, Frank; Thompson, Keith. 1995. The case for food-grade soybean varieties. *INFORM (AOCS)* 6(5):593-96, 598-99. May. [10 ref]

• **Summary:** Contents: Introduction. Food beans vs. oil beans. Traditional soyfoods: Soymilk, tofu, toasted full-fat soy flour [kinako], soy sprouts, soy sauce, miso, tempeh, natto. Soy protein ingredients: Soy grits and flour, soy protein concentrates, soy protein isolates. Soyfood nutrition. Current size of food bean market. Breeding of food beans. Conclusions.

“Oil/meal beans include all the commonly produced soybeans.” The oil is typically used for food and the meal for livestock feed. However the “new varieties of food soybeans” are generally exported to countries in East Asia for preparation of Oriental soyfoods. Table 3 compares food and oil beans. Seed size: Large vs. small to large. Seed uniformity: High vs. no preference. Hull color: White-yellow vs. yellow. Hull quality: Thin, firm vs. no preference. Hilum color: Clear to buff vs. clear to blank. Protein content: High vs. medium to high. Oil content: Low to high vs. high. Cleanliness: U.S. Grade 1 or better vs. any grade. Major applications: Tofu, soymilk vs. oil, defatted meal.

In addition to their use in making traditional soyfoods, the “new food-grade varieties,” especially those with high protein content, have been marketed for preparation of toasted full-fat soy flour, defatted soy flour, and soy protein concentrates and isolates.

Photos show: (1) Keshun Liu, Frank Orthoefer, and Keith Thompson. (2) Color and size comparison of soybeans for food use and those intended for crushing (color). The “food beans” are larger than the “oil beans.”

Note: This is the earliest English-language document seen (July 2001) that contains the term “oil beans” or the term “oil/meal beans,” both used in contrast to “food beans” or “food soybeans.” This is also the earliest English-language document seen (July 2001) with the term “food-grade” (or “food grade”) used in the title to refer to soybeans or soybean varieties. Address: 1. Project Leader, Soyfood Lab., Jacob Hartz Seed Co. Inc., 901 N. Park Ave., Stuttgart, Arkansas 72160; 2. Vice President for research and development, Riceland Foods Inc., P.O. Box 927, Stuttgart, AR 72160; 3. Vice president, International Soyfood Sales, Jacob Hartz Seed Co.

3806. Lazzaro, Don. 1995. History and current status of soymilk in Australia (Interview). *SoyaScan Notes*. June 6. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ceres Natural Foods is their holding company and Pureharvest is their trading name. They made this name change in 1982 since they found the word Ceres was

difficult for many people to pronounce. The first soymilk they imported to Australia was made by Saniku in Japan and imported from Mitoku.

Don is interested in macrobiotics. In early 1979 he took over the running of a small macrobiotic and natural foods retail store in Melbourne named Ceres Wholefoods. The only way he could make it viable was to try to buy at better prices, so in April 1979 he started a wholesale and import company, which he named Ceres Natural Foods, also in Melbourne. There was a company named Real Foods (run by Michael Pels) in New South Wales, Australia, that was importing, through Mitoku in Japan, tamari, soy sauce, miso, tofu, etc. Real Foods was the first company in Australia to import foods from Mitoku in Japan.

Don knew Michael from when they both used to live in Sydney in about 1978. Michael purchased some rice cake machines (the same kind used by Chico-san) through Mitoku from Airin Co. These machines were very poorly engineered and constructed. Michael has already sold 168 of these machines to Quaker.

When Don took over the Ceres Wholefoods retail store in 1979, he approached Michael and asked to be the distributor in Victoria of the food products Michael was importing from Japan through Mitoku. Michael said okay, and Don began distributing. Don asked Michael to import some soymilk from Mitoku, which he did in mid-1980. The stick-on label over the Japanese label said Ceres Natural, in Choc-Malt and Natural flavors. But the first soymilk in Australia was imported from Japan in about 1977-78, through Muso by 3-4 health food stores named Russel's; it was made by Marusan in a stand-up plastic pouch. Not much of it was sold. In about 1980-81, Michael decided to get out of the whole import business in order to focus on making rice cakes. So Mitoku Mr. Kazama and Chris Dawson asked Don to become their importer in Australia. Don also ran a 3rd company, a center that provided information and advice on macrobiotics.

Jim Wilson, who was running Spiral Foods in Australia, had been importing from Mitoku. He convinced Mitoku not to sell to Don, his competitor; Mitoku agreed. Mitoku then approached Saniku, and in about 1981 Don began importing soy milk made by Saniku through Mitoku. Don sold it under the same label he had used before. The Muso started to import some soymilk packaged in Tetra Brik cartons through Spiral Foods. Don got the same product from Kibun, and on it began to use the name Pureharvest.

In short: Four companies pioneered in importing soymilk to Australia: Real Foods, Russel's, Spiral Foods, and Ceres Natural Foods. There was also a little relatively beany Chinese soymilk sold in the ethnic Chinese market. Ceres, as a result of its Tetra Brik package, managed to get fairly good distribution into the grocery / supermarket trade, starting in late 1983 or early 1984. By this time Ceres was by far the biggest seller of soymilk in Australia. They were

importing five 20-foot containers per month of the Kibun soymilk product. Ceres was actively promoting this soymilk, doing trade shows, etc.

In 1986 Ceres was approached by a small soymilk maker named Australian Natural Foods (ANF) in Sydney; basically they had old machinery and were in trouble. They approached Don asking if they could make a soymilk for him. They worked out an exclusive deal and formula, and in Nov. 1986 Ceres launched this as Aussie Soy in its first 1 liter package, in Tetra Brik. Sales shot up. It was trucked in a dairy tanker to Bon Lait in Victoria (almost 1,000 miles away) where it was packaged in a dairy that had a Tetra Brick packaging machine. In about 1990-91 ANF first got its own Tetra Brik packaging machine. That same year ANF launched its own soymilk product, named So Natural, to compete with Sanitarium's So Good. It is made from whole soybeans, and is very similar to the Aussie Soy product that have long made for Don.

As early as 1980 Sanitarium Foods was importing Soyolac in tins / cans. They sold it mostly to Seventh-day Adventists through their own retail stores. Then in April 1987 Sanitarium Foods launched their own So Good soymilk (made from a blend of soy protein isolates, made and packaged by dairy companies) in Australia. They went into it in a big way, with a national campaign. It was the best thing that ever happened to Don and Ceres, because this campaign grew the market dramatically. By April 1987 Ceres was selling 10,000 cartons / month of their Aussie Soy, not including their Japan imports. One year later the figure had skyrocketed to 60,000 cartons / month, increasing to 152,000 on year after that.

Nevertheless, according to the *Australian Grocery Industry Marketing Guide* (1995), Sanitarium has 71% of the dairylike (unflavored) Australian soymilk market, followed by Vitasoy at 7% (they launched in about 1991, and have done a very aggressive marketing campaign), then So Natural (made by ANF) at 5%, Sun Gold at 5%, and Aussie Soy at 4-5%. Of the total Australian soymilk market, flavored soymilks account for only about 5% of the total; the remaining 95% is dairylike; its a milk alternatives market. Each of the three major supermarket chains in Australia (Woolworth's Safeway, Franklin's, and Cole's) has its own soymilk brand. Franklin's has an isolate soymilk made by ANF, starting about a year ago. Sun Gold, made by Associated Dairies of New South Wales, is almost identical to So Good, made by the dairy company that used to mix Sanitarium's product. In about 1990 Sanitarium set up their own soymilk mixing and packaging factory.

Today the soymilk retail market in Australia is \$45 million, with a population of only 17 million people. This is huge on a per capita basis. This market has three main segments: (1) Middle class, educated, with some allergies—70%. (2) Age 50 and older, concerned with cholesterol—20%. (3) Natural foods and vegetarian—10%.

In late 1993 and early 1994 Don approached Berrivale Orchard Ltd. (a cooperative of fruit growers, headquarters in Berri, South Australia) to see if they would be interested in making a soymilk product for Ceres / Pureharvest—because Don’s relationship with ANF had become intolerable.

In 1979, to get tofu to sell at his retail store, Don used to go to Chinatown in Melbourne twice a week. He bought it from a little Chinese company (whose name he does not remember) located opposite Victoria Market. He would take a couple of buckets and carry it home in bulk, under water. Address: Pureharvest, 15 Ardena Ct., East Bentleigh, Victoria 3166 Melbourne, Australia.

3807. Evans, Barry. 1995. The American Miso story. In: Great Eastern Sun. 1995. Pricelist. Effective June 5, 1995. 37 p. See p. 2-3.

• **Summary:** “This spring, as we complete our sixteenth year of operations at the American Miso Company, we are moved to reflect back on the path we have traveled to reach this point. In the spring of 1979, a group of people approached Michio and Aveline Kushi with the idea of forming a new company to produce miso in the United States using traditional methods and only the finest organic ingredients. With the Kushi’s enthusiastic support, the Erewhon Miso Company was created to supply Erewhon with miso to distribute throughout the United States. From this distant perspective, it is difficult to remember how powerful a force Erewhon was in the natural foods industry at that time. Dominating the market in the Northeast, Erewhon was the largest distributor of natural food in the United States with strong connections to distributors for its name brands in other regions.

“With Erewhon as our partner, master distributor, and a major investor, we moved ahead confidently with our plans to build a miso factory in the Piedmont Region of North Carolina. The Kushis entreated Akiyoshi Kazama, founder of Mitoku Trading Company, a major supplier then as now of high-quality Japanese natural food to the U.S. market, to put aside any narrow concerns of self interest and find us someone to train our would-be miso makers in the rapidly fading art of traditional miso manufacture. In a selfless spirit of international cooperation, Mr. Kazama searched for someone who still made miso the old-fashioned way, yet was open-minded enough to invite strangers into his home (literally).

“After many false starts amid a lengthy search, Mr. Kazama finally located, in the mountains of Yaita Prefecture north of Tokyo, Takamichi Onozaki, a country miso maker of the old school. Mr. Onozaki, generously opening his home and his heart to *gaijin* [foreign] seekers after knowledge from half a world away, agreed to house and train an American couple, John and Jan Belleme, for an entire miso-making season. From November, 1979, until

June, 1980, Mr. Onozaki taught his students all the miso lore he had accumulated from a lifetime of miso making in his small, rural miso factory staffed entirely by local farmwives. This was intermediate technology with a vengeance!

“Upon the Bellemes’ return to America, we rapidly constructed our factory building near Rutherfordton, North Carolina, and Mitoku arranged to ship us our new equipment from Japan. By late 1980 we had begun to make our first experimental batches of rice miso. As the miso slowly aged in its huge cypress vats, great events developed hidden from our eyes which were to have a profound effect on the young Erewhon Miso Company. In July, 1981, Michio and Aveline Kushi journeyed to Rutherfordton for the official christening of the miso plant. The beautiful and joyous ceremony left not a dry eye in the gathering; later we discussed Erewhon’s ambitious plans to package and market the rapidly ripening miso.

“A glorious road into the future seemed to lay open before us, but Erewhon’s financial condition was rapidly deteriorating as too rapid expansion took its toll on a company stretched to the limit by its success. One month later we received the stunning news that Erewhon had filed for bankruptcy. In one of the saddest stories we have ever had the misfortune to be a part of, the Kushis lost control of the company they had nurtured from its birth, and we lost our only customer, a major investor, and our major source of inspiration and guidance.

“At first we were devastated by the blow fate had dealt us, but we had nowhere to go but forward as we had already made a huge financial and emotional investment in our project. Severing our ties to the past, we renamed our enterprise the American Miso Company and began a desperate search for marketers for our product. When we were unable to find anyone to help us, we resolved to set up our own marketing company and do the job ourselves. Thus, out of the direct necessity, Great Eastern Sun was born in December, 1981. Mitoku, itself almost destroyed in the storm of the Erewhon disaster and eager to rebuild, agreed to export Japanese natural food to Great Eastern Sun. GES processed its first order in April, 1982, and sold the first American Miso in September of that same year.

“In the fall of 1981, Mr. Onozaki came to Rutherfordton on an inspection trip to see exactly how well his students had learned their lessons. He stayed and worked in the factory alongside our own crew, patiently reviewing our practices and refining our procedures until he pronounced himself fully satisfied. He had never left Japan before in his life. In the fall of 1982 [sic, spring], Mr. Onozaki dispatched his daughter and son-in-law to America to work for several months in the miso factory just to make absolutely certain that everything remained kosher. In late 1985, John and Jan Belleme turned over the operation of the factory they had built to their successor, Don DeBona, who remains as miso

factory manager to this day. Three books and many projects later, the circle comes round again as the Bellemes are now Mitoku's U.S. representatives.

"Although our miso was sold only in bulk for its first two seasons, our familiar tubs with the Miso Master logo soon arrived on the scene and sales slowly but steadily grew. Starting with eight barrels, we added six in 1986, seven in 1989, five in 1991, and fifteen more in 1993 for a total of 41 of these leviathans, each holding over four tons of two-year miso. In order to house our expanding activities, we built a second factory building as big as the first in 1992, and we are already experiencing a shortage of space once again as demand continues to grow. Two years ago we began to export our miso to Europe where it is distributed by Lima throughout the continent. The American Miso Company story continues on into the future." Address: Owner, Great Eastern Sun, Asheville, North Carolina 28806. Phone: 704-252-3090.

3808. **Product Name:** [Sweet White Miso, Barley Miso].

Foreign Name: Shiro Miso, Orzo Miso.

Manufacturer's Name: Fonte della Vita S.r.L. (La).

Manufacturer's Address: Via Monviso 18, 12049 Trinita (Cuneo), Italy. Phone: (0172) 66 397.

Date of Introduction: 1995. June.

Wt/Vol., Packaging, Price: 350 gm glass jar.

How Stored: Shelf stable.

New Product–Documentation: Letter from Stephen Jannetta of Lititz, Pennsylvania. 2000. Jan. 12. Stephen worked with Christian Elwell at South River Miso Co. in Conway, Massachusetts, for two seasons: (1) Oct. 1990 to May 1991, and (2) Sept. 1993 to May 1994. After the first season he traveled to Italy. The first miso that he produced in Italy was for Soyalab (located near Florence) during a period between February and May of 1992. This was basically experimental. They made about 500 kg of shiro miso and about 1,500 kg of barley miso.

In 1994 Soyalab was purchased by La Fonte della Vita (located near Cuneo, Italy) and Stephen went there in October of that year after his second season at South River Miso Co. He began production the third week of November and finished the last week of April 1995. "In total we produced approximately 13,000 kg of barley miso and 2,100 kg of rice miso using organic soybeans and grains, and sea salt. Also at about this time the 1,500 kg of barley miso that was produced at Soyalab in 1992 was packaged and distributed, I believe, under the Soyalab label."

3809. Great Eastern Sun. 1995. Pricelist. Effective June 5, 1995 [Mail order]. Asheville, North Carolina. 37 p. 28 cm.

• **Summary:** Contents: Catalog information. Miso Master organic miso (traditional, mellow, or sweet). Sweet cloud organic sweeteners. Haiku organic Japanese tea. GES organic English tea. Emerald Cove sea vegetables.

Emperor's Kitchen condiments (soy sauce, vinegars, ume plum products, toasted sesame oil, mirin, dried vegetables, shiitake mushrooms, beans, seeds, grains, dry condiments, Atlantic sun-dried sea salt). Traditional Japanese macro pasta. Traditional Japanese specialty items (misos, candies, seaweed and ume, organic pasta, liquid condiments, specialty products {snow-dried tofu, HamaNatto, Zenryu fu (round cakes of wheat gluten), shonai fu (flat sheets), organic brown rice koji, organic nuka rice bran, organic brown rice dinner with azukis [azuki beans], or with vegs, mochi (4 types), noodles (some or bifun rice noodles), ume products, teas, pickles (incl. natto miso chutney)}, personal care products, kitchenware, knives). Address: 92 McIntosh Road, Asheville, North Carolina 28806. Phone: 704-252-3090.

3810. Jacobi, Dana. 1995. *Miso. Natural Health* 25(3):96-97, 136, 138-40, 142-44. May/June. [7 ref]

• **Summary:** The subtitle reads: "With infinite variations in taste and intensity, ranging from sweet and mild to robust and zesty, there is a miso to enhance the flavor—and immune-boosting powers—of soups, stews, sauces, salad dressings, and even desserts."

Contents: Introduction. Becoming a miso connoisseur. The benefits of miso. Cooking with miso: Get the basics, find "affinity" foods, first dissolve it, don't overdo it. 9 recipes. Color photos show white bowls containing a broth of (and thus the color of): Hatcho miso, mellow barley miso, mellow white miso, red miso, sweet white miso, barley (mugi) miso, bellow beige miso, and soybean miso. Address: Food writer, New York, NY.

3811. Jacobi, Dana. ed. 1995. *The natural health cookbook: More than 150 recipes to sustain and heal the body.* New York, London, Toronto, Sydney, Tokyo, Singapore: Simon & Schuster. 271 p. . June. 25 cm.

• **Summary:** This is a selection of the best recipes published in *East West Journal*, compiled by Dana Jacobi, Dan Seamens, and the editors of *Natural Health* magazine. The recipes are generally low in fat, free of white sugar and other refined foods, and nutrient dense, based on grains, legumes, and vegetables; some contain fish and shellfish. Chapter 4 is titled "Seitan, tempeh, and tofu." Miso and soy sauce are used throughout as seasonings.

Contains recipes for Amasake dressing (p. 153), and Amasake scones (p. 191). Amasake (or Amazake) is defined in the Glossary of ingredients (p. 243). Address: New York City, NY.

3812. *Natural lifestyle magazine and mail-order market.* 1995. Asheville, North Carolina: Natural Lifestyle Supplies. 55 p. Catalog. 28 cm.

• **Summary:** A macrobiotic mail-order catalog with several nice articles, it sells many types of soyfoods and related

products, including the full line of Kushi Cuisine, organic soybeans (yellow and black), azuki beans, amazake, Rice Dream, soymilk, soy Malted (Westbrae), Nasoya Vegi-Dressings, Nayonaise, Farmhouse Tekka, organic soy sauce, fresh tofu, snow-dried tofu, kuzu, and miso. Publisher: Tom Athos. Editor and graphic design: Debbie Athos. Address: 16 Lookout Drive, Asheville, North Carolina 28804-3330. Phone: 1-800-752-2775.

3813. Soyfoods Association of America. 1995. A consumer profile of the soyfoods shopper. San Francisco, California. 100 p. *

• **Summary:** Contents: Executive summary. Overview. 1. U.S. population—Awareness of soyfoods: Number of consumers who have heard of soyfoods (most have heard of tofu, few have heard of tempeh), demographics of soyfood-aware consumers (consumers under age 60 more aware of soyfoods, soyfoods-aware consumers are more affluent, greater number of Easterners but awareness is nationwide, more likely to be married).

2. Soyfoods consumers—Demographics: Use of soyfoods (about 26 million soyfoods consumers—15 million eat tofu, consumers who use one kind of soy product more likely to use another type), demographics (younger households and baby boomers, household incomes skew higher, more than two-thirds are college-educated, employed in white-collar professions, women in soyfoods households less likely to be in clerical jobs, men working full-time—some self-employed, busy women in a variety of employment situations, one-third of soyfoods consumers have children at home, most in the east—proportionately more in the west, proportionately more in pacific, live in areas of greater population density, living the American dream, mostly home-owners).

3. Soyfoods consumers—Shopping and eating patterns: Frequency of eating types of soyfoods (most eat soyfoods infrequently, soy cheese used more frequently, regular users use soyfoods—especially soymilk—a lot, consumers of one type use other types more), where consumers buy soyfoods (groceries/supermarkets stores of choice for tofu, natural foods store shoppers more dedicated soyfoods consumers, meat substitutes purchased in mass-market, other soyfoods in natural foods stores, soymilk customers split between grocery and natural foods, miso popular in Asian stores), future purchase plans (more than 6 million consumers plan to use soyfoods more, soy hot dog—cheese and frozen dessert consumers most enthused about eating more soyfoods), the soyfood shopper's diet (seek low-fat/cholesterol/sodium/sugar foods, health interests vary by types of soy products tried), other red meat alternatives (most list fish and poultry as red meat alternatives, vegetarian foods favored by consumers of specific soy products).

4. Soyfoods consumers—Attitudes about soyfoods: Attributes of soyfoods (a positive opinion of soyfoods'

health benefits—consumers approve less of taste and ease-of-use, soymilk and soy hot dog consumers most likely to agree that soyfoods are healthy, few consumers have negative health image of soyfoods, soy products users believe in soyfoods' special nutrients, soyfoods easier to use than public thinks, familiarity breeds affection, users of various soy products see cost savings, those who use specific soy products—especially tempeh—cannot find them where they shop, consumers of various types do not feel soyfoods are a problem for allergies), importance of organically grown (more than one-third of soyfoods consumers seek organically grown, attitudes about organic stronger among users of specific products).

5. Soyfoods consumers—Sources of product information: Where consumers first learned of soyfoods (word of mouth is primary source, promotion works for packaged products), why consumers first began to eat soyfoods (novelty and health are the prime motivators, soymilk consumers more concerned about specific health and lifestyle issues—soy burger consumers seeking low-fat meat substitutes), why consumers currently eat soyfoods (consumers less sure why they currently eat soyfoods, tofu—soymilk—and soy burger consumers more likely to have specific reasons), familiarity with health connections (consumers unfamiliar with some of soyfoods' health benefits—familiar with soyfoods' link to cholesterol and heart disease, both users and interested non-users aware of link to cholesterol and heart disease, core consumers not well-informed about other health benefits), sources of information (magazines and newspapers most common source of health information).

6. U.S. population—Why consumers aren't eating more soyfoods: Who is interested in eating more types of soyfoods (consumers would like to try new soyfoods), what would get consumers to eat more soyfoods (taste and lack of cooking suggestions are barriers to use, soy hot dog consumers seeking lower prices—soymilk shoppers seeking more outlets—tofu consumers want recipes, rural—southern and consumers seek lower cost—more affluent seek better taste).

7. Children and soyfoods: How often children eat soyfoods (among soyfoods households—two-thirds of kids age 2-12 eat these products, households with children age 2-12 eat more soy burgers—soymilk, children age 13-18 more likely to be infrequent soyfoods consumers, households with older children tend to choose same products as soyfoods consumers overall), children's attitudes about soyfoods (children's attitudes toward soyfoods are mixed—many parents cannot speak for their children).

8. The tofu shopper: Ways consumers use tofu most often (tofu use most often in stir-frys), why consumers eat tofu (consumers say they eat tofu because it is healthy), what influences brand choice (price—freshness and taste), why consumers aren't eating more tofu (tofu consumers are looking for new ways to use tofu), demographics (most tofu

users are 30-59—those 60 and over avoid it, higher household incomes, tofu household heads are highly educated and have executive jobs, household size and marital status similar to average American, concentrated in more populated areas—East and West coasts).

9. The soymilk shopper: Ways consumers use soymilk most often (most often used as a beverage), why consumers use soymilk (non-specific health features and convenience attract soymilk users), what influences brand choice (freshness, quality, taste drive soymilk sales), why consumers aren't using more soymilk (cost and availability hinder use), demographics (younger households use soymilk, more affluent households, education and occupation, more multiple-person households, more Westerners and those in mid-size MSAs).

10. The soy-based meat alternatives shopper: Why consumers use soy-based meat alternatives (because they are healthier), what influences brand choice (taste and price), why consumers aren't buying/using more soy-based meat alternatives (cost, unfamiliarity, taste and availability hinder use, cost and availability factors are higher among users of specific products), demographics (soy burger users and interested non-users are younger, household income somewhat higher among meat alternatives users, college educated and graduates, white collar employees, two person households for some products—soy burgers mirror U.S. population, soy bacon use higher in East—burgers higher in central region, variations by types of products used).

11. The soy-based dairy alternatives shopper: Why consumers used soy-based dairy alternatives (for health reasons), what influences brand choice (taste primarily), why consumers aren't buying or using more soy-based dairy alternatives (cost and unfamiliarity hinder use), demographics (older and more affluent, educated and professionally employed, smaller size households—more singles, live in moderately populated areas, more concentrated in east and west).

12. Other soyfoods shoppers—Soy flour, tempeh, and miso: Demographics (soy flour consumers older—miso consumers most affluent, soy flour, tempeh and miso found in educated households, occupation status similar to other soyfoods shoppers, smaller households and more singles use tempeh, more soy flour users in low-density areas, east and west coasts for miso and tempeh).

Methodology. Questionnaire. Continued. Address: One Sutter St., Suite 300, San Francisco, California 94104. Phone: 510-935-9764.

3814. Soyfoods Association of America. 1995. A consumer profile of the soyfoods shopper. II. Methodology of collecting information. San Francisco, California. 100 p. *
 • **Summary:** This survey was conducted by Market Facts, Inc., a market research firm based in Chicago, Illinois. Project directors for this report were Tim Redmond

(American Soy Products) and Peter Golbitz (Soyatech, Inc.). Fieldwork was done by Sheri Hoffenberg (Market Facts). Analysis and Report: Sara M. Starr and Peter Starr (Starr Track). Price: SAA members \$475. Nonmembers: \$975.

The survey was conducted in two parts. In the first part a questionnaire was mailed to 20,000 people in the Market Facts database. Of these, 17,715 people mailed back responses, and of these 15,168 were completed and usable. Three questions related to soyfoods: 1. Have you ever heard of: Ten types of soyfoods are listed—Tofu, soymilk, soy flour, tempeh, miso soup stock paste, soy burgers, soy hot dogs, soy bacon or breakfast sausage, soy cheese, and soy frozen desserts. The respondent is asked to check those that he or she has heard of. 2. Which of these ten soyfoods have you eaten 5 or more times in the past year? The same list is repeated and the consumer is asked to check as indicated. 3. "I would eat more soyfoods if... (1) They were more accessible where I shop for food, (2) I knew better what to do with them, i.e. recipes, (3) I was better informed on the health benefits; (4) I thought they tasted good; (5) They were less expensive. Check all that apply.

Part II. From the 15,168 people who mailed back completed and usable responses to part I, 750 people were chosen to participate in a follow-up survey, which consisted of a 4-page questionnaire containing in-depth questions about consumption of and attitudes toward ten different types of soyfoods, purchasing motivations and patterns, and questions about children's attitudes toward soyfoods. The sample was divided into 3 groups. A questionnaire was mailed to a representative sample of 626 people (anyone who indicated they had eaten soyfoods at least 5 times in the past year). An over-quota sample of 67 soymilk users and 57 respondents who indicated that they were soy cheese users. This was done in order to ensure enough completed questionnaires among people who used soymilk and soy cheese. To ensure the sample quality, consumers were again asked about their use of various kinds of soyfoods. Consumers who responded affirmatively to using at least one kind of soyfoods were retained in the mail survey sample. Address: One Sutter St., Suite 300, San Francisco, California 94104. Phone: 510-935-9764.

3815. Brewster, Elizabeth. 1995. The joy of soy: But will it play in Peoria? *Food Processing (Chicago)* 56(7):36. July.
 • **Summary:** The editorial begins: "Up till now, I've never had a good reason to overcome my fear of tofu, the squishy, slimy white stuff that serious vegetarians love to tout as a wonder food. But I may have to eat all my anti-tofu words—and a little tofu, to boot—in the wake of the newfound love affair between soyfoods and health researchers... There's been an explosion of new research results released in the past few months, all headed toward the conclusion that

soyfoods are the greatest thing to hit the food chain since sliced bread.”

Products like tofu, tempeh, TSP (textured soy protein) and miso “are known—if they’re known at all—as exotic Oriental foods eaten by counter-culture vegetarians, not red blooded Americans.” Address: Managing Editor.

3816. Durbin, Barbara. 1995. When food bites back: Part two. *Oregonian*. July. 25. p. FD1. *

3817. Hamlin, Suzanne. 1995. Do you speak tofu or miso yet? *New York Times*. Aug. 9. p. C2. Living section. Wednesday. [1 ref]

• **Summary:** Tofu is a “spongy white block that is a major part of Asian diets... Asian restaurants have increased the popularity of tofu, which sustained much of the Woodstock generation. Still there is notable resistance to the chalky soybean derivative that is often called ‘the cheese of Asia.’

“Johanna H. Dwyer, director of the Frances Stern Nutrition Center at the New England Medical Center Hospitals in Boston [Massachusetts], discovered this resistance during a four-year study on soy protein and estrogen levels in women. She couldn’t find subjects that were willing to consume enough tofu to make the study valid.” So she ended up using a concentrated soy protein in the study. Dr. Dwyer still feels that “tofu is a good part of a healthy diet, even if by itself it doesn’t prove to be a magic bullet. And a good diet is one that is low in saturated fat, high in fiber, and rich in fruits and vegetables.”

Each of the following common soybean products is defined: Soy milk, tofu, tempeh, miso, soy flour, textured soy protein.

3818. Evans, Barry. 1995. Chronology and history of Oak Feed Miso, Inc. and American Miso Co. of North Carolina. Part I. 1947 to 1979 (Interview). *SoyaScan Notes*. Aug. 25. With follow-up talks on 4 Dec. 1999, and 29 June and 2-7 July 2000. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Barry was born on 25 Feb. 1947 in Reading, Pennsylvania. His father was in the army reserves. He has been an avid reader since he was about age 9. He did very well on his SAT exams, and entered Princeton University in the fall of 1965 on an ROTC scholarship; there he majored in history, a subject in which he is deeply interested to this day. After 3 years he left Princeton (in a squabble over a project) and attended Temple University in Philadelphia for one year. Returning to Princeton for a fifth year in college, he graduated in 1970. He has been a “natural foods enthusiast” since he was in college. He entered the U.S. Army in Feb. 1971, living off post at Fort Knox (Kentucky), formally applied as a conscientious objector, and was honorably discharged in Aug. 1972 with full veteran’s benefits. He returned to Temple Univ., enrolled in a PhD

program in history, but left after 3½ semesters. In June 1974 he became a vegetarian—though he regularly eats fish. In 1977, while living in Coconut Grove, Florida, he first heard about macrobiotics and heard Michio Kushi speak in Coconut Grove. He became a devoted follower of macrobiotics, which he still is. Barry heard about the miso venture through Kathy Kashdan, his housekeeper, who was the sister of John Belleme’s ex-wife. Sandy Pukel (pronounced pyu-KEL), who owned the Oak Feed Store, was the pasha (local chieftain) of the large macrobiotic community (satrapy) in Coconut Grove. Sandy was also extremely close to Michio, and they were often in touch. Sandy was probably Michio’s closest friend among American followers of macrobiotics. The day after Michio’s lecture, Barry went to Sandy’s Oak Feed Restaurant (where he had previously spent much time) and asked to see John Belleme, the manager of Oak Feed Store, who was seated at a table in the Oak Feed Restaurant with Sandy Pukel, talking with Edmund Benson about the miso company idea. Barry walked over to the table and introduced himself, and said he might like to be involved with the miso company; neither he nor John knew one another, but their paths were soon to become deeply intertwined.

1978 fall—Sandy Pukel, John Belleme, and Michio Kushi start to discuss the idea of a miso manufacturing company in America. John Belleme became interested in this idea in the fall of 1976 in Brookline, Massachusetts.

1978 fall—Various people buy shares in the new miso company. Jim Kenney \$5,000. Frank Head intended to buy shares, but never did. At either that time or later Edmund Benson invested about \$25,000 of \$50,000 that he had formerly pledged.

1978 fall—Pukel and Belleme make a deal through a real estate agent to buy the property in Rutherfordton, North Carolina, on which the American Miso Co. now stands. As Barry recalls, this was the very first concrete move toward starting a miso company other than John taking Japanese Berlitz lessons, which he started at about the same time. They bought something like an option on the property. They put something like \$1,000 to \$5,000 down as good-faith money and had about 6-12 months to come up with the rest of the down payment of \$15,000 to \$20,000. John Belleme rode up to North Carolina on his motorcycle to help make the down payment and sign the original land deeds *before* Barry invested any money. Maybe John also rode up again later.

1979 Feb. 28—Oak Feed Miso, Inc. is incorporated. The initial directors and officers are Sanford J. Pukel (President, 3030 Grand Ave., Coconut Grove, Florida 33133) and John Belleme (Secretary-Treasurer, 5490 W. 1 Ct., Hialeah, Florida 33012). It is not clear who owns how much stock at this time. Oak Feed Miso was discussing a joint venture with Erewhon to establish the actual factory, which would then be called the Erewhon Miso Co.

1979 April—Five of the six months have passed. Barry (now age 32) becomes involved as an investor in the miso company, contributing initially \$50,000, which more than covers the urgently needed down payment. He thinks Sandy could have found a way to make the next land payment without his money, but perhaps not easily. Barry had not been previously involved in the miso project in any way. Barry believes that by this time Sendai Miso-Shoyu and Mitoku (Mr. Kazama) had very little interest in serious participation in the Erewhon Miso Co. Michio may have wanted them to be involved, but they did almost nothing to demonstrate their interest. At best they may have said “keep us posted.” But nothing ever happened.

1979 Oct.—John and Jan Belleme leave for Japan to study miso making. After “camping out” in Mr. Kazama’s office for a while, he ends up studying with Mr. Onozaki. Barry’s investment helps, but the checks sent to the Bellemes in Japan are written by Sandy Pukel on the Oak Feed Miso account.

1979 Nov. 18—Barry is in a horrific bicycle accident in Pennsylvania. He flies over the handlebars, into a field, breaking 5 vertebrae and 9 ribs. After a 14-hour operation, he spends 6 months flat on his back in the hospital and 1 year in a full-body cast. He was paralyzed from the waist down for quite some time. He did not eat one bite of hospital food; he had all natural-food meals brought in. Continued. Address: Owner, American Miso Co., Inc. and Great Eastern Sun, Asheville, North Carolina 28806. Phone: 704-252-3090.

3819. Evans, Barry. 1995. Chronology and history of Oak Feed Miso, Inc. and American Miso Co. of North Carolina. Part II. 1980 (Interview). *SoyaScan Notes*. Aug. 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1980 June—John and Jan Belleme return to the USA from Japan. A letter shows that by late summer John had started to order miso-making equipment. Barry is sure that the wooden vats come from Arrow Tank Co. (Buffalo, New York) the only traditional barrel maker left in the United States—a very interesting place. The vats are all traditionally made, from old recycled wine barrels and other old wood. Over the years, the miso company has bought all its vats from Arrow Tank Co. The first 35 vats were cypress, but when those ran out, the next five were fir (they took a long time to season), and last 5-6 were redwood (they worked better).

Concerning Joseph and Patricia Carpenter: Barry never met them and he understands that their being asked to leave when the Bellemes returned was a traumatic, landmark event in their lives. Barry was once in prison for 32 months, and was on probation for three years after that, and was awaiting prison for 2 years before he actually went. But when it was over, he let it go and went on with his life. After John returned from Japan, Barry heard about the

Carpenters situation from John and Sandy, who said (generally) that they had not done much while they were there, and they did not seem very motivated. But, in all fairness, maybe they didn’t have any clear instructions as to what they were supposed to do. For him, their whole role in the miso company was always very hazy. But until Barry took a hand in things, the whole company was very “loosey-goosey.” Nobody had any clear instructions as to what was to be done. Only John and Jan Belleme know the details of what actually happened. Sandy is a “conflict avoider” so he would have been ambiguous. John was not a conflict avoider. John, who was never a hippie and was very yang after his stay in Japan, came back to find these two hippie types on the land. “This culture clash may have had a lot to do with it.” Also, there was only one house, so the two families would have had to live together.

1980 summer—Each time the company needed more money, they would come to Barry—since he was the only one they knew who had any and was willing to invest it. This summer, when the building had to be constructed, the equipment ordered and paid for, and land payments made, Barry started to invest a lot more money, and to own more and more shares. When he invested his second \$50,000 he began to pay more attention to who else owned shares. “As I began to sniff the wind a little more, I sensed that I was surrounded by phantom shareholders, and was the only one actually investing any money.” Sandy and Michio didn’t want Barry to be on the board of directors, and they wanted his stock to be Class B, which did not enable him to vote—even though he was now the leading investor. Barry confronted Michio on this while on an airplane en route from Boston to Florida; Sandy was also on the plane. Barry made it plain that he would not invest any more money (he was being asked for about \$90,000 more) unless he could be on the board of directors, and all the stock (not just his) would be voting stock. Michio and Sandy reluctantly agreed. All this came to a head at an important meeting in Miami in the summer of 1980, shortly after John and Jan returned from Japan.

When the Belleme’s returned from Japan, people began to realize that this miso company might really happen. Negotiations had been taking place throughout 1979 and 1980. Three or four versions of an ownership contract / agreement had been presented but never signed; there would be 14-15 more over the next year, and none of those was ever signed either. The negotiations ended with Erewhon’s bankruptcy. The discussions were really between the Erewhon group (comprised of Michio, Aveline, Morris Kirsner—their attorney—and Evan Root) and the Oak Feed Miso group (comprised now of Barry, John and Jan Belleme, and David Young—their attorney). Sendai Miso-Shoyu and Mitoku were not even mentioned; they were out of the picture. Mr. Kazama, owner of Mitoku, probably feared and doubted the potential new American miso

company. “The issue was: Who would control the company, Erewhon or us? And how many shares would each person or company own?” Each group wanted to own a majority of the shares. This meeting went on for several days at various places, including restaurants, the Oak Feed Store, and the office of David Young—the Oak Feed Miso group’s attorney. Note: See also meeting of 27 Sept. 1981.

Barry, who was on crutches, flew in from Reading, Pennsylvania, accompanied by his close friend and confidant, Saul Goodman, a macrobiotic healer and shiatsu practitioner. Barry could not travel by himself, and this was the first trip he had taken after his bike accident. David Young was concerned that the Oak Feed group was being asked to put up almost all of the money yet would not have control; yet he was ambivalent. Sandy Pukel was a member of the Oak Feed Miso group, but he was also ambivalent; he was really on Michio’s side. He felt that Erewhon’s participation was absolutely vital, and whatever had to be given up to get that participation was appropriate. Everyone should trust in Michio, and Michio would provide.

Sandy was and is one of Michio’s closest friends and confidants in the whole world. Sandy and Mona Schwartz were the co-heads of the Florida Macrobiotic Association. An excellent macrobiotic teacher and cook, Mona ran a study house in the Miami area, where Barry ate many of his meals for the first several years that he was practicing macrobiotics. So did Dr. Keith Block. Mona first told Barry how close Michio and Sandy were, and how much each influenced the other’s thinking.

Barry recalls that Michio and his attorney, Morris Kirsner, were so demanding and unreasonable in what they wanted that even Sandy hesitated. He wanted to give them more than Barry and John, but he didn’t want to give them everything they wanted. Negotiations dragged on and on because they were taking this unrealistic negotiating stance. So it was easy for Barry and John, who saw increasing signs of weakness in Erewhon, to begin to fight a war of attrition and prevent anything from happening.

The Board at that time had five members—including John Belleme, Sandy Pukel, Edmund Benson, Barry, and one other person—which was probably not Michio. Only four other people besides Barry invested money in the miso company: Edmund Benson \$20,000, Frank Head (who started Mountain Ark) \$5,000, the Japanese cook at the Oak Feed Restaurant (Yozo Masuda) \$10,000, and Jim Kenney \$5,000. Barry bought out the first two, and Jim died before the company began operations. Sandy Pukel, as one of the company’s founders, got a number of “founders shares” for free, which Barry eventually bought back from him.

1980 fall—A document shows that at this time “John and Jan go on Erewhon payroll and start construction of Erewhon Miso in Rutherfordton, North Carolina.” They begin by leveling the land. They went on the payroll of the Erewhon Trading Co., not the Erewhon Miso Co., since the

latter company did not have a payroll and never really existed. Of course, Michio and Aveline owned Erewhon and all or most of its stock. Barry recalls that Erewhon was supposed to put up a certain amount of money for their share of the joint venture, and then provide the additional services of buying all miso made by the new miso company, packaging, and distributing it.

Barry recalls that much of the automatic miso-making equipment came from Japan—some or all of it from the Fujiwara Brewing Co. in Hiroshima. John visited them in 1983 when the miso company was considering adding a soy sauce plant near the miso plant. Continued. Address: Owner, American Miso Co., Inc. and Great Eastern Sun, Asheville, North Carolina 28806. Phone: 704-252-3090.

3820. Evans, Barry. 1995. Chronology and history of Oak Feed Miso, Inc. and American Miso Co. of North Carolina. Part III. 1981 to 1982 (Interview). *SoyaScan Notes*. Aug. 25. Conducted by William Shurtleff of Soyfoods Center. • **Summary:** Continued: 1981 Jan. 31—Oak Feed Miso, Inc. IRS tax returns (for the fiscal year ending Jan. 31) show losses of \$89,000 for the last year with no sales. Note: The land was purchased on a mortgage, with about \$20,000 down payment.

1981 March—The miso building is essentially complete, but some equipment still had to be ordered—from Japan and the USA.

1981 early—Michio and Aveline Kushi can see that Erewhon is heading for bankruptcy. They try urgently to raise money. Sandy Pukel loans the Kushis \$100,000—and thereby wins their eternal gratitude and friendship. Sandy never gets the money back. Barry is upset, because he believes that this was money he gave to Sandy as his investment in the miso company. Essentially, Barry then had to give Sandy more money which he finally did invest in the miso company—as follows: Sometime later in 1981, to make things more complicated, Sandy (who is now short of cash) asks Barry if he would be willing to invest in Oak Feed Store and Restaurant with the understanding that Sandy will use the money to buy the shares he had pledged to buy in Oak Feed Miso, Inc. Barry accepts the deal, and Sandy invests the \$80,000 to \$90,000 in Oak Feed Miso—which makes Barry happy.

1981 July—The opening ceremony for Erewhon Miso Co. is held at Rutherfordton, North Carolina. This was “the crowning moment of the early phase of the miso company. We were all still together at that point, including Michio. We had a big, beautiful sign out on the road in front of the factory, put up for the opening ceremony, that read ‘Erewhon Miso Co.’—even though that was never the name of the company. The delegation from Erewhon was Michio, Aveline, and Evan Root. Evan was overwhelmed by the emotion of it all—just crying like a baby. John and Jan Belleme were there, as was a woman from Asheville who

did the photography. Sandy Pukel must have also been there, though Barry has no clear recollection of this. Yet tension between Barry and Sandy had been growing. “Without Sandy and Michio, the project never would have happened.” By now many people could see that Erewhon was headed for bankruptcy, but “Even at the time of the opening, everyone thought Michio would pull another rabbit out of his hat in the end,” to save Erewhon. In late summer and early fall Barry attended several meetings called to discuss Erewhon’s perilous financial condition. These meetings were all held in the area of Boston, Massachusetts, sometimes in the office of Morris Kirsner, the Kushi’s attorney. Barry was invited largely because they hoped he would help bail out Erewhon.

1981 Aug.–John and Jan Belleme start making miso in North Carolina; the soybeans and grains are contributed by Erewhon Trading Co. But by August or September the Kushis can see that Erewhon’s bankruptcy is imminent, so they stop sending John his paycheck and additional raw materials. This creates a crisis; everything must be rethought with Erewhon out of the picture. John may have sent out feelers to Westbrae and Eden to see if they wanted to take over Erewhon’s role as distributor of the miso—they didn’t.

1981 Sept. 27–At an annual meeting of Oak Feed Miso, Inc. all shares are converted to Class A voting shares. Major shareholders are: Barry Evans 1400 shares. Sandy Pukel 1400 shares. John Belleme 900 shares.

1981 Nov. 18–Erewhon Trading Co. files for bankruptcy protection under Chapter 11 of the federal Bankruptcy Act. For the next several months, “various wolves were circling around, trying to grab hold of the half-dead body. Finally U.S. Mills and Nature Food Centres Inc. grabbed it and dragged it off to its lair.” As part of the deal, Michio had to agree that he would only do endorsements through the new owners. So Michio, who had lost control of his own destiny for quite some time, could not be involved with the miso company any more. Barry thinks Sandy realized that and his heart went out of the miso company project at that point. Consequently, all deals between the miso company and Erewhon come to an end. Barry thinks that Erewhon Trading Co. invested a total of about \$15,000 in the miso company in the form of payments and miso ingredients. After Erewhon was purchased out of bankruptcy, the new owners, Chuck Verde and Cynthia Davis, never got this investment back. When they called, Barry took the position that the costs and difficulties the miso company had endured because of Erewhon’s collapse were much greater than \$15,000. Barry added that if they took the matter to court, he would sue them for breach of contract. In fact, the miso company barely survived that collapse.

Over the past four months Barry, who admires Michio as a spiritual leader, has come to realize that he cannot be counted on to help establish the new miso company. He has

grown tired of all the difficulties with Erewhon and Michio; as a practical businessman, he was “a nightmare.”

1981 late–Marty Roth now enters the picture. When John Belleme left his job as manager of Oak Feed Store to study miso in Japan, Jim Kenney took over from him. Jim was an epileptic; while traveling on vacation in East Asia about a year later, he died tragically at about age 27–Barry heard he choked on the seed of an umeboshi salt plum that he was using to try to control an epileptic fit. So in about July or August 1981 Sandy brought in Marty Roth, who had been running the Natural Cafe in Santa Fe, New Mexico. Marty was soon working as manager (or assistant manager) of Oak Feed Store. Marty (a very inventive and creative guy) and Barry (a co-owner of the store) quickly find they get along well and work together effectively. Marty didn’t want to stay in Miami, and his job with Sandy wasn’t working out. When Marty told this to Barry, Barry said that he was planning to establish his own import company in North Carolina, and that company was also going to take over distribution for the miso factory. It is not crystal clear to what extent Barry lured Marty away from Oak Feed Co. and to what extent Marty would have left anyway.

1981 Dec.–Great Eastern Sun (GES) is organized. The first employee and manager is Barbara Arrow, who arrived in Dec. 1981.

1982–Jan. GES orders its first container of natural foods from Mitoku (Mr. Kazama) in Japan.

1982 Jan. early–Marty Roth moves from Florida to North Carolina to run Great Eastern Sun (GES)

1982 Jan.–Barry makes another investment in the miso company and thereby replaces Sandy Pukel as the largest shareholder. Barry buys out remaining shareholders—except Jim Kenney who is no longer living. Sandy proposes to Barry a deal whereby he would trade Barry all of his stock in the miso company for all of Barry’s stock in Oak Feed Store. Barry accepts, but with the added condition that Barry could import goods from Mitoku in Japan.

1982 Jan. 4–Barry Evans sends out a letter on American Miso Co. letterhead to potential customers that begins: “Dear Friends—We at The American Miso Company are proud to announce the opening of our miso shop in Western North Carolina.” It ends: “The Lindenself Foundation, doing their business as Linden’s Elf Works, located in Piedmont, North Carolina, has been appointed as the sole agent in marketing and distribution of The American Miso Company brand products... Your phone contact is John Troy at... 919/364-2723. Enclosed is the Linden’s Elf Works distributor price sheet which includes all the pertinent information for your upcoming Spring catalogue. With kindest regards, Barry Evans, President.” When Marty Roth sees this announcement, he argues that GES should distribute AMC’s miso; Barry agrees. So John Troy and Elf Works never did distribute any AMC miso.

1982 Jan. 31–Oak Feed Miso has losses of \$67,000 for the previous year with no sales. Total loss: \$157,000.

1982 Feb. 26–Sandy Pukel and Barry Evans sign an agreement whereby Sandy gets out of Oak Feed Miso and Barry gets out of Oak Feed Store and Oak Feed Restaurant by an exchange / trade of stock. Barry recalls that Sandy left the miso company reluctantly for two reasons. First, because he saw the miso company as “his baby” and he liked to be in control—not so much because he saw it as a company with a bright and profitable future. And second, because Michio wasn’t involved any longer, and couldn’t be because of what had happened to Erewhon. Barry never asked Sandy (or any of the other shareholders) if he could buy their shares. They all approached him with the idea. First, for example, Edmund Benson wanted to get his money back, so Sandy bought his stock. Yozo Masuda’s stock was included in the deal with Sandy.

1982 March 22–Great Eastern Sun is incorporated.

1982 April 19–At the annual meeting of the shareholders of Oak Feed Miso, the name is officially changed to American Miso Co. This change is filed with the state of Florida on 5 May 1982, and signed by Barry Evans and Janet Belleme. The final stamp of filing is 19 May 1982. Barry notes: “In numerology, this date (May 19) is a 44 number, since $5 + 19 + 1 + 9 + 8 + 2 = 44$. Forty-four is the number of ultimate business success.” Barry did not plan to incorporate the company on this date. “It was just the order of the universe.”

1982 May 18–Great Eastern Sun sells its first food products to a natural food store; they were imported from Japan.

1982 mid- to late- The principals of the American Miso Co. are now Barry Evans, John and Jan Belleme, and Mrs. Kenney. Barry started with 1,400 shares, got 1,400 from Sandy, 100 from Yozo, 250 from Edmund, and 200 from Gary Dukeman (a friend of his)—for a total of 3,350. John and Jan had about 850 shares. John had been given about \$20,000 worth of shares as a founder of the company, and because he went to Japan to learn how to make miso, and because he had worked for a modest salary (less than \$20,000/year) as a miso maker in North Carolina. Mrs. Kenney had 50 shares. On a percentage basis, Barry owned 78.9% of the miso company, John and Jan Belleme owned 20%, and Mrs. Kenney owned the rest. Continued. Address: Owner, American Miso Co., Inc. and Great Eastern Sun, Asheville, North Carolina 28806. Phone: 704-252-3090.

3821. Evans, Barry. 1995. Chronology and history of Oak Feed Miso, Inc. and American Miso Co. of North Carolina. Part IV. 1983 to present (Interview). *SoyaScan Notes*. Aug. 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1983 Oct. 1–Barry desires to buy and John and Janet Belleme desire to sell all their 900 shares in the American Miso Company. John agrees to work

as a consultant for 6 months and to train a person to take his place. Barry wants to run the company in a more “commercial” way than John does, starting with major price increases.

1984 Jan. 31–American Miso Co. has gross receipts or sales last year of \$61,941, annual losses of \$68,367, and total losses from day one of \$306,633.

1985 Jan. 31–American Miso Co. has sales last year of \$107,000, annual losses of \$21,000, and total losses from day one of \$327,000.

1985 Dec.–John Belleme leaves American Miso Co. because of a conflict with Barry Evans. Don DeBona, who arrived in the spring of 1985 and worked with John for 6 months, takes over. A year or two before John left, Sandy purchased his shares in American Miso Co.—because John wanted him to. John felt that Barry was making decisions with which he did not agree, and that he shouldn’t have to suffer financially if they turned out to be bad decisions. Barry did not want John to leave, but neither did he want John to be in control of the business. Barry recalls that there was a big conflict and bad feelings between him and John at the time John left.

1986 Jan. 31–American Miso Co. makes its first profit during the past year of \$22,000. Gross revenues or sales were \$214,000 and total losses from day one decrease to \$304,000. Notice the big jump in sales. Barry instituted a 50-70% price increase, over John’s protests. Note: Barry never went to business school, but he learned to be a good businessman in the “school of hard knocks.”

1987 Jan. 31–Sales last year of \$262,000, profit of \$101,000 (up 4.6 fold), and total losses to date of \$203,000. Now—sales only for the following fiscal years: \$252,000 in 1988, \$275,000 in 1989, \$315,000 in 1990.

Then the fiscal year end changes to Aug. 31 to coincide with that of Great Eastern Sun. Sales are \$161,000 in 1991, \$392,000 in 1992, \$435,000 in 1993, \$505,000 in 1994, and \$550,000 in 1995. In 1995 the total losses carried forward go to zero for the first time. In other words, including his salary, Barry first broke even this year.

1992 Jan. 2–Barry takes a federal vacation, returning to the company on 1 Sept. 1994.

1997 Oct.–Don DeBona decides to leave AMC. The broad issue was control. It was a sad day for Barry. Don owned no shares in the company and, after having been there for ten years, he wanted to own a significant part of the company, and be able to build up equity, if he was to continue. Barry was unwilling to give him that ownership, so he quit—but continued to live in his house on the property. “It was not a very pleasant parting.”

2000 July–In the early years, no koji was made each year during the hot months, from about June until August or mid-September. Now, however, the koji-makers are so skilled that they make it during those months, but outside of the koji room on open tables. This helps to meet the steadily

growing demand. Today, with a crew of eight (including 4 packagers), AMC makes about 350,000 lb/year of miso (about 7,600 lb/week) and might possibly be able to expand this to 450,000 lb/year with its existing buildings.

2000 July—Almost all the early American Miso Co. records (including payables, receivables, invoices, payroll records, etc.) are kept in many cardboard boxes in a storage area in Asheville—but they are not well organized. Records from the first year or two (1979-80) may be missing entirely. One of these days Barry would like to get these AMC records organized. may be missing. The Great Eastern Sun records are intact from the beginning and are well organized.

Barry: “I have tried to tell you this story in a fair and dispassionate way. No one should think that I was the dogged person hanging on, or the prime mover of everything. But it was really just the flow of circumstances. I was just swept along, and countless times I was scared to death and wished I had never gotten involved, and spent sleepless nights ruing the fact that I had made such a fool out of myself, and thought things would never work out, and would end in disaster.” But actually the company has experienced nice, steady growth.

Note: Barry planned to buy South River Miso Co. within 1-2 weeks after this interview and was 90% sure the deal would go through—but it never did. Address: Owner, American Miso Co., Inc. and Great Eastern Sun, Asheville, North Carolina 28806. Phone: 704-252-3090.

3822. Iwata, Masakazu. 1995. Re: The pioneering work of Gonshiro Harada (died 1943) with koji, tofu, miso, natto, and okara in California. Letter to William Shurtleff at Soyfoods Center, Aug. 25. 1 p. Typed, with signature.

• **Summary:** Mr. Iwata is the author of *Planted in Good Soil: A History of the Issei in United States Agriculture* (1992). Yesterday he contacted Fred Harada, “whose father had a tofu manufacturing establishment in the Fresno area... He is a good source of information. His father, Gonshiro Harada (died 1943), an Issei (first-generation Japanese immigrant to the USA) from Hiroshima Prefecture, was a master koji-maker who learned his trade in Japan. He opened a store in Fresno in the 1920s but went broke during the depression of 1929; he was a creditor unable to collect from credit customers. Subsequently, in 1939, he relocated in Fowler, about 10 miles southeast of Fresno, where he and his wife and family (nine children) established the Harada Tofu Co. and manufactured such foods as tofu, kamaboko, agé, miso, natto, okara, and other related items, peddling them to the Japanese farmers in a broad area of Central California. Of course the company handled vegetables and other grocery goods on their route consisting of several hundred customers.

“Fred indicates that his father was an innovative entrepreneur who made much of his own tofu-making

equipment.” Fred believes his father got at least some of his soybeans from rice growers in the Colusa region, who grew soybeans as a sideline. “He mentioned that the Koda rice farms in South Los Baños may have had some acreage in this crop.”

Fred Harada can be contacted at 637 North 6th Street, Montebello, CA 90640. Phone: 213-721-8455. Best to contact him after 7:00 p.m. Address: 879 North Vail Ave., Montebello, California 90640. Phone: 213-723-4389.

3823. Iwata, Masakazu. 1995. Re: Early soybean cultivation by Japanese rice growers in central California around the time of World War I. Letter to William Shurtleff at Soyfoods Center, Aug. 25. 1 p. Typed, with signature.

• **Summary:** Yesterday Dr. Iwata contacted Fred Harada, “whose father had a tofu manufacturing establishment in the Fresno area... He is a good source of information... My conjecture would have been that much of the soybeans for the tofu came from abroad, but according to Fred, some of the Japanese rice growers, whose heyday in rice farming was around the time of World War I [1914-1918] in the Colusa region, grew soybeans as a sideline. He mentioned that the Koda rice farms in South Los Baños may have had some acreage in this crop.

“I have a section in my book (*Planted in Good Soil: A History of the Issei in United States Agriculture*. New York: Peter Lang Publishing, 1992) on the Koda farms, utilizing information from interviews and the Keisaburo Koda biography in Japanese (*Koda Keisaburo Den*, 1965), but found no mention of soybean production. You might contact Edward Koda (P.O. Box 6, South Dos Palos, California 93665), the son of the founder, about this. I believe the operation is now in the hands of Ross, the third generation heir.

Fred Harada can be contacted at 637 North 6th Street, Montebello, CA 90640. Phone: 213-721-8455. Best to contact him after 7:00 p.m.

Update: Letter from Dr. Iwata. 1996. Dec. 6. “Most likely the Chinese who arrived in California around the time of the Gold Rush of 1849 introduced soybeans from China.” Address: PhD, 879 North Vail Ave., Montebello, California 90640. Phone: 213-723-4389.

3824. Mountain Ark Trading Company. 1995. Catalog—September-December 1995 [Mail order]. Fayetteville, Arkansas. 30 p. 27 cm.

• **Summary:** Soy-related products in this mail order catalog include: Miso, soy sauce, tempeh, tofu, black soybeans, yellow soybeans, tofu dressings, natto miso. Also: Sea vegetables, amaranth, quinoa, teff, blue corn. The general manager is Nick Masullo. Address: P.O. Box 3170, Fayetteville, Arkansas 72702. Phone: 1-800-643-8909.

3825. Orthoefer, Frank T.; Liu, Keshun. 1995. Soybeans for food uses. *International Food Marketing & Technology (Germany)* 9(4):4-8. Aug. [5 ref]

• **Summary:** Contents: Introduction. Traditional soy foods: Soy milk, tofu, toasted whole soybeans and full-fat soy flour, soybean sprouts, yuba, soy sauce, tempeh, natto, miso. Soy protein ingredients: Soy grits and flour, soy protein concentrates, soy protein isolates. Soy nutrition: Soy protein, fat and calories, phytochemicals. Food bean market. Summary.

Two “different types of soybeans have emerged: oil beans and food beans. This is particularly true in the US soy market...”

Of the fourteen phytochemicals, seven are present in soybeans. These seven are phytates, isoflavones, carotenoids, coumarins, triterpenes, lignans, and phenolic acids. Phytochemicals have been shown to affect human health as much as vitamins and minerals, and many of them have anti-cancer properties. The discovery of phytochemicals may change how the nutritional value of food is assessed.

The world market for soybeans for food use is estimated at about 1 million metric tons (tonnes). In Japan alone about 830,000 tonnes are made into soyfoods as shown in a pie chart as follows: Tofu (552,000 tonnes, 63.4%), miso (180,000 tonnes, 21.5%), natto (90,000 tonnes, 10.7%), soymilk (10,000 tonnes, 1.2%), soy sauce (5,000 tonnes, 0.6%), and others (22,000 tonnes, 2.6%). In the USA the food bean market is estimated at 50,000 tonnes. Other major markets for food beans are in Korea, China, Taiwan, Hong Kong, Singapore, Malaysia, and Thailand. Food-grade soybeans can be sold by that the growers at a premium of 5-20% above the base price. The demand for food beans is increasing steadily. Address: 1. Vice President, R&D, Riceland Foods, Stuttgart, Arkansas; 2. Project Leader, Soy Food Lab., Jacob Hartz Seed Co., Stuttgart, Arkansas.

3826. Stevens, Jane Ade; Stevens, Roger. ed. and comp. 1995. U.S. soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 31 p. 28 cm.

• **Summary:** This first edition of the directory contains more than 270 company listings. The cover is checkerboard red and white. Contents: Forward [sic, Foreword]. How to use the Soyfoods Directory (incl. Internet access). Soyfood descriptions (alphabetical): Edamame (Sweet beans), food use soybeans (whole soybeans), organically grown soybeans, isolated soy proteins, lecithins, meat analogs (meat alternatives), miso, natto, nondairy (soy) frozen desserts, okara, soy cheese & yogurt, soy flour & grits, soy grits, soy meal & flakes, soy nuts, soy oil, soy protein concentrates, soy sauces (tamari, shoyu, teriyaki), soymilk, tempeh, textured soy proteins, tofu & products. Composition and nutrient content of soyfoods (large table, p. 7). Soybean products chart: From whole soybeans, from

soybean meal, from soy oil and lecithin. Soyfood companies by product (products listed alphabetically).

Soyfood companies (alphabetical by company name; Each listing contains address, contact, phone, soy products, product names, distribution, to locate product, classification). Soyfood companies by state (alphabetical by state; California has by far the most). Professional associations and industry information resources. U.S. soybean facts. Soyfoods directory survey.

This directory's address on Internet's World Wide Web is <http://www.in.net/soy>. For more information or suggestions, call 1-800-275-7679. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 1-800-275-7679.

3827. Tanny, Armand. 1995. Soy for salubrity. *Muscle & Fitness* 56(8):74. Aug. *

• **Summary:** Soybean products.

3828. Fallon, Sally W.; Enig, Mary G. 1995. Soy products for dairy products? Not so fast. *Health Freedom Newsletter (Monrovia, California)* 14(5):12-20. Sept. [35 ref]

• **Summary:** Contents: Introduction. History of the bean. Fit for human consumption? Marketing the soybean? Processing denatures and dangers remain. Soy formula not the answer. Fabricated soy foods. Cancer preventing or cancer causing? Soy products are not complete. Only fermented soy products are safe. Another look at milk. Processing is the problem [that transforms healthy milk products into unhealthy ones]. Quality dairy products are available. Butter is a healthy food. Homemade formula best for babies. Contains two recipes for homemade formula: Milk based formula (based on unhomogenized raw organic milk plus lactose, cod liver oil, coconut oil, etc.). Milk free formula (based on 3½ cups of homemade broth, made from beef, lamb, chicken, or fish).

This article is written to scare people “who have turned to soy products as substitutes for dairy products,” and to sing the praises of natural (fresh, raw, and organic) dairy products. It is loaded with so much incorrect information and false conclusions about soybeans and their alleged dangers to human health that one does not know where to begin in starting to refute them. To take just a few such statements: (1) “The Chinese did not eat the soybean as they did other pulses (legumes) such as the lentil, because the soybean contains large quantities of a number of harmful substances.” Fact: The soybean, processed into a host of soyfoods using simple technologies, has been the main legume consumed in China since ancient times. It has long been referred to as “The cow of China.”

(2) Trypsin inhibitors in soybeans are “not completely deactivated during ordinary cooking and can produce serious gastric distress, reduced protein digestion and chronic deficiencies in amino acid uptake.” Facts: The

SoyaScan database contains 386 articles on trypsin inhibitors. When active, these proteins inhibit trypsin, a digestive proteolytic enzyme secreted by the pancreas, which helps us to digest proteins. Fortunately, trypsin inhibitors are almost completely deactivated by the typical cooking of soybeans to make soyfoods. There is no scientific evidence that the small percentage remaining has any adverse effects on human health, digestibility, or amino acid absorption. A considerable body of research, starting in the 1970s, shows that trypsin inhibitors have anti-cancer properties.

(3) “The soybean also contains hemagglutinin [sic, hemagglutinins], a clot promoting substance that causes red blood cells to clump together.” Fact: Like trypsin inhibitors, hemagglutinins are inactivated by ordinary cooking and have been a non-issue in the scientific literature for at least 10 years.

(4) Soybeans are high in phytic acids or phytates, which can cause health problems. “Only a long period of fermentation will significantly reduce the phytate content of soybeans.” “Oriental children who do not get enough meat and fish to counteract the effects of a high phytate diet, frequently suffer rickets, stunting and other growth... Parents would do well to ask their six-year old boys whether they would prefer to be six-foot-one or five-foot-seven when they grow up, before substituting tofu for eggs, meat, and dairy products.” Fact: Phytates and phytic acid are a two-edged sword. They appear to inhibit mineral absorption by forming tight chelates with a variety of polyvalent metals such as calcium, zinc, and iron. By virtue of forming a unique iron chelate, they suppresses iron-catalyzed oxidative reactions and may serve a potent antioxidant function in the preservation of seeds. By the same mechanism, dietary phytic acid may lower the incidence of colonic cancer and protect against other inflammatory bowel diseases. Twelve records in the SoyaScan database show phytic acid to have anticancer activity. In addition, they are one source of dietary phosphorus in the soybean.

(5) Aluminum content of soy formula is 10 times greater than milk-based formula, and 100 times greater than unprocessed milk. Aluminum has a toxic effect on the kidneys of infants, and has been implicated as causing Alzheimer’s in adults. Fact: Aluminium is the most abundant metal in the earth’s surface. It is harmless to humans except for infants with kidney failure—who should not drink soymilk. There is no solid scientific evidence indicating that aluminum causes Alzheimer’s disease; that theory, advocated by a few scientists 10 years ago, is no longer being pursued.

(6) Allergies to soy are almost as common as those to milk. Fact: Roughly 10 to 15 times as many infants are allergic to cow’s milk compared to soymilk. Since 1910 soy-based infant formulas have saved the lives of many

infants whose mothers could not breast feed and who were allergic to cow’s milk

The authors conclude that only traditional fermented soy products such as miso, natto, and tempeh, are safe.

About the authors (autobiographical): Sally W. Fallon, M.A. lives in Washington, DC, with her husband and 4 children. A member of the Price Pottenger Nutrition Foundation Advisory Board, she is a regular contributor to their quarterly journal. Mary Enig, PhD, is an expert in the field of lipid chemistry who has conducted many studies on *trans* fatty acids. She is also well known for a career of anti-hydrogenation and anti-margarine research and writing, with funding from the dairy industry. A large percentage of America’s margarine is made from soy oil.

Update: Printout of website named Mercola.com sent to Soyfoods Center by Sjon Welters of Cabot, Vermont. 1998. Nov. 6. The title of this 6-page website is “Avoid soy: Concerns regarding soybeans.” On the last page we read: “The above information was abstracted from an article written by Sally Fallon and Mary Enig, PhD. (an international expert renown [sic] in the field of lipid chemistry) for Health Freedom News in September of 1995.” Address: 1. M.A.; 2. PhD. Phone: 818-357-2181.

3829. Lamport, Rick. 1995. Soy to the world. *Granary News (Sarasota, Florida)*. Sept. p. 1, 3, 10-11, 14-15, 18-19. [1 ref]

• **Summary:** A humorous, fun-poking potpourri and overview of soyfoods and some of the new research on their medical benefits. “In reputation, tofu, tempeh, and miso are the Gabor sisters of natural foods, i.e., thought to have bad taste and serve no purpose. But in reality, they are more like the Bridges brothers. They take on many roles and always give an unusually good performance. Pity the poor bean curd. It deserves our consideration, use and approval. Tofu is not really an acquired taste. It is more an acquired texture.”

The author then coins some new soy words and phrases—which sound best pronounced with a Yiddish accent: Soyloiloquy, psycho-soymatic, Moonlight Soynata, Soyviet Union, soyilent majority, soyentific validation, lunasoy, soyonara.

A photo (p. 1) shows the rear end of a “Soyota” [Toyota] automobile bearing the license plate “Tofu Me—Florida Granary.”

3830. SunRich. 1995. SunRich (Ad). *Soya Bluebook Plus 1995-96*. p. 59.

• **Summary:** This one-third page black-and-white ad lists three categories of products: (1) Identity preserved specialty soybeans and grains: IP corn; Food quality soybeans available for soymilk, tofu, tempeh, miso, natto, sprouts, and soy sauce; Shipments available in containers, rail or bulk barge.

(2) Soyamilk powders: Spray-dried soymilk and tofu; Soy/dairy milk.

(3) Sweet Beans: Frozen green soybeans; Podded (*edamame*) or peeled (*mukimame*).

* Certified organic soybeans & products available.

Address: P.O. Box 128, Hope, Minnesota 56046. Phone: 1-800-342-6976 or 507-451-3316.

3831. Wilson, Lester A. 1995. Soy foods. In: D.R. Erickson, ed. 1995. *Practical Handbook of Soybean Processing and Utilization*. Champaign, Illinois: American Oil Chemists' Society Press; St. Louis, Missouri: United Soybean Board. viii + 584 p. See p. 428-59. Chap. 22. [41 ref]

• **Summary:** Contents: Introduction. Soybean chemical composition. Unfermented soy foods: Soymilk, tofu (momen, kinugoshi or silken, packed tofu, aseptically packaged tofu, deep-fried tofu, kori tofu or dried-frozen tofu), other nonfermented soy foods (yuba, kinako or roasted whole soybean flour, fresh {edamame} and canned soybeans, texturized soy protein-based foods). Fermented soy foods: Miso, shoyu (soy sauce), natto, tempeh, sufu. Japanese Agricultural Standards. Identity preservation and transportation. Soybean quality characteristics: Overview, judging quality (tofu, miso, natto). Note: This is the earliest English-language document seen (Dec. 2005) that contains the term "roasted whole soybean flour."

Tables: 1. Nonfermented soy food products and common names by country. 2. Fermented soy food products and common names by country. 3. Chemical composition of soy foods. 4. Per capita annual consumption of soybeans (kg) in selected Asian countries (China, Indonesia, Japan, Korea, Malaysia, Philippines, Thailand; for the years 1968, 1978, 1988, 1994).

Figures: 1. Flowchart of refrigerated and shelf-stable soymilk production. 2. JAS seal of approval. 3. Diagram of equipment used in large scale tofu production (each piece of equipment is numbered and labeled). 4. Flowchart of regular tofu production. 5. Graph showing percent transmittance of whey versus coagulant concentration for soymilks at 6% solids made from Weber, Vinton, and Amsoy soybeans. A concentration of 0.023 N was selected as the optimum coagulant concentration, since it gave the most transparent whey. 6. Graph showing percent transmittance of whey versus coagulant concentration for Amsoy soymilk at concentrations of 4, 5, and 8% solids. Concentrations of 0.018N, 0.019N, and 0.035N, respectively, were selected as optimum coagulant concentrations. 7. Flowchart of kinugoshi (silken) tofu production. 8. Flowchart of packaged tofu production. 9. Flowchart of aseptically packaged tofu production. 10. Flowchart of kori (dried-frozen) tofu production. 11. Diagram of equipment used in large scale production of dried-frozen tofu (each piece of equipment is numbered and labeled). 12. Flowchart of miso production. 13. Diagram of

the interactive factors producing the characteristic attributes of miso. 14. Flowchart of tempeh production. Address: Iowa State Univ., Ames, Iowa.

3832. Albertson, Ellen. 1995. Super soy: The newest miracle food. *Self*. Oct. p. 148-151, 204. [1 ref]

• **Summary:** The subtitle continues: "Okay. One more time. Scientists are telling us they've found the nutritional Holy Grail, a simple food that prevents heart disease and cancer. Do we believe them? Yes!"

"Soy may be so effective that it actually crosses the line from nutritional to medicinal."

This article begins with a summary of the meta-analysis by Dr. James Anderson published in the *New England Journal of Medicine* (3 Aug. 1995). It reported soy in the diet can significantly lower high cholesterol." It also notes that: (1) "Genistein, a powerful natural chemical unique to soy," may stop the growth of cancer cells. (2) The natural estrogens in soybeans may "help alleviate postmenopausal symptoms." In Japan, where soy is typically eaten daily, there is no word for "hot flashes."

Photos and definitions of various soyfood products are given: Tempeh, soy flour, tofu, textured vegetable protein, soy milk. A section titled "15 delicious ways to add soy to your diet," gives serving suggestions for these and other soyfoods at breakfast, lunch, snack, and dinner.

A full-page table on p. 204 rates the best (B) and worst (W) of the following, with nutritional information, taste, texture, and comments: Hot dogs: B-Yves Veggie Cuisine Tofu Wieners. W-Soy Boy Right Dogs. Burgers: B-Boca Burger. W-Green Giant Harvest Burger. Sausage: Lightlife Lean Links Italian Sausage. W-Fantastic Foods Nature's Sausage. Bacon: B-Yves Veggie Cuisine Canadian Veggie Bacon. W-Lightlife Fakin' Bacon. Luncheon Meat: B-Yves Veggie Cuisine Deli Slices. W-Lightlife Smart Deli Thin Slices-Roast Turkey Style. Plain soy milk: B-Westbrae Natural WestSoy 1% fat. W-Edensoy Extra. Soy cheese: B-Sharon's Finest Cheddar Style TofuRella. W-Soymage Cheddar Style Cheese Alternative. Chili: B-Midland Harvest Chili Fixin's. W-Fantastic Foods Vegetarian Chili. Pizza: Nature's Highlights Rice Crust Pizza. W-Farm Foods Pizsoy Cheese Style. Frozen Dinners: B-Amy's Tofu Vegetable Lasagna. W-Hain Pure Foods Pepper Steak. Dessert: B-Living Lightly Chocolate Almond Non Dairy Frozen Dessert. W-White Wave Dairyless Vanilla "Yogurt."

3833. Paine, Heather. 1995. Processing trends in Europe. Paper presented at the Third Bi-Annual SoyAfrica Conference. 14 p. + 11 p. of tables, charts, and graphs. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. [10 ref]

• **Summary:** Contents: Introduction. History and production. The benefits of soya: Nutrition, functional properties. Products & applications: oil-based products

(soya bean oil, soya lecithin), soya protein products (full-fat soya flours, defatted soya flours, soya concentrates, soya isolates), soya fibre products (incl. soy bran), whole soybean products or soya foods (soya milk or drink, tofu, yuba, soya sauce, miso, tempeh, natto). Trends and problems: Growing market for soy protein ingredients, U.S. soyfoods market, soymilk sales, problems of quality and image and legislation. Address: Editor, Soyfoods, England.

3834. United Soybean Board. 1995. The absolutely astounding supermarket soybean search. Chesterfield, Missouri: USB. 6 panels. 28 cm.

• **Summary:** This colorful, six-panel foldout contains a panoramic 4½-panel illustration of the inside of a modern supermarket. Each of the aisles and sections are marked. Additional signs show the many places that soy appears in the store.

The bottom half of the first page states: “Ever since the famous American chemist George Washington Carver began exploring the mysteries of this little legume near the turn of the century, the growth in food and technical uses for soybeans has been nothing short of astronomical. Today, every aisle of your local supermarket contains soybean products, and we’re not just talking tofu. Take a look at the astounding number of products containing soybeans at the Super Duper Food Store in Anytown, USA.”

A sidebar explains four symbols for marking foods made from whole soybeans (circle) or containing soy oil, soy lecithin, and soy protein or soybean meal. For example (moving from left to right): Margarine & spreads. Tofu. Tofu ice cream. Peanut butter (with soy oil). Desserts and Mixes (with soy oil). “Super Soy—Oh Boy” (Soymilk end display, by the case). Cooking oils. Mayonnaise, Salad dressing. New Chips Asoy! Sauces. A sign reading “Think soy.” Soya Snax. Soy Joy (in the refrigerated drinks section).

One full page, titled “Believe It,” gives a detailed alphabetical listing of 76 categories supermarket items that contain soy, and what type they contain. For example: “Cosmetics: Soybean oil. Crackers: Soybean oil, soybean oil shortening. Croutons: Soybean oil. Diet drinks: Soybean oil, soy lecithin, soy protein isolate.” Also included are: Soy sauce. Soy nuts. Tofu. Not mentioned: Miso. Soymilk. Meat alternatives. Address: 16305 Swingley Ridge Dr. #110, Chesterfield, Missouri 63017.

3835. United Soybean Board. 1995. Soybeans: How a little bean becomes an ingredient in thousands of products from margarine to tofu to chicken feed (Brochure). Chesterfield, Missouri: USB. 12 panels + poster. 23 cm.

• **Summary:** This attractive color publication is folded so that the first 12 panels are a brochure. However when fully unfolded, a large color poster appears. The brochure notes: In 1992/93 the USA produced 51% of the world’s soybeans.

An early history of the soybean in the USA [full of errors]. America livestock (including poultry) consume about 22.5 million tons of soybean meal a year. How soybeans are grown. Composition of the soybean. Foods made from soybeans: Edamame, miso, natto, soy milk, soy sauce, tempeh, tofu or soybean curd, full fat flour. Photos (each incorrect) in the brochure show: “1904: The famous American chemist George Washington Carver discovers that soybeans are a valuable source of protein and oil. 1920s: Combines first used to harvest soybeans. 1922: First U.S. soybean processing plant opens. 1929: Soybean pioneer William J. Morse spends two years in China, gathering more than 10,000 soybean varieties for U.S. researchers to study. 1940: Henry Ford takes an ax to a Ford car body to demonstrate the strength of the soybean plastic he has developed.”

The color poster (16 by 27 inches) is a cartoon showing how soybeans are processed into various products, including full fat flakes, crude and degummed soybean oil, soy concentrates, soy isolates, soy flours, and defatted soy flakes. A soybean utilization/processing diagram at the bottom of the poster shows 137 different products that can be made from the soybean, including 33 whole soybean products (“Traditional soyfoods” incl. tofu, soymilk, miso, tempeh, soy sauce, natto), 33 soybean meal products (26 edible uses + 7 feed uses), and 71 soy oil products (13 edible uses, 19 industrial uses, and 18 applications for lecithin). The seven types of lecithin applications are: Emulsifying agent (4 applications), nutritional (medical use, dietary use), anti-spattering agent (in margarine manufacture), stabilizing agent (in shortening), anti-foam agent (yeast manufacture, alcohol manufacture), dispersing agent (in paint, ink, and rubber manufacture, and in insecticides), and wetting agent (in cosmetics, paint pigments, and calf milk replacers).

Accompanying the brochure/poster is a note pad with the same slogan across the top of each sheet: “Soybeans—Designed for life.” Across the bottom is written: “United Soybean Board—Investing check-off dollars.” Address: P.O. Box 419200, St. Louis, Missouri 63141-9200.

3836. Ribbens, Bob. 1995. Traditional Foods Cooperative was changed to Earth Fire Products Co. in Feb. 1994 (Interview). *SoyaScan Notes*. Nov. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The change in name was accompanied by a change in ownership and structure—from a cooperative (which was a corporation) to a non-stock corporation. Bob made the change to reorganize the company’s decision-making process. It was sort of like a bankruptcy. Prior to the change, Bob was funding the company but other people were running it. They didn’t want to include him in the decisions. When he asked them to put up as much risk as he was putting up, as long as they wanted to make the

decisions, they decided they didn't want to do that. They made an agreement about reducing risk on a new product, but they didn't keep their side of the agreement and ran down cash funds by a large amount. Bob is now owner. The stock is not owned by the workers. None of the former workers are with the business any more. There have been many changes during the last 6 months.

Bob Mandel and Cindy Wiar made the first products, tofu and tempeh, on their own in May 1984. Bob Ribbens thinks that the date of Nov. 1986 is too early for seitan; he thinks the introduction date should be 1989. He never saw tempeh on sale in the community before 1989. In 1989 they decided to stop making tofu and tempeh commercially, and to switch to making seitan and miso. The meeting for interested people took place in 1988, not in 1989. The organization formalized in the summer of 1989.

Bob's company presently has the following products on the market: Long-term barley miso (started selling in Feb. 1995). Seitan in 14 oz retail and 5 lb bulk pack. Brown rice miso, Kickapoo chutney, mellow white miso. They plan to start selling their mellow barley miso at a local co-op this month (Nov. 1995). They also plan to introduce a barbecue seitan. They also sell miso by mail order. They no longer make tofu or tempeh—those markets are too competitive. Address: P.O. Box 92 (Corner of Grove and North Railroad Streets), Gays Mills, Wisconsin 54631. Phone: 1-800-267-6918.

3837. Kushi, Michio. 1995. Guide to standard macrobiotic diet: Kushi Macrobiotics Corp. edition. Becket, Massachusetts: One Peaceful World Press. 64 p. Nov. Illust. No index. 22 cm.

• **Summary:** Introduction. Part I—Basic principles of standard macrobiotic diet. Part II—Summary of daily dietary recommendations. Part III—Standard macrobiotic dietary practice: Whole grains, soup (incl. miso soup), vegetables, beans (incl. azuki beans, black soybeans, tofu, dried [frozen] tofu, tempeh, natto, okara), sea vegetables, fish and seafood, fruit, pickles, nuts, seeds snacks, condiments, seasonings, garnishes, desserts, beverages, modifications, helpful eating hints. Part IV—Proposed one week meal planner. Macrobiotic resources: The Kushi Institute, The One Peaceful World Society. Kushi Macrobiotics Corp. background (formed in May 1994 to market a line of natural, macrobiotic foods). Michio Kushi: Brief biography (Age 69, he is Chairman of the Board and Director of Research of Kushi Macrobiotics Corp.). On the rear cover is a portrait photo of Michio Kushi with his autograph in both English and Japanese.

Note: This book is designed to promote the Kushi Cuisine line of macrobiotic foods. A half-page black-and-white photo of that line of foods is shown facing the inside rear cover. The slogan is: "Perfect replacements for imperfect foods." Kushi Macrobiotics Corp. is located at

Three Stamford Landing, Suite 210, Stamford, Connecticut 06902. Phone: 203-973-2929. Address: Becket, Massachusetts.

3838. Melina, Vesanto; Davis, Brenda; Harrison, Victoria. 1995. *Becoming vegetarian: A complete guide to adopting a healthy vegetarian diet.* Summertown, Tennessee: The Book Publishing Co. x + 262 p. Foreword by Suzanne Havala. Index. 26 cm. [20 ref]

• **Summary:** An excellent vegetarian and vegan sourcebook and cookbook by three registered dietitians. Contents: Acknowledgements. Foreword. Introduction. 1. What is a vegetarian? 2. The evidence is in. 3. Without meat—exploding the myths. 4. Without dairy products. 5. Veganism: More food for thought. 6. Fats and oils: A balancing act. 7. Fiber: The gift from plants. 8. The vegetarian food guide: Putting it all together. 9. Vegetarian nutrition in the growing years. 10. Vegetarian diplomacy. 11. From market to meals. 12. Recipes: Simple treasures. Appendixes: 1. Glossary. 2. Nutrition recommendations.

This book contains a wealth of accurate, positive information about many different types of soyfoods (especially tofu) and related subjects, including tofu, soymilk, tempeh, miso, soy yogurt, soy cheese, soy sauce, tamari, and soy oil (incl. omega-3 fatty acids). Plus wheat gluten, seitan, rice milk, sea vegetables, adzuki beans (p. 66, 162), quinoa, amaranth, macrobiotics, phytochemicals, plant estrogens found in tofu and other soy products (p. 75; they may contribute to positive calcium balance and have a protective effect on the bone health of Chinese and Japanese women), dietary fiber.

Talk with Vesanto Melina. 1996. July 22. This book was originally published in Canada in May 1994 by Macmillan Canada in Toronto. A revised U.S. edition was published in Nov. 1995 by The Book Publishing Co. in Summertown, Tennessee. Address: Canada.

3839. Ledvinka, Ferro. 1995. *Introducing macrobiotics and soyfoods to Italy (Interview).* *SoyaScan Notes*. Dec. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ferro was a pioneer of macrobiotics in Italy. In the process he also helped to introduce soyfoods, especially to Florence. He first learned about macrobiotics when he read a book on macrobiotics in Italy. He started eating a macrobiotic diet. In Rome there was a macrobiotic center founded and run by Marquesa Parvolo, who had been cured of leukemia or a blood disease by George Ohsawa several years before. In 1971 he heard a lecture at this center in Rome by Rob Dobrin, who gave him Michio Kushi's address in Boston, Massachusetts. In the summer of 1972 he traveled to Boston to study macrobiotics, and there he learned how to make tofu and seitan. After leaving the USA, he returned to Italy, living in Rome. From there he worked

to spread macrobiotic food and philosophy to all major Italian cities.

In Jan. 1977 Ferro went to Japan to work with Mr. Kazama at Mitoku, exporting macrobiotic foods to Italy and other European countries. The first Italian company to order these foods (including Japanese miso and tamari) was ProBios in Florence. They were followed by two Italian Macrobiotic Centers, located in Rome and Milan. In Oct. Ferro left Japan, returned to Italy, lived in Rome for a while, then moved to Florence, where he established the pioneering Fondazione Est-Ouest at via de Serragli 4, in Florence. This was a combination macrobiotic restaurant and macrobiotic study center. Ferro also worked for a while with ProBios. He taught various people to make tofu, seitan, and tempeh—but none of the restaurant customers would buy or eat these strange new foods. So Ferro decided to fry them and serve them as a snack, free of charge, before each meal. A Tuscan proverb says that “Even a slipper, if fried, tastes good.” In this way people in Florence started to eat these new foods. The restaurant made and served these foods from about 1982 to 1985. Then people who were working in the restaurant moved to another place, became independent, and they started a small food factory named Soyalab. The founder of Soyalab, Matteo Iacovelli, is now the chairman of the Kushi Institute in Milan. Another person who helped a lot on the way was Alfredo Ingannamorte. These people learned how to make tofu and tempeh in Boston. Alfredo studied at the Kushi house in Becket. Matteo worked at a macrobiotic restaurant (Open Sesame) in Brookline Village. Address: Via Pellicceria 6, 50123 Firenze (Florence), Italy. Phone: 055-827 274.

3840. Huang, Hsing-Tsung. 1995. Early history of soybeans and soyfoods in China (Interview). *SoyaScan Notes*. Dec. 28. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The early *jiang* in China was made from meat or fish. The *jiang* used by Confucius was almost surely made from meat and fish. Many of the ancient books were annotated during the Han dynasty in an attempt to explain the meaning of certain words and passages. A very eminent scholar in the late Han dynasty (about 100 A.D.), talking about events in roughly 500 B.C., said that the *jiang* used by Confucius was made from meat and fish.

The soybean was not an important crop in China until the early Han, say 200 to 300 B.C. The soybean is mentioned in the *Book of Odes*, which is the most ancient and most reliable of Chinese books, not as a crop but as a plant that people gathered from the wild. Then there are a series of books that were traditions of the Chou dynasty; these were codified and gathered by about 300 B.C., but in them there are not many references to the soybean. However by the time of the Western (Former) Han (206 B.C. to 8 A.D.) there were references in the literature to cartloads and big urns of *jiang* [Chinese-style miso]; *shi* (fermented soy

nuggets) was also mentioned many times in the literature. Both these foods had become commodities.

Soy is also found in the Han Tomb No. 1 at Ma-wang-tui (pronounced “ma-wang-DUI”), a big archaeological find in China. A woman ruler was buried here in about 165 B.C. with all the 5-6 major grains, including wheat, barley, rice, 2 kinds of millet, soybean (*shu*), and hemp. Also found in the tomb were several seasonings including “soy sauce (*jiang*), *shi* (‘salted darkened beans’), and leaven (*qu*).”

The earliest reference to pasteurization in China concerns pasteurization of wine, around the 11th century, long before the Japanese were pasteurizing shoyu before shipping it to Holland. He is not aware of any early reference to the Chinese pasteurizing soy sauce, but he will look again. However soy sauce is so highly salted that it does not require pasteurization, whereas wine does. The wine was filled into earthenware jars with a small mouth, which was covered with cloth or leaves, then sealed with mud.

Dr. Huang will travel to China next month (to Foochow, capital of Fujian province) and he hopes to see some of the existing traditional fermentation processes. Soymilk was not an important traditional food in China, but it was becoming important when he traveled there in the 1940s with Dr. Joseph Needham. When they visited northern China, early in the morning people would have a huge iron wok of hot soymilk, which they sold for breakfast. Joseph liked the soymilk with bits of *youtiao* (deep-fried bread sticks; W.-G. *yu t'iao*).

One of the chapters in Dr. Huang's book deals with nutrition in China. The Chinese diet is said to be lacking in calcium. It is well known that for calcium to be absorbed, you need lactose, and the ability to tolerate lactose. Thus, it would be surprising to find higher bioavailability of the calcium in soymilk or tofu. Before the time of Confucius (551-479 B.C.) the Chinese ate a lot more animal products than they do now, but the agricultural system developed with the emphasis on grains, less emphasis on animal products, and no emphasis on milk—probably because of the lactose intolerance of the Chinese people. Thus, the Chinese never developed a dairy industry. Mongols are not as lactose tolerant as northern Europeans, but they are heavily dependant on animal milks as a source of food. They get around this problem by converting animal milk into yogurt. This fermentation converts the lactose to lactic acid, which both solves the lactose intolerance problem and extends the life of the product by lowering the pH.

Another interesting problem: Europeans are the only ones who make true cheese, using rennet. The Mongolians and all the pastoral people in Asia rely on various animal milks, including horse's milk to make koumiss, and they even make a type of cheese that is sort of like cottage cheese, coagulated by acid. Dr. Huang thinks the discovery of rennet is one of those major, accidental discoveries that is

very rare. If you wash an animal stomach carefully before using it to store milk, that will wash all the rennet away. Another such major discovery is the Chinese discovery of *chu* or koji. Address: 309 Yoakum Parkway #403, Alexandria, Virginia 22304.

3841. Behling, Ann. 1995. Soybeans: A natural cancer fighter. *Soybean Digest*. Dec. p. 26a.

• **Summary:** A recent study by the National Cancer Institute [Howe et al. 1992, published in *J. of the National Cancer Institute*, 84:1887-96] shows that the risk of colon cancer in the USA could be reduced by about 31% with an average increase in fiber intake of about 13 grams per day. The current average U.S. per capita intake of dietary fiber is only about 11 grams per day, while the recommended intake is 20 to 35 gm/day. Joanne Slavin, a professor in the Department of Food Science and Nutrition, University of Minnesota, says that whole soybeans offer the best source of soy fiber, followed by soy flour, miso, and tempeh.

3842. Grain & Salt Society, Inc. 1995. A grain of salt newsletter: Fall/winter 1995/96 [Includes mail order catalog]. Magalia, California. 12 p. 28 cm.

• **Summary:** This newsletter includes a mail order catalog. Soy-related products include: Junsei Yamazaki Barley Miso. Contains excerpts by Selina DeLangre from *The Book of Miso*, by Shurtleff and Aoyagi, plus miso recipes. Senior editor: Philippe DeLangre. Research editor: Bill McKellar. Address: P.O. Box DD, Magalia, California 95954. Phone: 1-800-867-7258.

3843. Ontario Soybean Growers' Marketing Board Newsletter. 1995. Profiles: W.G. Thompson & Sons Ltd., white hilum soybeans and Ontario's railroad system. Dec. p. 7.

• **Summary:** John O'Brien, Manager of W.G. Thompson & Sons Ltd., predicts that premiums for white hilum soybeans will virtually disappear within five years. Instead, more soybean growers will be locking in premiums by growing special varieties that companies such as Thompsons will contract and ship for specific Asian customers. "Thompsons, a \$300 million a year family-owned business with 300 employees, has already earned a name is special quality crops. From its 14 Ontario elevators, the company works with farmers on 75,000 to 100,000 acres of contract crops each year, with over half that acreage going to soybeans."

White hilum soybeans have become just another commodity in Ontario, says Wes Thompson Jr. The future lies in going the next step, in sitting down with customers and finding out exactly what they want in a soybean, and then producing and shipping those soybeans for them as part of a long-term relationship. Thompsons is already contracting specific varieties for exclusive delivery to

individual Pacific Rim makers of tofu, miso, and natto. At Pain Court, the company is also installing a high-tech sorting line that will enable it to sort for shape and color, and to completely eliminate foreign material. At the same time, Thompsons isn't getting out of the huge and profitable crush market. To prove that, it is playing a leading role in the campaign to save Ontario's rural rail network.

Thompson's Hyland Seeds Division sold 14 private and 8 SeCan (public) varieties in 1995; it expects to sell 24 private and only 4 SeCan varieties in 1996. Address: Box 1199, Chatham, ONT, Canada N7M 5L8. Phone: 519-352-7730.

3844. **Product Name:** [Kikko Mensi Sauce].

Foreign Name: Kikko Salsa Mensi.

Manufacturer's Name: Kikko Corporation S.A.

Manufacturer's Address: Calle Robert Fulton No. 115, Lima 3, Peru. Phone: 326-1358 or 326-0955.

Date of Introduction: 1995.

Ingredients: Soybean paste, shoyu, garlic, sugar, and wine vinegar.

Wt/Vol., Packaging, Price: 350 ml (11.84 fl oz.) plastic bottle.

How Stored: Shelf stable.

New Product-Documentation: Company history form filled out and label sent by Marco Kamego, a present owner of Kikko Corporation S.A. 1997. Dec. 29. Label: 7.5 by 2.75 inches. Full-color front panel on tan-orange and white. Color illustration of a turkey on a plate surrounded by vegetables. "Sauce for seasoning all types of meats. The ideal sauce for baked turkey" (*Salsa para aderezar todo tipo de carnes. El Adobo ideal para el pavo al horno*).

3845. Teranaka, T.; Ezawa, M; Matsuyama, J.; Ebine, H.; Kiyosawa, I. 1995. [Inhibitory effects of extracts from rice-koji miso, barley-koji miso and soybean koji miso on the activity of Angiotensin I converting enzyme]. *Nippon Nogeikagaku Kaishi (J. of the Agricultural Chemical Society of Japan)* 60:1163-69. [Jap]*

3846. Grogan, Bryanna Clark. 1995. The (almost) no-fat holiday cookbook: Festive vegetarian recipes. Summertown, Tennessee: The Book Publishing Co. 192 p. Index. 21 cm. [26 ref]

• **Summary:** This low-fat vegan cookbook, containing a wealth of soy-related recipes, features 18 menus for celebrating holidays from around the world. Address: Denman Island, east of Vancouver, British Columbia, Canada.

3847. Hagler, Louise. 1995. Lighten up! Tasty, low-fat, low-calorie vegetarian cuisine. Summertown, Tennessee: The Book Publishing Co. 160 p. Illust. Index. 23 cm.

• **Summary:** This is a vegan cookbook containing over 130 easy-to-prepare recipes, including many soyfoods recipes:

about 26 tofu recipes, 5 tempeh recipes, 7 textured vegetable protein recipes, and 3 miso recipes, plus recipes using wheat gluten and quinoa.

Contents: Introduction. Snacks and appetizers: Dips and spreads, salsas, finger foods, fresh juices. Salads and dressings: Salads as a main dish, light salads, salad dressings, sauces and pestos. Soups: Main dish soups, light soups. Mainly beans. Mainly grains. Mainly pasta. Mainly tofu, tempeh and: Textured vegetable protein. Vegetables: Greens of all kinds, spring and summer vegetables, fall and winter vegetables. Lighter sweet things: Lighter pies, cakes, tarts and cookies, lighter sweet toppings, fruit treats.

A color photo on the rear cover shows “Louise Hagler, best-selling author and editor of *Tofu Cookery*, *Tofu Quick and Easy*, and the original *Farm Vegetarian Cookbook*, has been a creative vegetarian since 1969.” Address: Summertown, Tennessee.

3848. Herbst, Sharon Tyler. ed. 1995. *The new food lover’s companion: Comprehensive definitions of over 4000 food, wine, and culinary terms.* 2nd ed. Hauppauge, New York: Barron’s. xvi + 715 p. 18 cm. 1st ed. published 1990. Barron’s Cooking Guide. [325* ref]

• **Summary:** This carefully researched and well written dictionary of food terms also contains 21 useful appendixes and a good bibliography. All enquiries should be directed to: Barron’s Educational Series Inc., 250 Wireless Blvd., Hauppauge, New York 11778.

Soy and related entries can be found under the following headings: Adzuki bean (also azuki), agedashi, cheese-imitation cheese (generally includes tofu and lecithin), Fermented black beans (also called Chinese black beans and salty black beans), flour-gluten flour, kecap manis / ketjap manis, kudzu, milk (see soy milk), miso, natto, okara, queso fresco (also called queso blanco), quinoa, seitan, shoyu (Japanese for soy sauce), soybean, soybean oil, soy flour, soy milk, soy pea (see soybean), soy sauce (light soy sauce, dark soy sauce, Chinese black soy, tamari), tempe or tempeh, tofu (also called soybean curd and bean curd).

3849. Kushi, Michio; Jack, Alex. 1995. *Das grosse Buch der Makrobiotik: Ein universaler Weg zu Gesundheit, Glueck und Frieden* [The big book of macrobiotics: A universal way to health, happiness, and peace]. Munich, Germany: Droemer Verlag. [Ger]* Address: Boston, Massachusetts.

3850. Masuoka, Hiroshi. 1995. *Masuo-san no oishii miso zukuri: wakasa no kenkô no moto* [Mr. Masuo’s way of making delicious miso: The source of youth and health]. Tokyo: Jakometei Shuppan. 110 p. Illust. (color). 21 cm. [Jap]* Address: Japan.

3851. Northrup, Christiane. 1995. *Heal your symptoms naturally.* Potomac, Maryland: Phillips Publishing Inc. 18 p. 28 cm.

• **Summary:** In the section titled “Natural healing for menopause” (p. 1-3) Dr. Northrup advises women to take natural progesterone, since their body stops producing its own progesterone during menopause. This supplement provides relief from both hot flashes and mood swings for many women. “For two weeks out of every month, use a little progesterone cream on the soft areas of your skin, changing sites often... Another form of natural progesterone is plant progesterone. There are many sources. The most common are soy foods and yams (not sweet potatoes).” Also take a safe form of estrogen-estriol. It can be applied as a vaginal cream and may protect against breast cancer. “Natural estrogens such as estriol have been in use for over 50 years, and are considered generic. Although these natural hormones aren’t very common in the U.S., estriol is one of the more popular estrogens in Europe.” To find a U.S. source call the Women’s International Pharmacy at 1-800-279-5708.

“Natural plant hormones with estrogen-like effects are found in soy products, such as soy milk, tofu and miso, in addition to cashews, peanuts, oats, corn, wheat, apples and almonds. Japanese women go through menopause more easily than American women, partly because their diet is so high in the natural estrogens found in soy products. (Note: If you still have your uterus, never take estrogen of any kind without balancing it with progesterone.)”

In the section titled “Natural healing for breast cancer” (p. 6-7) notes that you can lower your risk through diet. “Eat soy products, You can also protect your breasts with tofu. A study published in the September 1994 issue of the *American Journal of Clinical Nutrition* demonstrated that women who ate 60 grams of soy protein per day (about 2 ounces) had changes in the estrogen levels that were similar to the effects of tamoxifen—an antiestrogen drug that is undergoing study as a possible prophylactic agent in women who are at high risk for breast cancer.

“The effects of soy protein on hormonal levels are thought to be from estrogen-like substances in soybeans called isoflavones. These behave like partial estrogen agonists/antagonists, which means they help increase the effects of estrogen in women who have estrogen levels that are too low, while helping to decrease the effects of estrogen in women whose estrogen levels are too high.

“While we’re waiting for more research on the subject, I’d recommend adding soy protein to your diet regularly. In addition to tofu, soy protein is found in tempeh, miso and natto. These products are sold in many grocery stores and in almost all health food stores.” Address: M.D. (gynecologist), Women to Women, Yarmouth, Maine.

3852. Kushi Macrobiotics Corp. 1996. Kushi Cuisine order form. Stamford, Connecticut. 2 p. Revision #3. Jan. 19.

• **Summary:** This 1-page (back-to-back) photocopied order form lists 26 meals, seasonings, and snacks, which range in price from \$4.39 to \$0.99. Soy-related items include: Buckwheat noodles (soba style) + soy-ginger sauce (4 servings, \$4.39). Quick brown rice + red azuki beans & onions (4 servings, \$2.59). Instant miso soup + garden & sea vegetables + shiitake mushrooms (12 servings, \$3.99). Instant chicken-free vegetarian noodle soup + tofu & mushrooms (6 servings, \$3.99). Traditional premium (shoyu style) soy sauce (10 oz, \$2.99). Wheat-free premium (tamari style) soy sauce (10 oz, \$3.59). Postage for \$0 to \$10.00 is \$4.95. Address: P.O. Box 1434, Stamford, Connecticut 06904. Phone: 1-800-200-4184.

3853. GEM Cultures. 1996. Catalog [Mail order]. 30301 Sherwood Rd., Fort Bragg, CA 95437. 10 p. Jan. [4 ref]

• **Summary:** New additions include *The Simple Soybean and Your Health*, by Virginia and Mark Messina, and a maple tofu kit. Contents: Soycrafters Section: Tempeh, natto, koji starters, miso, koji, tofu boxes, tofu coagulants (natural nigari, Terra Alba naturally occurring calcium sulfate or gypsum). Books. Bread cultures. Dairy cultures. Tea fungus–Kombucha. Sea vegetables. Kitchen items. Ordering information. Address: Fort Bragg, California. Phone: 707-964-2922.

3854. Soyfoods Center archival collections, from the 1600s ongoing. 1996. Lafayette, California. [6313 ref]

• **Summary:** As of 1 Jan. 1996 the Soyfoods Center Archives contains 6,313 unpublished archival documents—mainly correspondence, interviews, photographs, and unpublished manuscripts relating chiefly to the history of soybeans and soyfoods, and to a lesser extent, the history of vegetarianism and natural foods.

Main subject areas include: early history of soybeans and soyfoods; modern soy protein products; soyfoods industry and market; industrial utilization of soybeans; soy pioneers in the U.S., Europe, and worldwide; major U.S. soybean crushers; Seventh-day Adventists worldwide; pioneer U.S. soy protein companies; pioneer U.S. natural food companies and distributors; soybeans, soyfoods, Third World nations, and world hunger; nutritional and medicinal value of soybeans and soyfoods; and soybean production, trade, and marketing.

Document level access is available through the repository's SoyaScan information retrieval system.

Most important specific subject areas: Miso, natural foods, Seventh-day Adventists, soy sauce, soybean, soybean industry, soybean products, soyfoods, soyfoods industry, soymilk, tempeh, tofu, vegetarianism. Address: P.O. Box 234, Lafayette, California 94549. Phone: 510-283-2991.

3855. Connolly, Maureen. 1996. Have you had your tofu today? For the health-conscience, soy has become the superfood du jour. Is it all it's cracked up to be or the next incarnation of oat bran? *Women's Sports and Fitness* 18:62-63. Jan/Feb. [3 ref]

• **Summary:** Studies show that soy can reduce your risk of coronary disease. A 1990 study by the National Cancer Institute identified five anticarcinogens present in soybeans. As little as 25 gm/day of soy protein can be beneficial to health, and many soy products are now on the market. The author talks about "soy's new celebrity" and asks her readers "why not try tofu?"

A sidebar titled "A smorgasbord of soy" (p. 63) gives a brief description of the following soy products: Isolated soy protein, miso, soybeans, soy flour, soy milk, tempeh, textured soy protein (TSP), and tofu. Address: New Jersey.

3856. Hagler, Louise. 1996. Soyfoods cookery: Your road to better health. Summertown, Tennessee: The Book Publishing Co. 160 p. Illust. Index. 21 cm. Introduction by Mark and Virginia Messina.

• **Summary:** Contents: Foreword, by Louise Hagler. Introduction, by Mark Messina and Virginia Messina: Introduction, soybeans—a powerhouse of nutrition, soy and cancer (soybeans—a phytochemical factory, genistein and non-hormone cancers, soy and cancer treatment, isoflavones in the diet), soyfoods and heart disease—beyond cholesterol, soyfoods and bone health, soyfoods and kidney disease, menopause, perspective on soyfoods, about the Messinas. Basic soyfoods (glossary): Whole soybeans, fresh green soybeans, soymilk, okara (soy pulp), soymilk powder, soy protein concentrates, soy protein isolates, tofu, freeze-dried tofu, tempeh, textured vegetable protein, miso, soy flour or grits, yuba or bean curd stick or sheet, natto, soy sauce, soy oil, soy lecithin, convenience soyfoods (frozen soyburgers, frozen tamales and burritos, frozen soy hot dogs or wieners, frozen fat-free soy ground meat replacement, frozen soy pizza, tempeh burgers, frozen tofu lasagne, stuffed shells, manicotti, tortellini or ravioli, frozen soy breakfast links or "sausages" or tempeh "bacon," "ground" tofu, meatless chili mixes, meatless burger mixes, soy "cheeses," eggless soy mayonnaise, tofu salad dressings, soy ice creams, frozen pot pies, frozen pocket breads, instant miso soup, eggless soy cake, quick bread, pancake and waffle mixes, liquid soy coffee creamer, smoked or baked tofu). Feeding babies and children soyfoods. Breakfast, brunch & bread. Whole soybeans. Sauces, spreads, dips & dressings. Soup & salad. Main dishes. Desserts. Drinks & yogurt.

No dairy products or eggs are used; honey is called for in some recipes. Optional microwave instructions are sometimes included. Address: Summertown, Tennessee. Phone: 615-964-3571.

3857. Stacy, Michelle. 1996. Can soy save your life? Michelle Stacy separates hype from hope. *Food & Wine*. Feb. p. 88-94, 96. [1 ref]

• **Summary:** This story is based on the study by Dr. James Anderson in the *New England Journal of Medicine* (Aug. 1995). "In its cholesterol-busting guise, soy bears an eerie resemblance to another unglamorous food: oat bran."

"A growing body of evidence suggests that it [soy] may help prevent certain cancers, slow calcium loss from bones and moderate symptoms of menopause. Many of these effects, researchers posit, are due to natural substances in soy called isoflavones, which resemble the hormone estrogen and may replicate the many protective effects of estrogen without any of its drawbacks."

But many marketers, including Ronald Paul (president of Technomics, a food-consulting firm in Chicago) believe that soy has a bad image. "It's going to be a marketing challenge to change the public's view of it. I always like to say that if you can make the kiwi a success you can make anything a success." Will companies start to promote their products by advertising on the package "Excellent source of soy!?" Another obstacle to acceptance for some people that tofu reminds them of the health-food era of the 1960s.

Photos show the following packaged soyfoods, each with a brief description: Edamame, soy sauce, soy milk, soy flour, miso, tempeh, roasted soybean powder, tofu. Contains the following recipes, each accompanied by a color photo: Grilled tofu salad. Miso-carrot dressing. Tempeh sandwiches. Chili con tofu. Miso-clam soup. Fried tofu with mushroom gravy. Miso-stuffed chicken. Silken tofu in ginger syrup. A full-page color photo shows green vegetable soybeans in and around one large pod. Small photos show most of the recipes, plus a field of soybeans, and a farmer holding a young soybean plant. Address: Author of *Consumed: Why Americans Love, Hate, and Fear Food* (Simon & Schuster).

3858. Macdonald, Bruce. 1996. New developments at Macrobiotic Company of America (MCOA). Acquisition of Mountain Ark Trading Co. in Fayetteville, Arkansas (Interview). *SoyaScan Notes*. March 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bruce's Macrobiotic Company of America (MCOA) used to sell tofu kits to Mountain Ark but then they stop re-ordering because they planned to sell the company. When Mountain Ark was under the stewardship of Frank Head and others they were macrobiotic oriented. But 3½ years ago Frank sold the company to Ozark Cooperative Warehouse in Fayetteville. "There wasn't a person in that organization that ever had a bowl of miso soup in their life—I don't think. So they began to steer the company away from macrobiotics toward a mainstream natural food company. One of the first things they did was

to put in a line of tomato products. So their macrobiotic customers began to run away."

MCOA acquired Mountain Ark on 1 Feb. 1996. Bruce purchased the company name, toll-free phone number, and mailing list of 5,700 customers. He did not purchase any of their inventory. The company is now located at 799 Old Leicester Highway, Asheville, North Carolina 28806—at MCOA. Phone: 1-800-643-8909. Bruce plans to carry the tofu kit on a regular basis—though it sells slowly. The kit is imported from Japan. The cost changes with each container imported. It retails for about \$20-25.00. In Oct. 1993, Mountain Ark sold the kit for \$36.99 + \$4.95 shipping.

The innovation of this whole scenario is that, over the last 10 years or so, all of the companies that were involved with macrobiotics either went bankrupt or ran away from it. When Bruce took over MCOA 3 years ago he changed its direction and went headlong into becoming the largest variety supplier of macrobiotic foods on the planet. The company started to grow—even in the big natural foods stores—such as Fresh Fields. Macrobiotic foods is the most misunderstood category in the health food industry. For the big stores he printed up a best-seller list of 200 items that could be put in a "macrobiotics section." Now Bruce is in the process of putting macrobiotic sections in all the Fresh Fields stores. "Because we import direct then distribute direct to retail stores, we are able to offer them prices on these foods that are 25-30% less than a normal distributor. The old way of doing business was, for example, Eden Foods imports it, marks it up 30 or 35%, and sells it to Cornucopia, who marks it up 25-30% and sells it to the store." His wholesale and retail catalogs have a great selection of foods. The only difference is that the retail prices are 10% higher. These low retail markups give a real break to macrobiotic consumers. MCOA also provides information by phone.

Note: MCOA is owned equally by Muso Shokuhin of Japan and by Bruce Macdonald. Address: President, Macrobiotic Company of America, Asheville, North Carolina 28806. Phone: 704-252-1221.

3859. Macdonald, Bruce. 1996. Big problems at Kushi Macrobiotics (Interview). *SoyaScan Notes*. March 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Michio and Aveline have big problems on their hands at their new company Kushi Macrobiotics. "Basically, you've got a bunch of high rollers from the commercial food industry thinking that, with slick packaging and cheap ingredients, they can create a product line that is double the price of Fantastic Foods' and not nearly as good in quality... They just don't have a clue of the sophistication of the natural foods shopper. They've got five guys each making \$125,000 a year, and they haven't sold a thing yet. Norio Kushi is making \$80,000 a year, and he is barely at the level

of knowing how to brush his teeth in terms of business experience.”

Its just amazing. They raise \$1 million privately to start off with. They blew through that with surveys, etc. As Jimmy Silver said aptly, ‘Basically what they found out with their million dollars was that people weren’t interested in what they were selling.’ What they are doing is basically the antithesis of what macrobiotics stands for. Then they proceeded to use no organic ingredients and made it a corporate policy to not use anything from Japan—except brown rice vinegar, of which they are buying a low quality product from Eden Foods. They then raised 6 million with a public offering, and now have less than \$4 million left. They are going through money like crazy. They have a 40,000 square foot warehouse in New Jersey, with 10,000 square feet of offices and 3 people in there. None of the distributors that Bruce knows have picked up the Kushi line.

One little disaster got the president fired. They did a line of 4-5 bean dishes. Some jerk didn’t realize that you don’t add salt to beans when you cook them. So they advertised a 25-minute cooking time on the package; well you could cook this for 25 years and it would never be right. So this guy ordered a production run worth hundreds of thousands of dollars, without checking it with Michio, who is in charge of quality control. It is all garbage.

So 3 weeks ago Aveline called up Bruce in a panic. She thought she was creating another Erewhon. There is a peculiar lack of judgment throughout this whole process. Since Michio is in charge of quality, they do production runs of the whole line and then they send the finished products to Michio. Aveline tried tasting this bean dish and a few others and she was horrified, just beside herself. She says to Bruce, “We want to buy your company.” Bruce says, “Okay, \$5 million and you can have it.” Bruce went to the Kushi’s home in Brookline and spent 3 days with them. Aveline looks better and healthier than she has in years. They are now planning to go an acquisition binge; the first company they have their sights on is some cracker company. “I laid out a plan for them, including a major change in the 7-member board of directors. Michio can remain as chairman. You can keep three of the ‘financial wizards’ on the board, but the other three have got to be Yuko Okada (of Muso Shokuhin), Christopher Dawson, and me. We’ll take all the losses at the beginning, then turn the company into a worldwide macrobiotic company.”

Bruce’s Macrobiotic Company of America is doing very well financially. When he acquired it, sales were less than \$900,000 a year. This year he will probably do \$3 million. Everyone from Lenny Jacobs on down told Bruce that macrobiotics was dead. True, it has changed, but it alive in new ways. For example, a guy name Horse Schultz is the chairman of the Ritz-Carleton Hotel Chain; he is having his chefs trained at the Kushi institute, and has sent out a memo

to all of his hotels worldwide that by a certain date they will be offering macrobiotic quality meals at all hotels in addition to the traditional fare. They are converting one hotel at a time. Bruce is now flying miso down to Cancun. Horse Schultz’s cancer is now in remission. Address: President, Macrobiotic Company of America, Asheville, North Carolina 28806. Phone: 704-252-1221.

3860. Mountain Ark Trading Co.; Macrobiotic Company of America. 1996. The “new” Mountain Ark consumer direct catalog—spring 1996 [Mail order]. 799 Old Leicester Hwy., Asheville, NC 28806. 37 p. March 15. 28 cm.

• **Summary:** This is a very comprehensive mail order catalog, with an excellent index, for macrobiotic whole foods, specialty cookware, cookbooks and books on natural healing, futons, furniture, etc. Soy-related products include: Aduki beans—precooked, amaranth, amazaki concentrate, amazaki [amazake] pickles, arame (sea vegetable), barley malt, black soybeans, brown rice malt, brown rice syrup, cookbooks, dulse (sea vegetable), fu (dried wheat gluten), green nori flakes, hamanatto, hijiki, Hokkaido azuki beans, Hokkaido black soybeans, Japanese plums (*umeboshi*), jinenjo soba, Job’s tears, kamut, kanten bars, kelp granules, kinako, kombu cha, kuzu, miso, mochi, natto miso, natto starter spores, nigari, nori, quinoa, sea palm—California, seaweed sesame shake, seaweed cookbook, seitan, shoyu, soy sauce, tamari, tofu making kit, tofu—dried, wakame. Many of these products are imported from Japan.

Bruce Macdonald of Macrobiotic Company of America acquired the company from Frank Head of Fayetteville, Arkansas, on 1 Feb. 1996. The entire catalog can be viewed on the Internet at <http://www.mountainark.com>. Address: Asheville, North Carolina. Phone: 1-800-643-8909.

3861. Yoshihara, Yasuo. 1996. Update on Shin-Mei-Do Miso Co. (Interview). *SoyaScan Notes*. March 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Yasuo speaks with a slight Japanese accent. Shin-Mei-Do Miso Co. is active and growing. They make brown rice miso and barley miso, each sold in 450 gm and 4.5 kg plastic tubs. Lulu does the bookkeeping. The demand for their miso on the west coast of Canada is increasing so they stopped distributing to Eastern Canada. Within the last week a person from eastern Canada called him about starting a miso factory in eastern Canada, and he had a similar enquiry last year. He may be interested in teaching potential miso makers as an apprentice for pay—depending on the conditions. Shin-Mei-Do sells all of its miso to natural foods wholesalers. Amano in Vancouver makes most of the miso sold in Oriental food stores in British Columbia. Moreover, a huge amount of miso (many tons) is imported from Japan. Westbrae packages imported Japanese miso and has nothing to do with Amano—as far as Yasuo knows. Yasuo doubts that Amano ever made miso for Westbrae.

Yasuo has never made miso to be sold under another brand. Shin-Mei-Do is basically still a very small operation. Yasuo does not want to become a big company where the miso is made largely by machines. Address: Shin-Mei-Do Miso Co., 5 Wren Road, Denman Island, BC, Canada V0R 1T0. Phone: 604-335-0253.

3862. Albert-Matesz, Rachel. 1996. Have you had your miso today? *Let's Live* 64(4):80-82. April.

• **Summary:** Discusses the different types of miso and its health benefits. Address: Seattle, Washington.

3863. Goulart, Frances Sheridan. 1996. Oh, soy! *Fit (New York)*. March/April. p. 77-79.

• **Summary:** On the section titled "A nutritional wonder," the authors notes that soymilk has 15 times more iron than dairy milk, 50% less fat, and no cholesterol. Tofu is one of the two best sources of calcium (yogurt is the other) recommended by the Osteoporosis Foundation for meeting adult calcium needs (1,000 mg/daily). One 4-oz. serving of tofu provides twice as much calcium as one cup of plain yogurt. Soybeans provide the antioxidant vitamins A and E.

A sidebar titled "Your soy shopping list" gives brief definitions of tofu, tempeh, miso, natto, soy milk, soy cheese, soy sauce, and textured vegetable protein (TVP). Address: Connecticut.

3864. *Soyfoods (ASA, Europe)*. 1996. New soya products at FiE '95. 7(1):6-7. Spring.

• **Summary:** "Every year the Food Ingredients Europe Exhibition seems to get bigger and bigger, with more exhibitors and more visitors." Last year's FiE, held 7-9 November 1995 in Frankfurt, Germany, was no exception, and many soy products—especially soy sauces and related seasonings—were on display.

Miwon Co. Ltd. (Seoul, Korea) has developed a range of ingredients under the brand name SoyaDeli. Products include FiberPro, PeptiPro, FlavorPlus, and FlavorBase.

Kikkoman Trading Europe GmbH (Heerdter Lohweg, Germany) introduced FVP Paste, made by enzymatic hydrolysis and concentrated in a vacuum.

Wan Ja Shan International (Middletown, New York) is one of the largest makers of naturally brewed soy sauce and Oriental sauces in the USA. Their products include soy sauce, preservative-free soy sauce, stir-fry sauce, hoisin sauce, teriyaki sauce, tamari soy sauce, dehydrated soy sauce, dehydrated teriyaki sauce, and clear soy sauce.

Ajinomoto Europe Sales GmbH (Hamburg, Germany) was selling San-J Tamari in both liquid and dried forms.

Nikken Foods (Tokyo, Japan) is a large maker of natural food flavors. Exported mainly in powdered form, these include a wide array of soy sauce, natural flavor enhancers, and other fermented products, including white miso powder and red miso powder.

Inproba BV (Baarn, Netherlands) offers a wide selection of about 160 Oriental products, both at retail and to the food industry. These include various soy sauces and other soy products, and they can also develop custom recipes for their customers.

Upcoming FiE exhibition and conferences: 1996 Nov. 12-14 at Paris, France; 1997 at London, UK; 1998 at Frankfurt, Germany.

3865. Tyler, Jim; Neville, Jan. 1996. Wellspring Natural Food Co. Mail order catalog. Amherst, Massachusetts: Wellspring. 32 p. 28 cm.

• **Summary:** This is the first issue of this catalog, and Wellspring started in 1996. Soy-related products include: Miso, shoyu, black soybeans (from Hokkaido, Japan), yellow soybeans (organic), azuki beans, snow-dried tofu, kuzu, miso ramen, kinako, natto miso chutney, tekka miso, soymilk, and amasake.

Jim has been a macrobiotic teacher and counselor since 1975-76 and Jennifer was a chef at the Kushi Institute. Main competitors include Gold Mine and other such companies. This catalog is service oriented, easy to use, and more than 80% of the products have lower prices than the competition. Address: P.O. Box 2473, Amherst, Massachusetts 01004. Phone: 1-800-578-5301.

3866. DeAngelis, Lissa; Siple, Molly. 1996. Recipes for change: Gourmet wholefood cooking for health and vitality at menopause. New York, NY: Dutton Signet. A Div. of Penguin Books USA Inc. xvi + 400 p. May. Index. 25 cm. [34* ref]

• **Summary:** In the upper right corner of the front cover we read: "Feel great without hormone replacement therapy!" This is a book, with a natural foods and macrobiotic slant, about using foods in place of hormone therapy to help deal with nine problems that occur around the time menopause: Premenstrual syndrome, hot flashes, fatigue, heart palpitations, memory lapses, mood swings, irritability and depression, weight gain, waning interest in sexuality, hypothyroidism. All menu suggestions are divided into two choices: Vegetarian and non-vegetarian (but with many vegetarian dishes). Pages 4-5 note that science has found active ingredients in foods that promote good health during menopause. Soybeans and soy products are "rich in phytohormones... sometimes called phytoestrogens." Four types of food are "off the menu" = should not be consumed: Refined sugars, caffeine and coffee, processed oils, and refined white flour and refined grains. The subsection titled "Phytohormones" (p. 16) lists ten foods, including tofu and brown rice, as good sources. The benefits of phytohormones and soyfoods are also discussed in the section on "Breast cancer" (p. 55-56).

Soy-related recipes include: Miso soup (p. 90). Bean basics (p. 120-23). Tofu teriyaki with vegetables (p. 123-

24). Tempeh, green beans, and carrots with mustard sauce (p. 132-33). Tempeh slices for sandwiches (p. 148-49). Tofu alfredo sauce (p. 303).

The recipes also call for: Adzuki beans, almond butter and tahini, almond milk, kudzu, and plums (umeboshi). The last page is titled "About the authors." Photos of Lissa DeAngelis and Molly Siple appear on the inside rear dust jacket. Address: 1. Private nutrition consultant, North Edison, New Jersey; former Assoc. Director of the Natural Gourmet Cookery School in New York City for 10 years; 2. Registered Dietitian, Los Angeles, California.

3867. Eauclaire, Sally. 1996. Soy backlash. *Vegetarian Times* No. 227. May. p. 18. *

• **Summary:** Highly processed soy foods may not be as beneficial as touted.

3868. Ichikawa, Takashi. 1996. Seikôhō no chakusô: Kanai Noritoshi no bijinesu rinen to shoku no nichibei-shi [The concept of the frontal attack: Noritoshi Kanai's business theory and U.S.-Japan food history]. Tokyo: Sangokan. 254 p. Illust. No index. 20 cm. [Jap]

• **Summary:** This is a very interesting history of Mr. Noritoshi Kanai and Mutual Trading Co. in Los Angeles, which he built into a very successful enterprise. Address: President, Mutual Trading Co., 431 Crocker Ave., Los Angeles 90013.

3869. Messina, Mark; Messina, Virginia. 1996. The dietitian's guide to vegetarian diets: Issues and applications. Gaithersburg, Maryland: Aspen Publishers, Inc. xi + 511 p. Index. 24 cm. [1939 ref]

• **Summary:** Contents: Preface. Acknowledgments. Part I: An overview of vegetarian diet. 1. Demographics and definitions: History of vegetarianism, profile of vegetarians, types of vegetarian diets. 2. Health consequences of vegetarian diets: Differences in dietary components of vegetarian and nonvegetarian diets, cardiovascular disease, hypertension, cancer, diabetes, obesity, kidney disease, renal stones, gallstones, diverticular disease, other conditions, the dairy connection, phytochemicals, conclusion.

Part II: Vegetarian nutrition. 3. Protein: A historical perspective on protein, protein requirements, vegetarian diets and protein digestibility, assessing protein quality, plant proteins and nitrogen balance, protein complementarity, conclusion. 4. Calcium: Osteoporosis, calcium and osteoporosis, calcium absorption and the RDA, calcium excretion, bone health of vegetarians, meeting the calcium RDA on plant-based diets, plant sources of calcium, other factors that affect bone health/fracture rate, conclusion. 5. Minerals: Iron, zinc, selenium, copper, magnesium, phosphorus, manganese, iodine, sodium, chloride, potassium, fluoride, chromium, molybdenum. 6. Vitamins: Vitamin B₁₂ (cobalamin), riboflavin, vitamin D,

vitamin B₆, vitamin B₁ (thiamin), niacin, folate, biotin, pantothenic acid, vitamin C (ascorbic acid), vitamin A, vitamin E, vitamin K. 7. Food guides for vegetarians: A history of food guides, developing food guides for vegetarians, vegetarian food guides, appendix 7-A—food guides for vegetarians (food guide for lacto-ovo vegetarians and vegans, the 1-2-3-4-5 vegetarian food guide, American Dietetic Association's vegetarian food guide, the vegetarian food pyramid, the vegetarian food pyramid, macrobiotic food guide).

Part III: Vegetarian diets throughout the life cycle. 8. Pregnancy and lactation: Weight gain and calorie needs in pregnancy, weight gain in pregnant vegetarians, meeting nutrient needs of pregnancy on a vegetarian diet, meal-planning guidelines, adolescent pregnancy, potential complications of pregnancy, common conditions of pregnancy, vegetarians and lactation, appendix 8-A—food guides for pregnant and breast feeding vegetarians (food guide I, food guide II). 9. Vegetarian diets in infancy: Growth in vegetarian infants, vegetarian diets during the first six months of infancy, solid foods for vegetarian infants, comparison of sample menu plans for 9-month old vegan and omnivore infants, potential concerns in infant feeding, macrobiotic diets in infancy, fatty acids in the diet of vegetarian infants, conclusion. 10. Preschool and school-age children: Growth of vegetarian children, diets of vegetarian children, protein, fat, calcium, vitamin D, vitamin B₁₂, iron, zinc, guidelines for meal planning for vegetarian children, milk in the diets of vegetarian children, counseling parents of vegetarian children, vegetarian diets for school-age children, school lunch, bag lunch, appendix 10-A—meal-planning guidelines for children (other food guides). 11. Vegetarian diets for adolescents: Growth of vegetarian adolescents, nutrient needs of vegetarian adolescents, meal-planning guidelines for vegetarian adolescents, eating disorders. 12. Vegetarian diets for older people: Dietary status of older vegetarians, nutrient needs of older vegetarians, meal planning for older people.

Part IV: Practical applications for counseling vegetarians. 13. Counseling vegetarian clients: Dietary assessment, counseling clients to plan menus based on vegetarian food guides, vegetarian diets as dietary therapy, reducing fat in vegetarian diets, reducing food costs on vegetarian diets. 14. Diabetes: Diet therapy for diabetes, vegetarians and diabetes, the diabetic exchange lists, appendix 14-A—exchange lists for meal planning. 15. Vegetarian diets for athletes: Vegetarian diets and athletic performance, nutrition needs of athletes, risks of amenorrhea in female vegetarians and female vegetarian athletes. 16. Vegetarian food preparation: Preparing grains, preparing beans, using tofu, using textured vegetable protein, using egg substitutes, cooking with sweeteners.

Glossary of vegetarian foods. Resources on vegetarian diet: Vegetarian resources for dietitians, resources for

vegetarian clients, on-line services, mail-order vegetarian foods.

Appendixes. A. Fiber, cholesterol, and macronutrient intakes of adult vegetarians and nonvegetarians. B. Lipid levels in adult vegetarians and nonvegetarians. C. Blood pressure of adult vegetarians and nonvegetarians. D. Anthropometric data of female adult vegetarians and nonvegetarians. E. Anthropometric data of male adult vegetarians and nonvegetarians. F. Intake ratios of N-6 to N-3 fatty acids on vegetarian and non-vegetarian diets. G. Protein, calcium, phosphorus, sodium and potassium intakes of adult vegetarians and nonvegetarians. H. Iron intake and status of vegetarians and nonvegetarians. I. Mineral intake of adult vegetarians and nonvegetarians. J. Water soluble vitamin intake of adult vegetarians and nonvegetarians. K. Fat soluble vitamin intake of adult vegetarians and nonvegetarians. L. Fiber, cholesterol, and macronutrient intakes of vegetarian and nonvegetarian school-age children and teenagers. M. Water soluble vitamin intakes of vegetarian and nonvegetarian school-aged children and teenagers. N. Fat soluble vitamin intake of vegetarian and nonvegetarian school-aged children and teenagers. O. Mineral intake of vegetarian and nonvegetarian school-aged children and teenagers. P. Fiber, cholesterol, and macronutrient intakes of elderly vegetarians and nonvegetarians. Q. Water soluble vitamin intake of elderly vegetarians and nonvegetarians. R. Mineral intake of elderly vegetarians and nonvegetarians.

The information on vitamin K is excellent and extensive (despite one small error): Table 6-12 (p. 197) gives the vitamin K content of selected foods. The content of soybean oil is 77 micrograms per tablespoon (not milligrams as stated). Other rich sources are (per ½ cup cooked): Lentils (261 mcg), kale (179 mcg), spinach (141), broccoli (119). The source of these statistics is: USDA Provisional table on vitamin K content of foods. 1994. Hyattsville, Maryland: USDA.

Index listings for individual soyfoods: Tofu: p. 38-82, 392. Tempeh: p. 391. Soymilk: p. 214-15, 284-85, 391. Miso: p. 389. Soy cheese, soy flour, soy yogurt, soybeans, soynuts, Take Care (fortified soy protein beverage sold in powdered form), tamari: p. 391 (Glossary of vegetarian foods). Address: 1. PhD; 2. MPH, RD. Both: Nutrition Matters, Inc., 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

3870. Steinberg, Carol. 1996. Allergy-free trail food: Camp-tested recipes that will satisfy those with dietary restrictions, and the rest of the gang, too. *Backpacker* 24(4):34, 36-37. May. [4 ref]

• **Summary:** Includes a recipe for Hearty miso soup with shrimp. Address: Laguna Hills, California.

3871. Luciano, Elizabeth. 1996. Miso: Asian comfort food gains fans. *Boston Globe*. July 10.

• **Summary:** An introduction to miso with recipes. Includes a talk with Christian Elwell of South River Miso Co. Address: Massachusetts.

3872. Natural lifestyle magazine and mail-order market: Spring-summer '96. 1996. Asheville, North Carolina: Natural Lifestyle Supplies. 63 p. Catalog. 28 cm.

• **Summary:** A macrobiotic mail-order catalog with several nice articles, it sells many types of soyfoods and related products, including the full line of Kushi Cuisine, organic soybeans (yellow and black), azuki beans, amazake, Rice Dream, soymilk, Westbrae Maltededs, Nasoya Vegi-Dressings, Nayonaise, Farmhouse Tekka [miso], organic soy sauce, fresh tofu, snow-dried tofu, kuzu, and miso. Publisher: Tom Athos. Editor and graphic design: Debbie Athos. Address: 16 Lookout Drive, Asheville, North Carolina 28804-3330. Phone: 1-800-752-2775.

3873. Keuneke, Robin. 1996. The magic of miso. *Total Health* 18(4):54. Aug. *

• **Summary:** Includes recipes.

3874. Elwell, Christian. 1996. Fermenting miso and oatmeal overnight to give the oatmeal a delicious sweet taste (Interview). *SoyaScan Notes*. Sept. 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This summer Christian started making oatmeal in the evening, and (after it was ready and had cooled a little) seasoning it with unpasteurized miso. When the combination is allowed to ferment overnight, the enzymes in the miso bring out a delicious sweetness in the miso by breaking the complex carbohydrates down into sugars. "This has really changed my appreciation for oatmeal. It works best with the light misos such as chick pea miso. The Russians used to do the same thing, using one of their local fermented foods instead of miso." Address: Founder and Owner, South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

3875. Gaiser, Klaus. 1996. Re: Update on work with seitan and tofu in Germany. Letter (fax) to William Shurtleff at Soyfoods Center, Sept. 21. 3 p. Typed, with signature on letterhead. [Ger]

• **Summary:** Klaus founded Topas GmbH in April 1993. Originally the name stood for TO-fu + PA-sta, but after late 1996, as Klaus developed more and more seitan products, it came to mean TO-fu + PA-sta + S-eitan. Klaus sold his company Yamato Tofuhaus [in April 1989] to a firm named Huegli. With the money from the sale he purchased a 300-year old oak-framed farmhouse (with a 2,000 liter fountain in the old vault cellar) for himself, his wife, and 5 children. For the next three years he stayed on to manage Yamato

Tofuhaus, but by the end of 1992 he found the work unsatisfying so he left and decided to start another health food business of his own. In the meantime, Huegli bought Heiler, Germany's biggest reform food wholesale company. Heiler was also dealing with tofu, so together Huegli and Heiler sold quite a lot of tofu and tofu products—about 2 metric tons per week of tofu convenience foods by 1992 and maybe another ton of tofu and tofu-varieties such as smoked tofu. Nowadays their annual sales are not that high; Klaus has no exact statistics, but he would estimate they are about two-thirds of 1992 levels.

In early 1995 Klaus tried to find a place for his company in the tofu market again, but he soon realized his place had been taken. “The German health food market was and is so flooded with tofu products that you just have to come with a real big bang to awaken any interest of the retail shop owners in a new tofu product. They just don't see any reason for selling the 23rd variety of tofu-burger and the 17th variety of tofu-spread.”

Klaus then remembered an old recipe that used wheat gluten. He saves each and every product development experiment in his computer and has about 800 by now. The gluten was colored with red fermented rice (*beni-koji*, made with *Monascus purpureus*) and thus was very meat-like. In fact, when spiced, it so resembled a sausage that he first thought it was too daring to offer such a product to vegetarians. This product turned out to be the basis for his new business. He called it “Wheaty” and started selling it as a cold cut in late 1995. Since that time, monthly sales have gone up and up. “A mere joy.” He could sell much more if he had enough money for costly advertisements, etc. Now his company is selling seven products, based mostly on seitan, with some tofu. Other companies are now starting to try to imitate his most successful product, Wheaty. Klaus believes that seitan has a very bright future in Germany, yet in a new form. The traditional lumps of gluten cooked in soy sauce have not been able to electrify large portions of the population. So Klaus has “re-invented seitan” to resemble familiar German meat products. “And this is the most effective way to convince a greater number of ‘normal’ people of the value of a vegetarian diet.”

One serious problem is that red-fermented rice made with *Monascus purpureus* is not allowed as a food ingredient in Germany; there was a recent ruling by a German court of law. Moreover, as a food coloring, it is classified as a “food additive” so it needs an “E-number” from EC bureaucracy in Brussels, Belgium,—which it has not yet gotten. This is a pity, since it is the only natural heat-resistant meat color, as well as an excellent flavor enhancer, source of vitamin B, and cholesterol reducer. If it were legal, it could be made by Karl Selg-Mann, who is Germany's only manufacturer of soy sauce and miso.

Talk with Klaus by phone. 1996. Sept. 21. He presently does not own a factory; he finds other food companies to

make his products. Klaus speaks almost perfect English. He hitch-hiked in England and Scotland in 1975, then lived for a year in China in 1976, arriving 3 days after Mao Tse-dong died [Note: Mao died in Sept. 1976]. The BNN (*Bundesverband Naturkost und Naturwaren*), a German organization promoting organic foods, has established regulations concerning wheat gluten; originally they said it could only be made from whole wheat. But they found that was too expansive so now they allow the use of 10% by weight of vital wheat gluten. Address: Founder and owner, Topas GmbH, Bollbergstr. 41, 72116 Öschingen [near Tuebingen], Germany. Phone: 07473/25515. Fax: 07473/8320.

3876. Sheridan, Margaret. 1996. Is tofu ready for the big leagues? *Los Angeles Times*. Sept. 26. p. H8, H10, H11.

• **Summary:** The article begins: “Tofu, the spongy off-white soybean cake that spells B-O-R-I-N-G for so many people, is about to get a marketing makeover. Slick packaging, toll-free consumer hotlines, new products, and a blitz of cookbooks created by chefs rather than earnest vegetarian activists are some of the strategies tofu companies plan to use to bring tofu into the mainstream.” A number of second generation tofu products found in supermarkets, and forthcoming cookbooks are listed.

“But some advertising and marketing professionals say that's not enough.” The author talks with many such people who dislike tofu for various reasons: “Tofu is a joke... Tofu is a sissy. Bland, white, boring. It needs to take a stand. Become something. And that name! Its terrible.” “Tofu goes against the American palate... Very little in American food, except baby food or gelatin, has that texture. Even buying tofu is alien. What else do you buy floating in water? And Americans love convenience. Bean curd is anything but. It's not an open-and-eat product.” “I buy tofu but it just sits there, floating in my refrigerator. It makes me feel stupid and guilty. What do you do with it? I end up tossing it out.” Hinoichi is America's largest tofu manufacturer. In March 1997 the company plans to move from its present 50,000 square foot plant in Los Angeles to a facility three times that size in Garden Grove. Harry Tanikawa, Hinoichi sales manager, notes that tofu and soy have been helped by good research and press from the medical community. He adds: “When you see fast-food places such as Panda Express in the shopping malls adding more tofu items to the menu, when you can buy a tofu hot dog at Dodger Stadium, you know tofu has arrived.” Note: Dodger Stadium is a major league baseball park in Los Angeles.

Worthington Foods has experienced a sales rush in meat alternatives; the category went from nothing four years ago to \$150 million a year. The company's best-selling items, sold under the Morningstar Farms brand, are breakfast patties, sausage links, garden burgers, and spicy black bean burgers—according to Don Burke, executive vice president

of sales and marketing. The people who buy Worthington products are “the masses, people who want to cut down a little on meat and saturated fat. Most are aging baby boomers who want taste, convenience, and a health benefit.”

Tofu “recipes for the mainstream” include: Red flannel hash. Mushroom scrambler. Tofu-stuffed French toast. Tofu slaw. Tofu citrus shake. Tofu cheesecake (p. H11).

The article ends with two sidebars: 16 “Tofu do’s and don’ts.” Soy food: Its many looks (p. H11)–Defines different soyfoods: Tempeh, miso, textured vegetable protein (TVP), soy milk, soy flour, soy cheese, soy sauce, tamari. Address: Times staff/food writer.

3877. *ASA Today (St. Louis, Missouri)*. 1996. ASA/Japan hosts 40th anniversary celebration. 2(10):1-2. Sept.

• **Summary:** An estimated 175 “Soycomplex Leaders” from throughout Japan attended the ASA [American Soybean Association] /Japan 40th Anniversary celebration in Tokyo, according to ASA/Japan Country Director Kent Nelson. In 1946 ASA started activities in Japan as a member of the Japanese American Soybean Institute (JASI), which included the Japan Oilseed Processors Association (JOPA), the Japan Oil and Fat Importers & Exporters Assoc. (JOFIEA), and the Japanese tofu, soy sauce, and miso associations.

A photo shows ASA Executive Officer George M. Strayer and Mrs. Strayer in October 1955 leaving Waterloo, Iowa, enroute to Japan on a trade mission.

One sidebar (p. 2) titled “Meeting Japan’s needs now and in the future,” states: Japan imports 97% of its soybeans. Nearly 25% of Japan’s imported soybeans are used for food. Japan is projected to import its 5 billionth bushel of soybeans from the USA in the second half of the year 2000. “Japan remains the top single country market in the world (soymeal included) and is expected to remain the largest export market for US producers into the year 2000.”

A second sidebar (p. 1) titled “ASA/Japan celebrates 40th anniversary,” notes that in 1956, Japan imported 536,000 metric tons of US soybeans. In 1995 Japan imported eight times that amount, over 4 million metric tons. This fall a unified trade team composed of JOPA processors and JOFIEA importers will meet with ASA and United Soybean Board leaders in St. Louis, Missouri, to discuss short, medium, and long-term goals.

3878. Franklin, Deborah. 1996. The healthiest women in the world [in Okinawa]. *Health*. Sept. p. 56-63.

• **Summary:** On average, American men now live to be 72, and American women 79. Not as good as the Japanese, where the ages are 76 and 83 respectively. But women in Okinawa live, on average, to age 84—longer than women in any other country or region of the world. Okinawa was annexed by Japan in 1879 and today it is a full-fledged

Japanese state (the equivalent of a U.S. state). What is their secret? Kazuhiko Taira, a gerontologist at the University of the Ryukyus in Okinawa, thinks that much of it has to do with the Okinawan diet. In Okinawa there is a saying that “food is medicine.” Traditionally Okinawans have eaten three times more meat (especially pork) than Japanese mainlanders, 50% more tofu, and—very important—40% less salt. In the decades before 1960, mainland Japanese adults typically consumed 6-9 bowls of miso soup each day, plus a few small servings of salty pickled vegetables and/or seaweed—all sources of salt. Yukio Yamori, who (for the last 15 years) has studied links between diet and longevity notes that Okinawans eat quite a bit of tofu and other soy products which are particularly rich in isoflavonoids—estrogen-like compounds that may reduce one’s risk of osteoporosis. His “most recent study, of post-menopausal women in Japan and Hawaii, showed that women who consumed the most soy had the densest bones.” This might explain why elderly Japanese—and especially Okinawan—women suffer far fewer bone fractures than American women, even though the Japanese consume much less calcium.

Another important key to a long and healthy life in Okinawa is *yumaru*, a word written with the Japanese characters for “circle” and “connection.” It expresses that sense of belonging and connectedness and feeling needed, which makes elderly people look forward to each new day. In Okinawa, the elderly are greatly respected. Address: Staff writer.

3879. Hastings, Carl. 1996. Soybean products in human foods. Paper presented at Regional Workshop on Soybean Processing and Utilization for Central America and the Caribbean. 4 p. Held Sept. 15-18 in Jamaica.

• **Summary:** Contents: Introduction. Soy sprouts. Whole soybeans: Cooked green beans, cooked soybeans, roasted or deep fat cooked soybeans (soy nuts—salted, flavored, etc., candy coated, salad topping, bakery ingredient or topping, soynut butter, soy coffee) fermented soybeans (tempeh—*Rhizopus*, natto—*Bacillus*, hamanatto—*Aspergillus*). Cereal blends: CSM (Corn-Soy-Milk), WSB (Wheat-Soy-Blend), other (bulgur, oat, sorghum grits).

Refined soy oil: Solvent extracted, physically extracted, uses, lecithin. Soy protein: Soy flour (full fat, defatted), concentrates, isolates, textured, uses. Hulls. Soy fiber. Soy milk: Liquid, powder, uses (plain, flavored, fortified, blends, instant formula, nutritional beverages, tofu, soy cheese, frozen desserts, yogurt, soymilk film (yuba)). Soy sauce. Soy paste (miso). Soy pulp (okara). Address: Reliv, Inc., Chesterfield, Missouri.

3880. Pulmuone U.S.A. Inc. 1996. Pulmuone (Catalog). South Gate, California. 16 p. 28 cm.

• **Summary:** This is a very attractive, full-color catalog describing the company and its products. Contents: Cover

(with a green photo of Korean countryside). Bring nature to your life: a message from Pulmuone. "Pulmuone begins with nature. We strive to bring nature to your door steps. Our job is a process to create a balance between nature and technology. The most advanced technology is applied in developing our products. Seek the balance. Taste our promise." Tofu: Good as meat without the fat (3 tofu products). Pasta from Asia? Instant noodle, fresh noodle, dried noodle. Authentic taste from home: Tea, soybean paste (6 types of Korean-style miso), oil and vinegar, organic beans and grains [brown rice, sweet brown rice, whole barley, pressed barley, soy bean, black [soy] bean, kidney bean], mineral water. Health food: What if you don't have time to eat the right food? Multi-complex health supplements, diet supplements, concentrated health supplements. Cosmetic: Isslin skin care program. About Pulmuone. Important dates in the history of Pulmuone: May 1981–Pulmuone Organic Foods founded (direct distribution of Organic farm products). Oct. 1982–Pulmuone Fermented Foods founded. April 1983–Pulmuone Fermented Foods opens production facility in Pochun (begins production of supplementary foods). May 1987–Pulmuone Kimchi Museum opens. May 1988–Pulmuone R&D Center opens. Jan. 1989–Pulmuone Scientific Committee founded, Dietary Life Research Center opens. Jan. 1990–Doan Soybean Past Plant opens. Jan. 1991–Pulmuone USA Inc. founded. June 1991–Doan Noodle Plant opens. Sept. 1992–Doan Supplementary Foods GMP Plant opens. Aug. 1993–Korean-Chinese joint venture, Ilsongjung Foods Ltd. founded. June 1995–Tofu Plant opens in U.S.A.

"Pulmuone was founded in 1981 with forty employees. It has grown to become a multi-national company of 2,000 employees with annual sales volume of \$250 million.

"The secret to their success lies in their uncompromising commitment for better foods and better life.

"Pulmuone's 'Research and Development Center' opened in 1988 to continue the search for more advanced technology in ensuring the quality of food and life. Together with 'Pulmuone Science Committee' organized with the outstanding scholars in the field, our challenge to science and technology for the future will be succeeded."

Photos show: Sliced and packaged tofu (p. 4-5). Six varieties of Korean soybean paste (p. 9). The outside of Pulmuone's tofu plant at South Gate, California (p. 14). A tofu production line in the USA plant (p. 15).

Letter from John Sim, marketing director of Pulmuone. 1997. June 17. This brochure was printed in September 1996. Concerning the statement that Pulmuone uses only organic materials: "Pulmuone Tofu manufactured here in the U.S. is made from Vinton 81 soybeans from Minnesota. Products such as bean paste are manufactured in Korea using only certified organic soybeans." Address: 4585 Firestone Blvd., South Gate, California 90280. Phone: 213-564-3000.

3881. Jacobi, Dana. 1996. *The natural kitchen: Soy! 75 delicious ways to enjoy nature's miracle food*. Rocklin, California: Prima Publishing. xii + 244 p. Oct. Index. 22 cm. Series: *The natural kitchen*. [16 ref]

• **Summary:** Contents: Preface. Acknowledgments. Introduction: Soy and health. All about soyfoods: Traditional soyfoods (tofu, miso, tempeh, soy sauce, soymilk), other Asian soyfoods (okara, yuba, kinako, natto), second-generation soyfoods (soy dairy products, soy deli foods, textured vegetable protein {TVP}, textured soy protein {TSP}, soy isolate (isolated soy protein)), more soy choices (fresh soybeans, dried black soybeans, soy flour, soy grits, soy flakes, soy nuts), cooking with soyfoods (tofu {pressing, freezing, marinating, sautéing and pan-crisping, frying, braising, pureeing, parboiling, storing and handling tofu}, miso, tempeh, soymilk, other soy dairy foods), cook's notes (herbs, spices and flavorings, nuts, oils, produce, stock, sweeteners).

Soups, appetizers, and first courses. Main dishes. Pasta and light dishes. Side dishes and sauces. Salads, burgers, and kebabs. Desserts. Breakfast and beverages. Mail order sources.

The Preface states: "If you are new to soy, you will find descriptions of soyfoods, from tofu to soymilk... If you already cook with soyfoods, the approximately 75 recipes in this book and their variations will expand your repertoire. These recipes will take you across lines that people who cook with soy rarely approach. The dishes bring familiar and satisfying textures along with flavors that are full and deep. Whether ethnic or classic, they are dishes with verve and elegance." The author first tasted tofu, with her parents, in 1953, "at the precocious age of eight," at The Great Shanghai on 125th St. in Manhattan, New York City. Address: Food writer, New York, NY.

3882. Oser, Marie. 1996. *Soy of cooking: Easy-to-make vegetarian, low-fat, fat-free, and antioxidant-rich gourmet recipes*. Minneapolis, Minnesota: Chronimed Publishing. xviii + 264 p. Illust. Index. 23 cm. [55 ref]

• **Summary:** This is a very nice gourmet vegan cookbook with 16 full-page color photos. Contents: Dedication. Notice: Consult a health care professional. Grateful acknowledgment to. Foreword, by Neal D. Barnard, M.D. Preface, by Marie Oser. Introduction, by Suzanne Havala. Soyfood for thought. A healthy kitchen. The soyfoods pantry (short definitions of generic and brand-name soy products). A quick guide to ingredients. Substitutions. Spices: The variety of kitchen life. Techniques.

Recipes: Sensational starters. Soups, stews, and salads. Bountiful breads. Exceptional Entrées. Soyful sides. Pizza and pasta. Delectable desserts.

Resource guide (Names and addresses of 23 companies selling soy and soy-related ingredients). Recommended

reading (15 books). Bibliography (40 journal articles). Address: Agoura Hills, California 91391. Phone: 818-707-7353.

3883. SunRich. 1996. Soya food ingredients. Soybeans for: (Leaflet). Hope, Minnesota. 3 p. 28 cm.

• **Summary:** These two closely related leaflets are in black ink on a red letterhead. The first leaflet states that SunRich offers “specialty soybeans... for specific soyafood uses: Consistency. Quality. Identity preserved.” “Our extensive grower base enables us to contract produce soybeans for your special needs. Specific varieties with reduced antinutritional factors (lipoxygenases, trypsin inhibitor enzymes and oligosaccharides, stachyose and raffinose) available.”

“Soyamilk powders: For ingredient or beverage use.” A table describes soya beverage powders, spray-dried soymilk, spray-dried tofu powder, soy/dairy milk replacers.

“Sweet Beans–Frozen green soybeans–Podded (Edamame) or peeled (Mukimame). Certified organic soybeans and products available.”

The second leaflet states: “Tofu varieties–Vinton, Beeson. Soymilk–Yellow or white hila. Sized over 6.7 mm round. Natto–Sized through a 5.5 mm round. Miso–Yellow hila. High soluble sugars. Boiling soybeans–Edamame varieties, yellow or black seed coats, high soluble sugar. Sized over 7.5 mm round screen. Frozen green soybeans. Edamame, mukimame. New varieties and types–High soluble sugars, high protein content, specific fatty acids. Grower base of 500 growers in Minnesota, Iowa, Wisconsin, South Dakota. Produce specific varieties for customers–Container lots, bagged, bulk. Bulk barge. Organic or conventional.” Address: P.O. Box 128, Hope, Minnesota 56046-0128. Phone: (507) 451-3316.

3884. United Soybean Board. 1996. National report on consumer attitudes about nutrition. Seattle, Washington. 8 p. Oct. 28 cm.

• **Summary:** This report, commissioned by USB, was conducted by a an independent research firm. It included telephone interviews with 1,000 consumers and primary household shoppers of all ages throughout the USA. They were asked a series of up to 23 questions. The standard margin of error for the study is $\pm 3.2\%$.

Popularity of soy products: A bar graph shows the following, listed in descending order of popularity. The first number indicates the percentage of the population who are familiar with each product; the second number indicates the percentage of those who are familiar with the product that have tried it. Tofu–76% of Americans are familiar with tofu, and 53% of these have tried tofu. Veggie burger–69% / 53%. Soybean oil–65% / 28%. Soy milk–58%–35%. Infant formula [soy-based]–53% / 36%. Soy protein–42% / 32%. Soy flour–41% / 30%. Miso–17% / 58%. Tempeh

14%–45%.

“How healthy are soy products? 40% of the population acknowledge that soy has positive health attributes. Half of those believe soy is a high protein source. 13% of the respondents cited soy as an option for lactose intolerance, 13% as a low fat food and 11% as a cholesterol reducer.”

Consumer concern and confusion about nutrition terms: Trans fatty acids–37% of the population are familiar with the term; 38% of those who are familiar are concerned about trans fatty acids; 51% of those who are familiar are confused about trans fatty acids. Hydrogenation: 36% are familiar, 39% of those are concerned, and 46% of those are confused. Address: 190 Queen Anne North, Seattle, Washington 98109. Phone: 1-800-TALK-SOY.

3885. **Product Name:** [Barley Miso, Soybean Miso, and Rice Miso (Each Aged for 18 Months)].

Foreign Name: Miso.

Manufacturer’s Name: Lion Health Food Co.

Manufacturer’s Address: Zagorska 12/9, YU-11080 Zemun, Yugoslavia. Phone: +381 11-106073.

Date of Introduction: 1996. November.

Ingredients: Organic ingredients.

How Stored: Shelf stable.

New Product–Documentation: Talk with Sladjan Radelovic. 2001. April 21. He started selling these three types of miso is about Nov. 1996.

3886. **Product Name:** [Imoplex–18-Month Barley Miso with Extracts of Shiitake Mushrooms, Konbu, and a Mixture of Herbs (Paste, or Tablets)].

Foreign Name: Imoplex.

Manufacturer’s Name: Lion Health Food Co.

Manufacturer’s Address: Zagorska 12/9, YU-11080 Zemun, Yugoslavia. Phone: +381 11-106073.

Date of Introduction: 1996. November.

Ingredients: Organic ingredients.

How Stored: Shelf stable.

New Product–Documentation: Talk with Sladjan Radelovic. 2001. April 21. He started selling Imoplex (which stands for “Immunity Complex”) in about Nov. 1996. It cleans the body of toxics and parasites, and increases the immunity.

3887. Pulmuone U.S.A. Inc. 1996. Update on Pulmuone (Brochure). South Gate, California. 3 p. 28 cm.

• **Summary:** This 3-page black-and-white brochure was inserted into the color Pulmunoe catalog in June 1997. Contents: Background. Situation analysis. Pulmuone’s future. Why Pulmuone tofu for the general market? Sales and trade promotions. Distribution. Media plan.

“Background: The success of Pulmuone in Korea stems from the original philosophy of naturally produced foods with respects to mother nature. This corporate culture is

prominent in its employees and product line. From delivery personnel to the board of directors, Pulmuone identity is imbedded in the corporate and personal lives of all employees.

"In 1991, Pulmuone's dedication expanded across the Atlantic Ocean to the United States. Pulmuone had a far reaching dream to provide Korean Americans with natural ethnic products they could not find in the U.S. Pulmuone bean paste [miso] and pepper paste were the first products to come into the U.S. and minerals and supplemental foods followed thereafter. Then in June of 1995, Pulmuone opened its first tofu plant in South Gate, California.

"Thus began the history of Pulmuone USA.

"Situation Analysis: Currently, Pulmuone USA holds 70% of Korean tofu market. A market held for over 3 decades by a single Japanese company in the U.S., Pulmuone boldly and aggressively captured the Korean American market within 14 months. Once Pulmuone tofu was introduced to the market, Korean Americans immediately recognized the superior quality of Pulmuone Tofu over other brands.

"Pulmuone has also enjoyed success in the Japanese American market within a short span of time. Pulmuone currently produces private label tofu for Marukai, which is a very popular wholesale type market amongst the Japanese Americans. In the past, they carried two of the most popular brands, Hinoichi and Aloha. However, within a 3 month period, Marukai brand tofu sold both brands by a ratio of 3 to 1.

"We have a state of the art facility with complete automation. Our current production rate is 20,000 pounds of tofu per day running at single shift.

"Pulmuone Tofu's obvious superior qualities are attributed to the following: 1. Use of highest quality pure Vinton 81 soybeans; Vinton 81 soybeans are 30% more expensive than regular soy beans. 2. Quick Chill System for optimum freshness and flavor. 3. Lower pasteurization temperature without compromising taste or shelf stability. 4. Complete Manufacturing Plant Sanitation System on a daily basis."

The company has scheduled advertisements in *Vegetarian Times*, *Los Angeles Times Magazine* (in Korean), and *Super Market Business* for late 1996 and early 1997.

Letter from John Sim, marketing director of Pulmuone. 1997. June 17. This insert was printed on 17 Nov. 1996. Address: 4585 Firestone Blvd., South Gate, California 90280. Phone: 213-564-3000.

3888. Fukutake, M.; Takahashi, M.; Ishida, K.; Kawamura, H.; Sugimura, T.; Wakabayashi, K. 1996. Quantification of genistein and genistin in soybeans and soybean products. *Food and Chemical Toxicology* 34(5):457-461.

• **Summary:** Discusses: Soybeans, soy nuts, soy powder, soymilk, tofu, miso, natto, soy sauce, genistein. Address: 1-

3,5-6. Biochemistry Div., National Cancer Center Research Inst., 1-1 Tsukiji, 5-chome, Chuo-ku, Tokyo 104; 1,4. Tsumura & Co., 3586 Yoshiwara, Ami-cho, Inashiki-gun, Ibaraki 300-11. All: Japan.

3889. Ito, H.; Tong, J.; Li, Y.; Li, Y. 1996. [Chinese douche. I. From itohiki-natto to particle miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 44:216-21. [Jap]*

3890. Li, Y.; Chun, M.; Zhou, W.; Gang, S.; Ito, H. 1996. [Chinese douche. II. From itohiki-natto to particle miso]. *Miso no Kagaku to Gijutsu (Miso Science and Technology)* 44:244-50. [Jap]*

3891. **Product Name:** [Rice Miso, Barley Miso, Brown-Rice Miso].

Foreign Name: Kome Miso, Mugi Miso, Genmai Miso.

Manufacturer's Name: Noka Sojamanufaktur GmbH.

Manufacturer's Address: Hauptstrasse 3, 55232 Alzey, Germany. Phone: 06731-6892.

Date of Introduction: 1996.

New Product-Documentation: Two brochures brought from Biofach in Germany. 1997. March. (1) Noka Sojamanufaktur. (2) Noka Produkte.

3892. Ang, Eng Tie. 1996. *Delightful tofu cooking*. Seattle, Washington: Ambrosia Publications. 160 p. Illust. Index. 23 cm.

• **Summary:** This cookbook, which is not vegetarian, includes recipes using pork, beef, chicken, fish, shrimp, crab, etc. It contains 152 original recipes from around the world. Contents: Acknowledgements. Introduction. About the author. 1. Condiments and sauces. 2. Appetizers and snacks. 3. Soups. 4. Salads. 5. Vegetables. 6. Seafood. 7. Meat and poultry. 8. Rice and noodles. 9. Desserts. Appendix: Diagrams, suggested menus, glossary. Ordering information.

"Eng Tie Ang was born in Indonesia of Chinese parents, moved to Brazil at the age of five, and came to the United States at the age of twenty-five. She learned cooking at an early age at home and in her parents' small restaurant in Suzano, Sao Paulo, Brazil. Her first and most influential cooking teacher was her mother, a master of various kinds of Oriental cooking. As a teenager, she studied Western cooking at a cooking school in her hometown. In addition to *Delightful Tofu Cooking* she has published three other cookbooks: *Delightful Thai Cooking*, *Delightful Brazilian Cooking*, and *Delightful Vietnamese Cooking*...

"In addition to writing cookbooks, Ms. Ang has been a cooking instructor for the University of Washington's Experimental College. She also frequently teaches courses through the Puget Consumers' Co-op and other cooking schools in the Seattle area. She offers courses in tofu

cooking... Moreover, she is an avid organic gardener and an accomplished batik painter.

“Ms. Ang lives in Seattle with her husband, Donald Richard Bissonnette, and two sons, Alex and André.” A small black-and-white photo on the rear cover shows Eng Tie Ang. Address: Seattle, Washington.

3893. Danival. 1996. *Danival: The environmental approach*. Mézin, France. 7 p. 30 cm. Lay-flat comb bound. [Eng]

• **Summary:** Contents: Introduction. Map of France (showing Danival in the southwest near the Garonne River valley, in the historical region of Gascony). Danival, Daniel Gevaert and the Pruneaux d’Agen (plums). Danival Atlantic sea salt (incl. nutritional analysis).

“The jury of the ‘Enterprise and Environment’ competition organized by the French Ministry of the Environment has awarded the Special *Ecoproduit* 1992 prize to Danival for their overall approach to environmental questions.

“The range of organic foods which Danival presented to the jury are manufactured in strict conformity with *Nature et Progres* specifications through the whole production process.

“All packing materials can be re-used and recycled. Preserves are bottled in glass jars with tinplate caps.

“A small hydro-electric generator is powered by the old water mill. In this way, part of the factory’s power supply is produced from a renewable source of energy.

“Danival’s originality also lies in their know-how in the manufacture of miso and shoyu. These two products are obtained from fermented soya beans and are very rich in easily digested vegetable protein.” For the past ten years Daniel Gevaert, the son of Pierre Gevaert, has been farming 60 hectares in the fertile Garonne Valley—also known as the Valley of the Four Seasons. His agricultural methods are exclusively organic. “The farm is Danival’s main supplier of raw materials—and this is where Danival has the edge!”

“The company is housed in the Andiran water-mill buildings and employs nine people full time. Today Danival’s range of organic products includes 9 varieties of jam, pureed prunes, semi-rehydrated Agen prunes, peach and apple compotes, concentrated tomato puree, ratatouille, tomato ketchup, tomato sauce, bolognaise sauce, spaghetti sauce, sweet-corn, chick peas, azuki beans, lentils, haricot beans, Japanese pumpkin puree, seitan, gluten powder, miso, shoyu, and Atlantic sea-salt from the Ile de Ré.”

“All packaging materials can be re-used and recycled. Preserves are bottled in glass jars with tinplate caps.

“A small hydro-electric generator is powered by the old water mill. In this way, part of the factory’s power supply is produced from a renewable source of energy.

“Danival’s originality also lies in their technical know-how in the manufacture of miso and shoyu. These two products are obtained from fermented soya beans and are

very rich in easily digested vegetable protein.” Address: Moulin d’Andiran, 47170 Mézin, France. Phone: +33 5 5397 0023. Fax 5 5397 0010.

3894. Hosking, Richard. 1996. *A dictionary of Japanese food: Ingredients & culture*. Boston, Rutland, Vermont, Tokyo: Tuttle Publishing. 239 p. Illust. by Richard C. Parker. Index. 21 cm. [16 ref]

• **Summary:** An excellent, accurate book. The basic entry for each word is given under its Japanese name (thus *daizu* rather than soybeans). Each entry includes the Japanese term in kana (usually hiragana) and (usually) kanji (Chinese characters). One hundred small illustrations are very helpful.

Here is an example: “dengaku (hiragana, kanji) a preparation in which food such as eggplant, taro, konnyaku, or tofu are dressed with a sweetened miso topping and grilled on skewers. Fish *dengaku* is called *gyoden*.”

Seventeen appendices (p. 197-235) give detailed discussions of the following important Japanese foods and related items: Chopsticks. Katsuobushi. The kitchen and its utensils. Kombu. The meal. Miso. Saké. Salt. Sansai. Soy sauce. Sushi. Tea. The tea ceremony. Umami and flavor (incl. MSG). Vegetarianism (incl. Buddhism, shōjin ryōri, and fucha ryōri). Wasabi. Wasanbon sugar.

The author has lived in Japan since 1973. He holds an M.A. degree from Cambridge Univ. Address: Prof. of Sociology and English, Hiroshima Shudo Univ., Japan.

3895. Masuda, Koh. editor in chief 1996. *Kenkyusha’s new Japanese-English dictionary*. 4th edition. Tokyo: Kenkyusha. xiii + 2111 p. 27 cm. [Eng; jap]

• **Summary:** The first edition of this superb dictionary was published in 1918, the second in 1931, and the third in 1954. Some of the definitions of soy-related terms are quite poor. Examples:

Edamame: “green soybeans.” Better: Green vegetable soybeans, or Edamamé.

Kōji: “*koji*.” Good.

Miso: “*miso*.” Good. Also defines: Miso-koshi: a miso strainer; Miso mame: a soybean. Misoshiru: miso soup.

Nattō: “fermented soybeans.” Better: Whole soybeans fermented with *Bacillus subtilis*. Nattō-jiru: “Miso soup with minced fermented soybeans.” Good.

Omiotsuke [Jap: Misoshiru] See miso [Miso soup; word used by women only].

Otsuke [Jap: Misoshiru] Miso potage (soup).

Shōyu: “soy (sauce).” Should say: Soy sauce. The word “soy” no longer refers to soy sauce.

Tōfu: “bean curd [cheese]; *tofu*. Yaki-dofu: “roasted bean curd.” Tofu itcho: a piece [cake] of bean curd. Tofu-ya: “a tofu dealer [seller, maker].”

Tônyû: “soybean (soya) milk.” Better: Soymilk, soya milk, or soybean milk.

Yuba: “dried bean curds.” Should say: The thin protein-lipid film formed atop soymilk when it is heated.

Neither nomamé nor tsurumame, both referring to the wild soybean, are entries in this dictionary.

Non soy: Azuki (characters small + bean): “an adzuki [adsuki] bean.” Azuki aisu: “adzuki-bean sherbet.” Azuki-kayu: “adzuki-bean gruel.” Azuki-han: “rice boiled with adzuki beans.” Azuki-iro no: “reddish-brown or russet” in color. Kintoki-azuki: “a large kind of adzuki bean.” Kintoki-mame: “adzuki beans cooked with sugar.” Mochi: “rice cake.” Yôkan: “sweet jelly of beans; a fine sweet paste.” Mizu-yôkan: “soft adzuki-bean jelly.” Mushi-yôkan: “steamed adzuki-bean jelly.” Yôkan-iro: “a liver [rusty] color; a faded color (as of clothes).” Note: The character *yô* in *yôkan* means “sheep” and can also be pronounced *hitsuji*. Zenzai: “thick bean-meal soup (with sugar and rice cake [mochi]).”

3896. Steinkraus, Keith H. ed. 1996. Handbook of indigenous fermented foods. 2nd ed., revised and expanded. New York, Basel, and Hong Kong: Marcel Dekker, Inc. xii + 776 p. Illust. Index. 26 cm. Food Science and Technology Series, Vol. 73. Index. 26 cm. [350+ ref]

• **Summary:** Contents: Introduction to indigenous fermented foods. (1) Indonesian tempe and related fermentations: Protein-rich vegetarian meat substitutes. (2) Indigenous fermented foods involving an acid fermentation: Preserving and enhancing organoleptic and nutritional qualities of fresh foods. (3) Indigenous fermented foods involving an alkaline fermentation. (4) Indigenous fermented foods in which ethanol is a major product: Type and nutritional significance of primitive wines and beers and related alcoholic foods (incl. Chinese koji (qu, “big-qu, small qu”), p. 449), Japanese amazake (p. 480-81). (5) Indigenous amino acid / peptide sauces and pastes with meatlike flavors: Chinese soy sauce, Japanese shoyu, Japanese miso, Southeast Asian fish sauces and pastes, and related fermented foods (incl. Korean soy sauce {p. 543-45}, inyu {p. 544-45}, Korean doenjang, kochujang, Japanese hamanatto {p. 624-26}). (6) Mushrooms: Producing single-cell (microbial) protein on lignocellulosic or other food and agricultural wastes. (7) General papers related to indigenous fermented foods. Address: Inst. of Food Science, Cornell Univ., Geneva, New York.

3897. Tetsudo Unyukyoku. 1996. Shio sato shôyu miso ni kansuru chôsa [Survey concerning salt, sugar, shoyu, and miso]. Tokyo: Yushodo Shuppan. 23 cm. Series: Juyo Kamotsu Jokyô, no. 9. [Jap]*
Address: Japan.

3898. Winter, Ruth. 1996. Super soy: The miracle bean. New York, NY: Crown Publishers Inc. 192 p. Index. 21 cm. [106 ref]

• **Summary:** On the cover is written: “This wonder bean can help fight cholesterol, high blood pressure, blood sugar, cancer, ease menstrual and menopause symptoms, and keep a colon healthy. Includes a cookbook of 50 soy recipes from New York’s Natural Gourmet Cookery School.”

Contents: Introduction: The Cinderella bean. 1. How soy protects the heart and blood vessels: Full of fiber, the Eskimo secret omega-3 fatty acids, lecithin and vitamin E, preventing strokes, magnificent magnesium, soy and the Mediterranean diet, foam to wash out cholesterol?, cholesterol competitors—phytosterols, is it thyroid hormone [when thyroxine levels rise, cholesterol falls]?, amino acid at work?, could it be the B’s?, is it the flavonoids?, the bean and obesity, high blood pressure and the bean, could it be just avoiding meat and dairy products?, summing it up. 2. How soy protects against cancer: Protease inhibitors, trypsin inhibitors, plant estrogens, polyphenols, terpenes—antioxidants, fighting phytates, maybe it’s due to low-count amino acid, saponins, inositol—the cancer-fighting phytic acid, which soy products have the most anticancer potential?, potential adverse effects of soybeans. 3. How soy helps ease digestive problems: Promoting regularity, calcium and soybeans. 4. How soy is beneficial in diabetic diets. 5. How soy is proving beneficial to women: The soy and the cycle, other hormonal benefits, magnesium, PMS and pregnancy, contraceptive or fertility inducer?, so “B” it, the bones need it, magnesium and bones, boron and bones, it could be the phytates. 6. Soy and men: Soy and sex, protein power. 7. Soy products and their nutritional value: Soybeans, edamame, soybean sprouts, tofu (also known as bean curd and dou fu-tofu), tempeh, soy milk, yuba, soy cheese, okara, soy yogurt, soy sauce, soy oil, soybean lecithin, soy nuts, miso, natto, soy flour, soy powder, soy protein isolates, concentrates and grits, texturized soy protein, convenience of soy foods. 8. Easy ways to add soy to your diet: Some other easy ways to add soy to your diet, sensible soybean use. 9. Recipes: Appetizers, soups, salads, main dishes/entrées, side dishes/breakfast, sauces/dips, desserts. Glossary. Where to get more information. References. Address: M.S., Health and science writer, Short Hills, New Jersey.

3899. Stevens & Associates, Inc. ed. and comp. 1997. U.S. 1997 soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 47 p. 28 cm. [29 ref]

• **Summary:** This second, expanded edition of the directory contains more than 270 company listings. Contents: Forward. How to use the Soyfoods Directory (incl. Internet access). Daily soyfood guide pyramid (color). Soyfood descriptions (alphabetical): Introduction, green vegetable soybeans (edamamé), hydrolyzed vegetable protein (HVP),

infant formulas—soy based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen dessert, okara (see soy fiber), soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour, soy grits, soy protein concentrate, soy protein isolate, soy protein—textured, soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk (soy beverages), soynut butter, soynuts, soyoil & products, sprouts—soy, tempeh, tofu & tofu products, whipped toppings (soy based—“similar to other nondairy whipped toppings, except that hydrogenated soyoil is used instead of other vegetable oils”), yuba. Soybean products chart: From whole soybeans, from soybean meal, from soyoil and lecithin. Soyfood companies by product (products listed alphabetically).

Composition and nutrient content of soyfoods (large table, p. 14). Soyfood companies (alphabetical by company name; Each listing contains address, contact, phone, soy products, product names, distribution, to locate product, classification). Mail-order soyfoods: Soyfood mail order companies (listed alphabetically by company). Soyfood companies by state (alphabetical by state; California has by far the most). Soybean promotion & research organizations (national, and state). Professional associations and industry information resources. Soy cookbooks (19). Soy resource books (10). Soyfood fact sheets and recipes: 1-2 pages each for meat alternatives, miso, soyoil, soy flour, soymilk, tofu, textured soy protein, whole soybeans. Soyfoods directory survey.

This directory is on the Internet’s World Wide Web at <http://www.soyfoods.com>. For more information or suggestions, call 1-800-301-3153. The Internet version of the Directory continues to improve. “The first year saw hits to our site increase from 1,000 the first month to more than 8,000 per month now. We have added a new search engine that makes it easier to find information and a new monthly e-mail newsletter, *Soyfoods USA*, designed to inform media sources, dietitians and consumers about the latest soyfoods information. To subscribe to this popular newsletter, just send an e-mail message to soyfoods@ind.com with the words “Subscribe Soyfoods USA” in the body or subject field.”

Talk with Roger Stevens. 1997. March 10. The 1997 directory was first available in January 1997. About 100,000 copies of this directory were printed, and all but 7,000 have already been sent out free of charge. About 77,000 copies were sent to registered dietitians nationwide; all are members of the American Dietetic Association. Another 10,000 copies were sent to the American Association of Family and Consumer Sciences—basically extension personnel at the Cooperative Extension Service in each county; these people provide a lot of consumer information about foods and agriculture. About 500 copies were sent to each of the 20 state soybean development councils. The remaining 6,000 copies were sent to callers

who left their name and address at a toll-free answering service. The next step is to do a media tour in Indiana. Traveling with a registered dietitian, they expect to generate a lot of requests from citizens of Indiana. One of the goals is to show other states that if you promote soyfoods in this manner, you will get a lot of interest. Roger hopes to encourage other states to take a more active role in promoting soyfoods. The directory has generated a tremendous amount of information on the part of dietitians who call the toll-free number and have many questions about soyfoods; Roger tries to refer them to people who have the answers—such as 1-800-Talk-Soy. The Indiana Soybean Council has had to hire a new person just to handle the requests for this directory.

Next Roger plans to do a survey of registered dietitians to learn more about their responses to the 1997 directory. He might ask: Did you receive the book? Do you use it? If so, in what way and how often? How many people do you influence with regards to soyfoods as a result of this book? So if each of the 77,000 dietitians influences, on average, 10 people a year, the directory has reached more than 750,000 people. One major goal of this book is to help dietitians include more soyfoods in their own diets and in the diets of their clients. How can we better help you do this? Do you want a cookbook? A starter kit? Shall we include coupons?

From the focus groups he has already conducted, Roger thinks that future editions of the directory will be presented more like a cookbook or recipe book, with the directory in the back. “People really like the recipes. They just hand them out to their clients. We get requests for 100 books at a time from dietitians, who give the entire book to their clients at classes, in their offices, etc.” Roger has the funds to do the research to find out exactly what dietitians want in the way of soyfoods recipes and how they want them organized.

Other possible questions: Which part or parts of the book do you find most valuable? Which do you find least valuable. Is there any information which is not in the book that you wish were included?

Roger would also like to develop for the next edition of this book a graphic presentation of the inside of a typical supermarket showing all the different products which contain soy.

Note: The word “soyoil” is used instead of “soy oil” throughout this directory. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

3900. Sullivan, Cheryl; Rhodes, Kathy. 1997. *Simply soy: A variety of choices*. Williamsburg, Virginia: Virginia Soybean Association. 118 p. Undated. Illust. Recipe index. 26 cm.

• **Summary:** Contents: Introducing soyfoods into your diet. The healthful soybean. Exploring soyfoods: Dried soybeans, fresh green soybeans, soy milk, tofu, textured soy

protein, soy flour, soy grits, tempeh, miso, soy meat analogs. Where to find soy products. Nutrient information. Recipes: Breakfast, beverages, breads, appetizers & snacks, salads, soups, sandwiches, side dishes, main dishes, desserts.

Talk with Susan Haller of the Virginia Soybean Assoc. 2000. Nov. 9. This undated book was published about 3-4 years ago.

Talk with Cheryl Sullivan. 2002. Aug. 12. She wrote this booklet for the Michigan Soybean Promotion Committee; it was published in about Jan. 1997. It was never sold and is now available online at www.soyfoods.com/SimplySoy. Address: 1. M.A., R.D., Sullivan Nutrition Inc.; 2. PhD, R.D., Preventive Cardiology Program, Univ. of Michigan; c/o 151 Kristiansand Drive, Suite 115 E & F, Williamsburg, Virginia 23188. Phone: (757) 564-0153.

3901. Pearce, Jean. 1997. Getting things done: Starting out on soy. *Japan Times (Tokyo)*. Feb. 12. p. 17. Wednesday. [Eng]

• **Summary:** “Last week’s columns reported on recent research pointing to the dietary benefits of soybean products in relieving complaints associated with menopause.”

Discusses isoflavones and the isoflavone content (in micrograms per gram) of kinako (roasted soy flour, 2,589), roasted soybeans (1,625), edamame (1,354), natto (1,273), regular tofu (509), fried tofu (695), soy milk (357), miso (373), shoyu (16).

Gives several tofu recipes and recommends *The Book of Tofu* by Shurtleff & Aoyagi.

“And finally, kudos to Japan Airlines for creating natto in a palatable form, freeze-dried and flavored... It has been tremendously successful. In two years, total sales amounted to ¥56 million. Just think of all those isoflavones.” A photo shows Jean Pearce.

3902. Smith, Michelle. 1997. Members of the Soyfoods Association of North America (as of 12 Feb. 1997). Walnut Creek, California. 1 p. Feb. 12. Unpublished typescript.

• **Summary:** The Association has 35 paid members. Two of the companies (Devansoy and MLO Products) have two people listed from each company. The companies are: ADM–Jack Painter, Eden Foods–Sally Gralla, Devansoy–Elmer Schettler & Ed Pedrick, Lightlife Foods–Rick McKelvey, MLO Products–Ed Cabelera & Ryan Schmidt, Pulmuone–Seung Hoon Lee, SunRich–Allan Routh, Sacramento Tofu–Alvin Kunishi, American Miso–Don DeBona, Tofu Shop–Matthew Schmit, Turtle Island–Seth Tibbott, Vitasoy–Yvonne Lo, Westbrae–Myron Cooper, American Soy–Tim Redmond, Clofine–Richard Eluk, International ProSoya–Dusty Cunningham, Monsanto–Molly Cline PhD, MYCAL–Terry Tanaka, Natural Products–Paul Lang, Pacific Soybean–Dan Burke, Alfred College–Charles Goubau, Ohio Soybean Council–Jim

Kapp, Iowa Soybean Association–Kirk Leads, Iowa State University–Dr. Lester Wilson, Mark Messina PhD, Nebraska Soybean Board–Stephanie Lynch, EMB Partners–John Eastham, Nutrition Advantage–Anne Patterson R.D., Soyatech–Peter Golbitz, Soyfoods Center–Bill Shurtleff, Apple Valley Market–Gary Pappendick, Essene–Howard Waxman, Sevananda–Vince Hoffman. Address: Executive Director, Soyfoods Assoc. of North America, P.O. Box 3179, Walnut Creek, California 94598. Phone: 510-935-9721.

3903. Nelson, Emily. 1997. Ambiance to go: Two neophytes bring a taste of New York to Hungry Pittsburg: In the land of the Pierogi, customers stand in line just for the atmosphere. But avoid the curried tofu. *Wall Street Journal*. Feb. 18. p. A1, A17.

• **Summary:** Tom Baron and Juno Yoon are copying hot restaurant ideas in Pittsburg. Their restaurant named Soba serves miso-glazed red snapper. But one evening at their restaurant Kaya, they both tasted the curried-tofu appetizer, found it terrible, and sent it back to the kitchen. Address: Staff reporter.

3904. Kourebanas, Maria. 1997. Less is more: Dining on the light side–International bean soups. *Gourmet* 57(2):112, 143-45. Feb.

• **Summary:** Contains a recipe (p. 145) for Adzuki bean miso soup (from Japan), using ¼ cup white miso.

3905. **Product Name:** Soy meat Mealmaker (Formerly Cajun BBQ Style and Vegan Cajun Burger) [Original Spicy Flavor].

Manufacturer’s Name: Soy Devine.

Manufacturer’s Address: 1388 Haight St., Suite 222, San Francisco, CA 94117. Phone: (415) 339-8045.

Date of Introduction: 1997. February.

Ingredients: Organic nigari tofu*, organic tomato sauce*, fresh onion, filtered water, mustard, organic brown rice syrup*, organic apple cider vinegar*, Bragg Liquid Aminos, organic miso*, organic peanut butter*, fresh garlic, non-irradiated spices. * = Grown in accordance with the California Organic Foods Act of 1990.

Wt/Vol., Packaging, Price: 14 oz (392 gm) plastic tub. Wholesales for \$3.00. Bulk price (4 lbs. minimum): \$3.00/lb.

How Stored: Refrigerated or frozen.

New Product–Documentation: Call from Martha Devine. 1997. Jan. 16. She left Arcata in April 1996 and is starting this month to make products in San Francisco in a new kitchen. She buys her tofu from Quong Hop. This product, which was launched in Jan. 1995 as Vegan Cajun Burger (On a Bun), has been renamed and repositioned.

Photocopy of Label sent by Martha Devine. 1997. Feb. 3. This product will be coming soon. Label: Top–3½ inches

diameter. “Healthy delicious fast foods. A vegan diet is kinder to animals, people & the environment.” “Use meatless Soy meat Meal-Maker to replace the beef, pork, chicken, turkey, tuna, or sausage in dishes like: burritos, chili, enchiladas, nachos, tacos, tamale pie, tostadas, shepherd’s pie, lasagna, spaghetti, hero subs, sloppy joes, rice or noodle casseroles, or your own favorites! Pre-cooked. Delicious ‘as is’ or just heat & eat! Soy is joy.” Note: Mara changed her name back to Martha (her name at birth) in Dec. 1995.

3906. Witt, Barbara. 1997. *Pan-Asian express: Quick fixes for Asian food fans*. New York, NY: Bantam Books. xiii + 194 p. Index. 24 x 14 cm.

• **Summary:** The author, who grew up in Connecticut, loved Chinese food and Mott Street in New York City. An excellent writer, she won the James Beard award in 1993. The section on “Seasonings” (p. 8-13) gives descriptions of: Hoisin sauce, sesame seeds, soy sauce (Kikkoman is a good brand; tamari is darker and stronger), soy sauce–dark (sometimes called “black soy”; Koon Chun is a good brand), soy sauce–mushroom (flavored with straw mushrooms; Pearl River Bridge is a good brand). Soy sauce–shrimp (The Chinese equivalent of Thai and Vietnamese fish sauce. Pearl River Bridge is a good brand), soy sauce–Indonesian (*Ketjap manis*; not to be confused with the less subtle Chinese sweet soy sauce).

The section on “General packaged goods” (p. 15-18) gives descriptions of: Black beans–Chinese salted (Chinese salted black beans: “The ancient and original soyfood that produced miso and soy sauce looks kind of pitiful...” Good brands are Mee Chun and Pearl River Bridge. Avoid those flavored with five-spice powder), coconut milk (canned is excellent), coconut cream, tofu (“innocuous”).

Soy-related recipes include: Seared corn, tomato, and black bean relish (with “chopped Chinese black beans,” p. 40-41). Silky tofu walnut dip (p. 50-51). Bean paste soup (*miso shiru*, with red bean paste, p. 91). Romaine salad with lemon soy dressing (with soy sauce, p. 95-96). Tropical fruit, avocado, and tofu salad (p. 110-11). Scallops with pork and black beans (with “Chinese fermented black beans,” p. 146-47). Curried mushrooms, peas, and potatoes (p. 171-72). Address: Washington, DC.

3907. DeBona, Don. 1997. Update on American Miso Co. (Interview). *SoyaScan Notes*. March 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Last Monday, March 17, Don ended his work at American Miso Company (AMC)—after 13 years of making miso. Monday was St. Patrick’s Day and Don is more Irish than Italian. The week before, Barry had said to Don, “You know, this is not working out.” During those 13 years, the company’s annual miso production has grown 400-500%, until now AMC makes about 200 metric tons of

miso a year, and has about 70% of the miso market on the East Coast of the United States. When Don arrived at the company there were 8 vats of long-term miso, each containing about 4,000 kg; now there are 48 such vats.

In mid-1995 Don decided to end his minority partnership with Barry Evans. He sold all of his shares in the company to Barry, soon after Barry’s release from prison in California in the fall of 1995; the terms of the sale are confidential, but Don stayed on as an employee with a yearly salary. Barry really resented the fact that Don ended his partnership, but Don had great difficulty being partners with Barry—just as John Belleme had before him. Because of this feeling, Don was able to get “only a fair deal” financially for his share of the company. After the break-up, their relationship has continued to grow worse.

Don needs to have income because he has three kids, including two teenagers who will soon be entering college; his youngest is age 10. Now Don is looking for a new job. He still lives in the same house by the miso factory; he owns that house. Since he sold his share in AMC to Barry Evans, Greg Gonzales (who formerly ran errands for Barry in Los Angeles) has been working at AMC. Don hasn’t really taught him how to make koji and miso—because he was never asked to—but Greg has learned by observation. Now Greg does all the work, but he is not that interested in it and he has a long way to go until he understands the important subtleties of making koji. The company will continue to exist but the quality of the miso is likely to fall.

Barry got out of jail in the summer of 1995. Since then he has been spending a lot of money—not on his companies but on personal belongings; he now has three houses in Asheville. This spending binge put both of Barry’s companies, American Miso Co. and Great Easter Sun, “way out on a limb financially.” Barry made it very uncomfortable for Don to stay on at AMC. Barry has not visited AMC even once in 3 years.

Don is considering writing a history of the company, now that he has a little spare time. He is starting a consulting company and would like to train others around the world how to make miso. Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3908. DeBona, Don; Chaplin, Paul. 1997. Update on miso in Europe (Interview). *SoyaScan Notes*. March 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Don attended Biofach in Germany this month; this is the fourth time he has attended. He has had two students who came from Europe to study miso-making with him at American Miso Co. in North Carolina. Jan (pronounced *Yon*) Kerremans, who worked at Lima Andiran in southern France, studied with Don for 2 months, Oct. 1984 to Nov. 1984. Jan was a minority partner with Pierre Gevaert. Jan now still works for Lima, but not as a miso

maker; originally Flemish, he married a French woman, lives in Paris, and is Lima's sales rep.

Paul Chaplin from Wales studied with Jan Kerremans at Lima in France during May and June 1984, then with Don for 2 months, in October and November 1985. His miso manufacturing business in Wales is still tiny, but it is growing well. Total turnover (income) in fiscal 1996 (Nov. 1995 to Nov. 1996) was £28,000 (= \$44,800). Paul's new address is: Source Foods (Organic Priority) 9 Cwm, Business Centre, Marine Street, Cwm, Ebbw vale, NP3 6TB, Wales, UK.

For both Jan and Paul, Don provided miso-making instruction, as well as room and board, free of charge. Barry Evans did not like Don to be teaching other people to make miso.

Pierre Gevaert was the founder of Lima. His son is named Daniel, and Daniel's wife is Valérie. Daniel studied miso-making with Jan Kerremans in southern France. In early 1990, after Pierre Gevaert died, Daniel and his wife took over Lima's miso company at Andiran in southern France. They changed the company name to Danival from Lima-Andiran. The two of them now make two types of miso, and they also sell shoyu and tamari—but it is not known if they make the latter two products or not. Lima and Danival are no longer in contact with one another because there are bad feelings between them; Lima purchases their miso from American Miso Co.—much to Danival's chagrin.

Other new miso companies in Europe: Noka, run by Karl Selgmann, in Alzey, Germany. Karl used to be with Mr. Hiroshi Kozaki of Kanta Kozaki in Urbach; that company started in 1990. Paul Chaplin has visited Noka.

Two new miso makers in Yugoslavia are Sladjan Randjelovic and his wife, Vladimirka, of Lion Health Food Co. (Zagorska 12/9, YU-11080 Zemun, Belgrade, Serbia / Yugoslavia). Their business card says: "Belgrade, London, and Beijing." Vladimirka is actively involved in the business. They are both very macrobiotic. They already make *mizumé* (rice syrup or rice malt). Their miso was of fairly good quality. They also made an interesting miso with added shiitake and kombu.

Hans Weisseneder is making miso for Sojvita in Lichtenwoerth, Austria. He had photos of his vats which are in a wine cellar outside of Vienna.

In Europe, imports of miso from Japan are almost certainly larger than total European miso production. Address: General Manager, American Miso Co., Route 3, Box 541, Rutherfordton, North Carolina 28139. Phone: 704-287-2940.

3909. Danival. 1997. Price List—Danival: 1 March 1997. Mezin, France. 21 p. 30 cm. [Eng]

• **Summary:** Contents: Unrefined Atlantic sea salt. Tomato preserves. Vegetable preserves (incl. azuki with hijiki sea weed). Mushroom preserves. New condiments. Fruit purees

with no added sugar (but 35% corn syrup for sweetness). Cereal sweeteners (barley malt, wheat syrup, corn syrup, rice syrup, apple syrup). Desserts and fruit juice. Fruit desserts. Agen prunes. Danival's macrobiotic food range: "Europe's leading manufacturer of organic macrobiotic food products. Produced in France, traditional Japanese manufacture. Non genetically engineered soya, grown by Mr. Berjon from his own seed beans since 1991." Brown rice miso* (unpasteurized, 4 sizes), barley miso* (unpasteurized, 4 sizes), young shiro miso* (unpasteurized, 2 sizes), shoyu* (unpasteurized; 5 sizes), tofu*, smoked tofu*, tempeh with shoyu and wakame*, seitan with shoyu and hijiki*, gluten powder*. * = Organically grown, certified by AB-Ecoconcert.

A 4-page French-language color insert (dated March 1997) contains color photos of many of these products, sealed in glass jars—incl. "Bio Miso (*Orge/Gerst*), Sauce Bolognaise Seitan, Raviolis (*Farcies au Seitan*), and Bio Shoyu." Address: Moulin d'Andiran, 47170 Mézin, France. Phone: +33 5 5397 0023. Fax 5 5397 0010.

3910. Foley, Michael. 1997. Briefcase portables: Turn your desk into the hottest lunch spot in town. *Vegetarian Times* No. 235. March. p. 62. *

• **Summary:** Includes recipes and a list of editors' favorite lunches.

3911. Hanamaruki K.K. 1997. Hanamaruki [Hanamaruki]. Nagano Prefecture, Japan. 21 p. 30 cm. [Jap]

• **Summary:** The first 13 pages of this color brochure are about the company, the next four pages are about the top management, and the last 3 pages show the company's miso products. Inserted into the back, and dated April 1999, is a chronology of the company from its founding in 1918. Address: Hirade 1560, Tatsuno-cho, Kamiina-gun, Nagano-ken 399-0422 Japan. Phone: 0266-41-1321.

3912. Miyako Oriental Foods, Inc. 1997. Cold Mountain Miso: A traditional taste of Asia to the modern world (Leaflet). Baldwin Park, California. 6 panels. 22 x 10 cm. Address: 4287 Puente Ave., Baldwin Park, California 91706. Phone: 818-962-9633.

3913. Pirello, Christina. 1997. Cooking the whole foods way: Your complete, everyday guide to healthy, delicious eating with 500 recipes, menus, techniques, meal planning, buying tips, wit & wisdom. New York, NY: Berkeley Publishing Group (HPBooks). xii + 525 p. March. Illust. Index. 24 cm. [38 ref]

• **Summary:** This is basically a macrobiotic cookbook. It is largely vegetarian, but has one long chapter of fish recipes (p. 189-220). No red meat or sugar is used. One long chapter, titled "Tofu, tempeh, & seitan" (p. 157-88) contains many recipes. Other soy-related recipes include: Basic miso

soup (p. 38). Miso millet stew (p. 78). Minute miso soup (p. 102). Black soybean relish (p. 136; as black soybeans are simmered, they create their own gravy). Baked beans with miso & apple butter (p. 143). Tofu cheese (with miso, p. 162). Lemon miso sauce (p. 422). Also contains recipes for amasake, azuki beans, and sea vegetables.

The recipe for Tofu cheese (p. 162), which is very creative and delicious, was developed by Christina many years ago, but the method was kept a secret—until now! Basically extra firm tofu is fermented/pickled in white miso. This recipe is for those who can't stand to give up cheese, and the resulting fermented soy cheese can be used in place of dairy cheese in many recipes, ranging from creamy white sauces to thin squares on a cracker. The tofu can be fermented in the miso anywhere from 12 hours to 4 days—depending on how strong you would like the flavor to become.

3914. Viana Naturkost GmbH. 1997. Preise und Neues [Prices and new products]. Euskirchen, Germany. 28 p. 30 cm. [Ger]

• **Summary:** This impressive, stylish/classy color catalog from Biofach, March 1997, consists of two parts. The 20-page smaller format (26.5 cm) black-and-white insert gives the prices of all products for 1997. The larger color catalog describes new products. The price list contains the following product categories: Basic and seasoned tofu products. Fresh tofu spreads. Tofu hot dogs. Wheat gluten products. Tofu cutlets. Tempeh. Seitan. Burgers and snacks. Spreads in glass jars. Soy sauce and miso products (organic shoyu, organic tamari, barley miso, brown rice miso). Fresh patés. Deli salads. Soya mayonnaise (Vianaïse). Rice drink. Noodles. Fresh pasta stuffed with tofu fillings (Tortellini, Maultaschen). Frozen products (incl. Chili con tofu and spring rolls). Sprouts (11 types & products, not incl. soy sprouts). Spreads from Noka. Canned products (*Konserven*). Address: Willi-Graf-Str. 88, 53881 Euskirchen-Kuchenheim, Germany. Phone: 02251-9446-0.

3915. Caruthers, Maryanne. 1997. Miso may not spark romance, but many love its unique flavor. *Oregonian* (Portland, Oregon). April 22.

3916. Elliott, Julia. 1997. With a little help from the soybean. New York, NY: SCB—Published by the author. 62 p. No index. 28 cm. Lay-flat comb bound. April.

• **Summary:** Contents: Facts and information (p. 1-8): Why the soybean? Areas of health that soy may affect: Heart disease and cholesterol, cancer, osteoporosis, kidneys, Alzheimer's disease, menopausal symptoms. Soyfoods (p. 9-13): Soy milk, tofu, soybeans, soy flour, miso, tempeh, texturized soy protein, soy protein isolates. Isoflavone contents. Recipes (p. 14-61): Appetizers, min dishes, desserts, tofu.

Note 1. There are no references to back up the many medical statements and claims on pages 1-8 of this book.

Note 2. This is not a vegetarian cookbook; ingredients include 1 lb. ground beef (p. 14), 6½ oz. minced clams (p. 15), 1 lb. sweet or hot sausage (p. 16). Address: 10 Guyton St., Kingston, New York 12401. Phone: 914-338-6368.

3917. Labbé, Max. 1997. Ces étonnants aliments végétaux fermentés et lacto-fermentés [Those astonishing fermented and lactic-fermented vegetable foods]. Auvers sur Oise, France: Published by the author. 116 p. Preface by Richard Hwei-Ming Bau. Illust. No index. 21 cm. [Fre]

• **Summary:** Part III of this popular book, titled "Asiatic Specialties," contains the following sections and subsections (p. 77-103): Chinese and Japanese fermented foods: Shoyu and tamari, miso, umeboshi, nuka pickles, natto, sufu. Characteristics and way of tempeh: Definition, preparation, arrangement of grains before inoculation. Indonesian tempeh: Preparation of the cakes, preparation of the inoculum. Javanese tapé (tapeh) and its culture. American-style tempeh. A color photo on the rear cover shows Max Labbé. Address: 3 rue Emile Level, F- 75017, Paris.

3918. *Nutrition News* (Riverside, California). 1997. Soy tsunami: The wave of the future. 21(4):1-4. April. [1 ref]

• **Summary:** Contents: A wave is coming (introduction). East soy and save your life. Soy vs. cancer. Top ten benefits of soy—According to Earl Mindell's Soy Miracle. Genistein is unique to soy. Soy vs. heart disease. The pause that refreshes: a soy shake. And, by the way, save your planet too. Get on the soy train! If you are a first timer, jump in there with tofu and/or isolated soy protein.

Where the good stuff is—table showing nutritional composition, including isoflavones of 1 serving of: miso, cooked soybeans, soy flour, soymilk, soy nuts (dry roasted), soy protein isolate, tempeh, firm tofu, low fat tofu (aseptic pack), extra firm tofu (aseptic pack), textured soy protein. Note: Good sources of isoflavones provide 30-50 mg per serving.

"This issue of *Nutrition News* is dedicated to partners William Shurtleff and Akiko Aoyagi and to Frances Moore Lappe, pioneers in the promotion of soyfoods and of the concept of kindness of eating."

3919. Spaelstra, J.; Shapira, H.; Donnelly, H. 1997. Re: Introducing Dakini Health Foods Pvt. Ltd., in Pune/Puna, India. Letter to William Shurtleff at Soyfoods Center, May 7. 1 p. Handwritten.

• **Summary:** The letter begins: "To whom it may concern: We are a young company. Just started one year ago and very enthusiastic. I have come across your *Book of Tofu* and loved it. Started experiments and love it even more now. My friend and partner in business [Seemo] came across some

American book [*Handbook of Indigenous Fermented Foods*, edited by Keith Steinkraus] that had 1 chapter about tempeh production. Out of this he developed the way to make tempeh here in India, which was quite difficult at times because the info was far from complete. Meanwhile our plans have changed because of all this and the very wholesome atmosphere that we sense around working with soybeans (and consuming the different products)—the same atmosphere we are picking up from your books too which is very inspiring to us.”

They order three books—tofu-, tempeh-, and miso production, plus *The Book of Tempeh*—all by Shurtleff & Aoyagi. “We would really like to set up a complete soyfood line now. So please get in touch!” Signed: J. Spaelstra (Holland), H. Shapira (Israel), and H. Donnelly (Indian). Address: Dakini Health Foods Pvt. Ltd., Vidyut Nagar, Plot A2, Kawdewadi, Pune/Puna 411 001, India. Phone: 0091-212-63-1990 (phone and fax).

3920. Gevaert, Valérie. 1997. Re: Brief history of Danival and current activities. Letter to William Shurtleff at Soyfoods Center, May 13—in reply to inquiry. 2 p. Typed, with signature. [Eng]

• **Summary:** “Daniel Gevaert purchased the Lima Andiran site in early 1990—but not the Lima trademark—and established Danival the same year in June. Our miso and shoyu, as well as our fruit and vegetable preserves are prepared with certified organic ingredients, and we also package unrefined Atlantic sea-salt. Our company name is indeed Danival.” The address and phone and fax numbers are shown below.

“My full name is Valérie Fenech Saint Genieys. Daniel and I have been married for 15 years, and we have two sons, Benoît age 14 and Martin age 10.

“We began producing miso as soon as we bought the site, and put it on the market for the first time in 1992, after completing the first 18 month production cycle. Our shoyu products were launched the following year. All Danival’s products are prepared on site. We buy 90% of our raw material in France (soya, vegetables, fruits and cereals), giving priority to local producers in our region in the southwest.

“Daniel’s skills in preparing miso came to him from his father, who was in charge of miso production for Lima. At the time, Jan Kerremans was an employee whose task was to work on the miso recipe. Daniel himself has had the great privilege of receiving the teaching and guidance of the master-craftsman who is personally responsible for miso preparation within the imperial court of Japan, and who has imported his traditional skills and knowledge to Daniel while visiting Danival or during Daniel’s frequent trips to Japan. We are both familiar with your publications and find them of great value.”

Note 1. Near the top of the letterhead, below and to the left of the logo and company name, is written “Fabricant de père en fils.” In the center of the stationary, in a light half-tone, is a line drawing of a traditional shoyu seller (which also appears in *The Book of Miso*, 2nd ed., by Shurtleff & Aoyagi, p. 262). A printed seal in the lower left corner shows that the company won special mention for the *Prix Écoproduit* 1992, in the “Enterprise and Environment” competition organized by the French Ministry of the Environment.

Note 2. Enclosed with the letter are five brochures and booklets, some of which are cited separately. Address: Moulin d’Andiran, 47170 Mézin, France. Phone: +33 5 5397 0023. Fax 5 5397 0010.

3921. Seemo (H. Shapira). 1997. Re: History of Dakini Health Foods Pvt. Ltd., in Pune/Puna, India. Letter (fax) to William Shurtleff at Soyfoods Center, May 13—in reply to inquiry. 7 p. Handwritten.

• **Summary:** Seemo is Mr. H. Shapira from Israel and Kairava is Mrs. J. Spaelstra from the Netherlands. Seemo is in charge of tempeh, Kairava in charge of tofu & soymilk. They are making the earliest known commercial soybean tempeh in India. For their first letter see Dakini (1997).

Both Seemo and Kairava are devout disciples of Osho (formerly called “Sri Rajneesh”), he since 1984 and she since 1986. They arrived in Pune to stay in about 1988/89. Initially to support themselves, they had a gem and crystal shop, a wholesale new-age jewelry operation, and a motor bike repair shop. Now they have finally found what they want to do for work. “It’s love and Zen.” Osho died in Pune on 19 Jan. 1990; they returned to India the next day; the fire was still burning at the burning ghat. In the year before his death, his discourses were mostly about Zen. He died in Pune due to heavy metal poisoning and radiation damages done to him by U.S. marshalls in an Oklahoma jail cell, where he was kept unlawfully in 1985.

Their company started with the idea of making white tahini and possibly Turkish halva [halvah] (in which white tahini is a main ingredient). It was extremely difficult to get started. As foreigners doing business in India, they had to register a “Pvt. Ltd.” company. Then they could not find a space for the company, since Pune is a rapidly growing city. So Seemo pulled down the back garden in his rented house, constructed a shed with a floor area of 25 square meters, and moved his bedroom up to the second floor. This gave him an additional 24 square meters where the bedroom used to be. They also have a 25 square meter storeroom where they make the tempeh. He got electrical connections then waited for 8 months while a colloid mill (copy of a 1940 model), hot air oven, and filling machine were delivered. The mill proved to be a technical nightmare; he had to totally rebuild it. Finally their small factory started operation. Then they added peanut butter and brown tahini

to their product line—with no additives or preservatives. They had to set aside their plan to make halva.

Spicer College, run by Seventh-day Adventists, is located in Pune. They have a health food store and they make peanut butter—nearly edible, with too much sugar and salt, plus other ingredients. Their sesame butter (brown tahini) is gritty, rancid, and inedible. They also produce grape juices (very, very sweet), pastries (Mmmm good). And they make and bottle soy milk in plain and chocolate flavors, but it is loaded with white sugar and Class II permitted preservatives! They also make pretty good tofu; Seemo used to eat it now and then for the last 8 years. “Besides being actually able to taste the Bible in it, I had no reason to complain.” This tofu is now served at the Osho commune. “Pune old timers told me that once—20 years ago—the place was managed by an enthusiastic old American woman and the quality of their products was very good.

At Dakini, they now also make hummus in their kitchen, 15 kg/week in summer and 60 kg/week in winter. They pack it in 200 or 400 gm cups and sell it at various shops in town to foreigners and Indians. They like it.

Seemo started developing the tempeh about 8 months ago. Last year a friend of his found a book titled *Handbook of Indigenous Fermented Foods*, edited by Dr. Keith H. Steinkraus, in a pavement stall for 400 rupees (US\$13.00). Since he had been to Bali, Indonesia, many times, he tried making some of the foods but rarely got any edible products. So before leaving Pune, he gave the book to Seemo as a gift. As he read it, Seemo got really excited. He had grown up in a meat-eating family. Even while traveling and living in Europe, he continued to eat meat and junk foods. “Then I understood it was not good for me on all levels, and went vegetarian.” Living in Holland later on, he started to learn about tofu, and then tempe, tamari, etc. “So now I was a healthy, well-fed vegetarian.” Then he moved to India, but after some years of eating fried foods, lentils and lots of dairy products, he started to eat meat again, 2-3 times a month. “It did not feel too good, but I had no idea how to manage my diet, and living on mostly dairy products did not suit my body. So when Dr. Steinkraus’ book fell into my hands, I got excited and realized that it might be possible to make tempe here in India at a small, affordable investment.

“So I first got a small incubator built; its actually like a cool box ½ meter wide and 1½ meters high, made of galvanized sheet metal with insulation and 8 shelves (of which I now use only 3).” At the bottom are heaters, which give 250-540 watts of heat. Two old computer cooling fans distribute the heat, and a thermostat regulates it. “It’s not a perfect machine but I can do 5-12 kg/day when I want and, most important, I can produce in it excellent spore powder—since it is difficult to import anything here. Actually, I nearly gave up the project, because I was making sporulated

tempeh, then sun-drying it and running in through my spice grinder. The powder looked great. The tempe cakes used to get hot, then very hot, then smelly with funny colors (no white mold). I double-checked everything. In the end, only the grinding was left, so I bought a small hand-turned grain mill (500 rupees = US\$15.00). Since then, perfect tempeh has been happening.

“For starter, I first got a packet of spores from Holland. Later I got 1 gram of white tempe starter from an American friend in Goa (she used to make her own supply down there), and playing with it I found it a bit more suitable for my use. So most of my spore stock now is from this starter, and some is mixed. I still have to study how to make tempe and starter during the different seasons here. Now it is very hot and dry. Next month is monsoon (wet), followed by a month that is hot and humid, and then the 3-month ‘cold’ season.”

About half of all tempe produced is sold frozen; the other half is sold fresh. Seemo also plans to try making dry tempeh. He gives away lots of tempe as samples; most people love it. Starting this July, it will appear on the menu of one restaurant, possibly two—first as Tempeh Stroganoff and Tempeh Shashlik (steamed, then spiced, then barbecued). “When I get *The Book of Tempeh* I will introduce it to more places. Meanwhile, I have totally forgotten about eating meat. I feel strong and light. I find my vision benefits too; I haven’t noticed that with tofu. Now that I am a bit more confident working with the mold, I hope to raise some capital, move to a suitable place (possibly well out of town), and then start to make tamari shoyu, and definitely some miso too. So that’s a little of our story. Thank you.” Address: Dakini Health Foods Pvt. Ltd., Vidyut Nagar, Plot A2, Kawdewadi, Pune/Puna 411 001, India. Phone: 0091-212-63-1990 (phone and fax).

3922. Kaufman, P.B.; Duke, J.A.; Brielmann, H.; Boik, J.; Hoyt, J.E. 1997. A comparative survey of leguminous plants as sources of the isoflavones genistein and daidzein: implications for human nutrition and health. *J. of Alternative and Complementary Medicine* 3(1):7-12. Spring. *

• **Summary:** Genistein and daidzein are important anticancer metabolites. A survey of over 80 taxa of mostly agriculturally important plants found the highest concentrations of genistein (more than 2 gm per kg dry weight) in the leaves of *Psoralea corylifolia* (Indian bread root). All other legumes except fermented soybean miso had genistein levels of less than 400 mg per kg dry weight. Significant concentrations of daidzein (dry weight basis) were found in the stems of fava bean (*Vicia faba*; over 1 gm/kg) and the roots of the kudzu vine (*Pueraria lobata*; 0.95 gm/kg). Miso is a rich source of both isoflavones. Address: 1. Dep. of Biology, Univ. of Michigan, Ann Arbor, MI 48109-1048.

3923. Liu, KeShun. 1997. Fermented Oriental soyfoods. In: KeShun Liu. 1997. Soybeans: Chemistry, Technology, and Utilization. Florence, Kentucky: Chapman & Hall. xxvi + 532 p. See p. 218-96. Chap. 5. Index. [127 ref]

• **Summary:** Contents: Introduction. Fermented soy paste (*jiang* and miso): Varieties of miso and jiang, koji and microorganisms involved, koji starter and its preparation, Chinese jiang preparation (traditional household method, pure culture method, enzymatic method), Japanese miso preparation (rice koji preparation, treatment of soybeans, mixing and mashing, fermentation, pasteurization and packaging), principles of jiang and miso preparation, major factors in jiang and miso making (raw materials, cooking temperature and time, conditions during koji preparation, proportions of ingredients, fermentation conditions, novel processing for special products). Soy sauce (*jiangyou* or *shoyu*): Varieties of soy sauce, soy sauce processing (traditional Chinese household method, modern Chinese method, processing of Japanese shoyu, comparison of soy sauce and *jiang* or miso preparations), principles of making soy sauce (action of koji enzymes, fermentation by lactic bacteria and yeasts, color and flavor formation, glutaminase and glutamic acid), chemical soy sauce, progress in soy sauce preparation (use of defatted soy grits or flakes, improvements in treating soybeans, development of an automatic koji-making system, application of microorganisms with specific activities, techniques to shorten production time, improvements in soy sauce clarification), chemical composition, quality attributes and standardization, mycotoxins. Tempeh: Varieties of tempeh, preparation (traditional method, pilot plant method, petri dish method), microorganisms involved, factors affecting tempeh fermentation (starter, dehulling and aeration, moisture, temperatures, acidity, losses of solids), changes during fermentation (general changes, protein, lipid, carbohydrates and other constituents), production of vitamins, storage, nutritional value. Natto: Preparation, microorganisms involved, factors affecting natto quality (raw material, soybean cooking conditions, storage), changes during fermentation, trends in research on natto and *B. natto* (development of novel strains of *B. subtilis*, purification and characterization of key enzymes, studies into genes encoding key enzymes of *B. subtilis*, studies of possible physiological roles of natto). Soy nuggets (*douchi* or *hamanatto*). Sufu: Preparation, types of sufu, microorganisms involved, effect of mold growth, effect of brine aging, references. Address: PhD, Soyfood Lab., Hartz Seed, a Unit of Monsanto, P.O. Box 946, Stuttgart, Arkansas 72160-0946. Phone: 870-673-8565.

3924. Messina, Mark; Messina, Virginia. 1997. Soy: Good food for good health. *Veggie Life (Concord, California)*. April/May. p. 48-50, 55.

• **Summary:** Contents: Introduction. Heart disease. Osteoporosis. Menopause. The many faces of soyfoods: Soybeans, soy flour, soymilk, textured vegetable protein, tempeh, soynuts, miso, tofu.

3925. **Product Name:** Miso Thai Vegetables.

Manufacturer's Name: Gloria's Kitchen.

Manufacturer's Address: P.O. Box 2071, Burlingame, CA 94011-2071. Phone: 650-579-0638.

Date of Introduction: 1997. June.

How Stored: Frozen.

New Product–Documentation: Letter (fax) with date sent by Gloria's Kitchen. 1999. June 21. This product was introduced in June 1997.

3926. Andoh, Elizabeth. 1997. Tea and temple fare in Kamakura. *New York Times*. July 20. p. XX6, XX18 (Sunday).

• **Summary:** Contains reviews of restaurants in Kamakura. Saami serves dishes that include wheat gluten, and "soy foods," and a sweet tofu-based pâté known as gizei-dofu [gisei-dofu], plus "goma-dofu, creamy sesame pudding drizzled with soy sauce and topped with a dab of fiery wasabi horseradish."

Kintame uses traditional pickling mediums including "miso paste." Their "house soup is ozoni, a creamy, pale, a miso-thickened broth.

Fushiki An offers shojin ryori, temple-style vegetarian cuisine including goma-dofu and a "clear broth with cubes of silken bean curd..." The chirashi-zushi contained "soy-simmered koya-dofu bean curd..." Address: Tokyo, Japan.

3927. Mueller, Ed. 1997. Brief history of Takoma Soy Inc. (Interview). *SoyaScan Notes*. July 21 and 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Takoma Soy was incorporated on 5 March 1992 and started operation on 1 April 1992—sharing the same space as Olive Tree Works in Takoma Park, Maryland. Takoma Soy purchased tofu from Spring Creek Natural Foods (Spencer, West Virginia) and sold it at cost to Olive Tree. Takoma Soy is now a full-line natural foods distributor, carrying products which include Spring Creek Tofu (from Spencer, West Virginia), Miso Master miso (from North Carolina), and tempeh from Cricklewood (Mertztown, Pennsylvania). They recently purchased (using a bank loan) a property that used to be a Bible camp. On the property are a 12,000 square foot building, a lodge house (with 5-8 bedrooms), and 3 cabins. At its peak the camp had 300 to 500 day campers and up to 150 overnight guests. Ed would like to convert the main building into a tofu factory. He is working on a joint venture that would probably set up a new company, with Twin Oaks and Olive Tree involved as partners. Twin Oaks plans to stop making tofu, buy their

tofu from Takoma Soy in Maryland, and focus on making second generation tofu products.

Ed was a Peace Corps volunteer in Sierra Leone. His vision for the property is to develop a center where people can come to learn agricultural skills, including how to make tofu, bake bread, etc. Address: 11 South Pennsylvania Ave., Hancock, Maryland 21750. Phone: 301-678-5283.

3928. Buzzell, R.I.; Poysa, V. 1997. Two food quality soybean cultivars released by GPCRC. *Canadian Soybean Technical Bulletin (OSGMB, Chatham, Ontario, Canada)* 3(2):1. July.

• **Summary:** GPCRC is the Greenhouse and Processing Crops Research Centre (formerly Harrow Research Station). "These two cultivars, AC Onrei and OX756, have been introduced to complement Harovinton expand the export of Ontario soybeans into the premium Asian soyfood market. Harovinton, a tofu-type soybean cultivar developed at Harrow, has established Canadian soyfood soybeans as a premium quality product in Asia, where it is called 'Orient Pearl.'

"AC Onrei is a selection from the cross Vinton X Enrei. Enrei is a premium quality Japanese tofu cultivar which lacks the a4 protein sub-unit of the 11S glycinin (gy4/gy4). Enrei's superior tofu quality, especially the ability to make premium tofu using the 'nigari' (magnesium chloride) coagulant, is due to the lack of this a4 protein sub-unit. Vinton is Gy4/Gy4 and has the a4 protein sub-unit."

"OX756 was developed from the backcross of L2 X Harovinton. L2 is a backcross derived lx2/lx2 line of Century which lacks the L2 lipoxigenase isoenzyme... Harovinton is Lx2/Lx2 and has the L2 lipoxigenase isoenzyme."

"OX756 is a low lipoxigenase (lx2/lx2), yellow hilum cultivar similar in yield but earlier maturing than Harovinton, the recurrent parent. The lack of the lx2 lipoxigenase enzyme should reduce the 'beany' flavours in tofu, soymilk, and other soyfood products made with OX756, thus promoting wider acceptance of soybeans as food ingredients. It was released to W.G. Thompson and Sons, Ltd."

A table shows agronomic performance and seed quality for these two new food varieties compared with Harovinton during 8-9 years. For each variety are given: Yield, plant height, lodging score, days to maturity, weight of 100 seeds, protein %, and oil %. Address: AAFC, GPCRC, Harrow, Ontario, Canada.

3929. Jessop, D.B. 1997. The food processing lab at GPCRC at Harrow. *Canadian Soybean Technical Bulletin (OSGMB, Chatham, Ontario, Canada)* 3(2):1. July.

• **Summary:** "The food processing lab at the GPCRC [Greenhouse and Processing Crops Research Centre] has, for the past several years, evaluated soybean varieties for

their soymilk, tofu and miso making properties. The Grainspec whole grain infrared analyser is capable of evaluating raw soybeans for moisture, oil, protein, total sugar, colour and more recently sucrose and stachyose [an oligosaccharide that causes flatulence]. The raw beans are also analysed for water uptake in both the tofu and miso process." Address: AAFC, GPCRC, Harrow, Ontario, Canada.

3930. Woodrow, L.; Buzzell, R.I. 1997. Sugars in food processing soybeans. *Canadian Soybean Technical Bulletin (OSGMB, Chatham, Ontario, Canada)* 3(2):2. July.

• **Summary:** "The soybean program at the Greenhouse and Processing Crops Research Centre [formerly Harrow Research Station] focuses on the development of lines with characteristics suited to the domestic and export food processing markets. Seed characteristics such as hilum and seed coat colour; storage protein content and profile; enzyme profile; oil content and fatty acid composition; total carbohydrate content; and free sugar composition are important determinants of the food processing performance of soybeans into products such as soymilk, tofu, and miso."

"As soybeans mature, free sugars are synthesized and form part of the storage reserves of the seed. When the seed germinates, these sugars represent the first energy available to the young seedling... Glucose and sucrose are present in most fruits and vegetables, raffinose and stachyose are found in some plant families including legumes. These sugars are synthesized in a pathway that leads from the monosaccharide glucose to sucrose (disaccharide), raffinose (trisaccharide) and finally the tetrasaccharide, stachyose. In the mature soybean sucrose and stachyose are present at levels ranging from 3.0-8.0% by weight dry matter depending on the variety or line. Raffinose and glucose are intermediates in the synthesis and are present at much lower levels in the mature seed."

A graph shows the glucose, sucrose, raffinose, and stachyose contents of 40 soybean varieties and lines, plotted to show their relationships with the total free sugar content. The data illustrates that among lines increasing total free sugar content is correlated with an increase in sucrose. Sucrose is the most abundant sugar in mature soybeans, followed by stachyose, then raffinose. Glucose and fructose are present in only trace amounts. Address: AAFC, GPCRC, Harrow, Ontario, Canada.

3931. Little Tokyo Service Center. 1997. L.A. Tofu Festival, August 9-10. Los Angeles, California. 22 p. Illust. 26 cm. Saddle stitched (stapled).

• **Summary:** Contents: 1997 LA [Los Angeles] Tofu Festival committees and volunteers. Schedule of events, Aug. 9-10. Map of events. Letter from Little Tokyo Service Center, with thanks to House Foods / Hinoichi Tofu as the Title Sponsor. List of sponsors by rank. Honorary chairpersons:

Sandy Gooch and Rob Fukuzaki. Health education and health benefits of tofu. Tofu: A 2,000 year old health food miracle, compiled by William Shurtleff of Soyfoods Center. 1997 LA Tofu Festival restaurant profiles (20 restaurants, p. 7-9): Aloha Food Factory (Alhambra, CA, started Oct. 1990–Tofu specialty dish: Tofu with cha-shu on stir fried vegetables). Berth 55 (Long Beach, 1988–Tofu poke dish). Buk Chang Dong Soon Du Bu (LA, April 1996–Spicy tofu casserole with oyster, shrimp & clams). Chez Sateau (Arcadia, 1981–Tofu cheesecake, Tofu Caesar Salad. Chef Sato was “Chef of the Year of Los Angeles” and 1980 Chef of the Year of southern California.” He was also a member of the 1980 U.S. Team for the Cooking Competition in the Culinary Olympics). Curry House (Beverly Hills, Aug. 1996–Tofu steak {marinated in soy sauce}, Tofu cheesecake). Furaibo (LA, Aug. 1994–Tofu salad with original ginger). Indo Cafe (Los Angeles, 1993–Stuffed tofu cake {tofu filled with ground chicken and shrimp}, Fried tofu {marinated in turmeric and candlenut}). Jozu Restaurant (LA, Dec. 1, 1996–Fried tofu with marinated porkchops). Little Tokyo Lion’s Club (LA, 1974–Tofu miso soup, Futomaki sushi). Mr. Ramen (LA, Oct. 1993–Vegetarian {with tofu} ramen). Ocean Seafood Restaurant (LA, 1990–Mabo tofu, Tofu with mixed vegetables, Tofu in clay pot). Papa Jon’s Cafe (Long Beach, 1990–Greek tofu salad, Tofu lentil salad, Potato-tofu salad, Sesame tofu salad, Tofu spinach, Lasagna, Tofu broccoli stir-fry, Spaghetti and tofu balls, Tofu/lettuce/tomato {TLT} sandwich, Tofu scramble {breakfast}, Tofu dessert pies, Tofu frosting {on cake}, Tomato basil w/tofu, Teriyaki tofu, and Spinach mushroom pasta w/tofu). Pat Greenberg, “Fitness Gourmet” (Beverly Hills, Renowned instructor of the “Joy of Soy” cooking classes). Southern California Cuisine (LA, 1994–Tofu ravioli served with Curry sauce or traditional marinara sauce). Suehiro Cafe (LA, 1972–Stir-fried eggplant, Bell peppers with tofu braised in miso sauce, Deep-fried tofu with sauce). Three Brothers Restaurant & Catering (Harbor City, 1983–Chinese tofu salad, Tofu seafood salad). Tofutti Brands Inc. (Cranford, New Jersey, 1982–Non-dairy frozen desserts, Tofutti tortellini, Mini ravioli, Tofutti cookies). Unique Catering (Chino Hills, 1995–Tofu patty with shiitake sauce, String beans with tofu dressing, Inari-sushi). Vegetarian Delight (San Gabriel, 1991–Veggie fish in hot braised sauce). Wild Oats Community Market (Santa Monica, 1984–Tofu tempeh deli salad).

Advertisements (p. 10-21), including ads for Tofutti, Patricia Greenberg “The Joy of Soy” cooking classes, JFC International Inc., House Foods America Corporation (full page, inside rear cover). Address: Little Tokyo Service Center (Resource Development Center), 231 East 3rd St., Los Angeles, California 90013. Phone: 213-473-1600.

3932. Hesser, Amanda. 1997. Miso goes beyond Japanese cooking. *New York Times*. Sept. 3. p. C1, C8 (NY City ed.); p. B1, B8 (Natl). Living Arts section. [1 ref]

• **Summary:** An excellent, long article. The version in the New York City edition (described below) is considerably longer than that in the national edition. Nina Simonds believes that miso is no longer an exotic food as it once was; it has now become much more mainstream. Many varieties of miso are now sold in America. William Shurtleff, co-author of *The Book of Miso*, notes that “It brings a savory flavor to vegetarian meals that is very hard to find. Miso provides a bridge between a steak and a vegetarian diet.”

Katagiri & Company, on the Upper East Side of New York City, sells more than 20 varieties. In Japan, miso soup maintains a reputation as a cure-all, much like chicken soup is to westerners. Contains three miso recipes. One sidebar, titled “The package says a lot,” gives the name, address and phone number of six different sources for misos: The Health Nuts, Integral Yoga Natural Foods, Katagiri & Company, Whole Foods Market (all 4 in New York City), South River Miso Co. (Conway, Massachusetts), and Natural Lifestyle Supplies (Asheville, North Carolina–Sells Miso Master, Onozaki, Mitoku, and South River misos). Photos show: Nine different brands of packaged miso. A bowl of miso soup, with chopsticks.

3933. Fischer, Paul. 1997. History of House of Herbs, and of the Far East line of condiments which includes soy sauce, teriyaki sauce, and hoisin sauce (Interview). *SoyaScan Notes*. Sept. 11 and 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** House of Herbs was started in 1939 by Patricia Winters. She was quite a woman, who invented the first under-arm deodorant called Oder-Ono, and she sold that company in 1929. Her husband, Ezra Winters, who was a muralist. He was doing a mural in a post office depicting the use of herbs and spices in medicine, cosmetics, and food. She was retired after selling her business, lived in Connecticut, so she started growing herbs in her back yard. Then she started selling them at the New York Flower Show around 1940-41, and out of that she developed a business, House of Herbs.

Paul has been working for other people in the specialty food business since 1955. He worked for Virginia Deere Extract Co., for a specialty food distributor, and for a packer of Spanish olives. In 1972 he had been for Virginia Deere for about 5 years. He and his wife lived in New Jersey and their plant was in Brooklyn; it was a long commute and he was getting very tired of it. His wife agreed with his desire to go into business. They found a business named House of Herbs (in Greenville, New Hampshire), which was on the verge of bankruptcy, and was now owned by Republic Foods (a mini-conglomerate)–having changed hands 3 or 4 times since Patricia Winters first sold it. In late May 1972

Paul and his wife bought House of Herbs and began running it in New Hampshire. In 1974 they moved the company to 28 Ann Street, Passaic, New Jersey—where it is still located.

House of Herbs presently makes a line of condiments under the Far East brand. The first product in the line was HVP soy sauce. In 1974 House of Herbs was a small specialty food company, that packaged and sold herbs and spices, cooking wine and wine vinegar, which he sold to specialty food distributors. One of these distributors in Atlanta, Georgia, was distributing Kikkoman Soy Sauce; Kikkoman then went direct, so this distributor got very angry and asked Paul if he could make a soy sauce for him. Paul said “Sure I can.” So Paul bought some Hercules HVP, got the federal standards or specifications (E-610), and developed an HVP soy sauce which he called “Maestro Brewed Soy Sauce”—even though it was not fermented. That was the first product in the line. The ingredients (shown above) are the same now as they were in the beginning. Also in 1974 Paul developed a Teriyaki Sauce, also under the Maestro Brand. Then he added more (such as Sweet & Sour Sparerib Sauce, Oyster Sauce, Brown Sauce, etc.), since he found he needed a line to sell the products. In about 1975 or 1976 he visited San Francisco, California, for a convention. He saw a Far East travel agency, so he took the man’s business card and used it to design a new label with the Chinese characters for “Far East” on it. Then he registered it in the U.S. Patent Office as a trademark. In about 1987 he introduced a Hoisin Sauce (which see). He basically cooks, mixes, and bottles the ingredients to make this line; no fermentation is involved. Paul wants to start making Hatcho miso, since fermented soy beans, the main ingredient in his Hoisin sauce, are no longer available from Wah Jah Shan.

Paul will be age 67 in November 1997. “I am not going to retire. I love my little business. It’s very exciting. I go to Florida, where I have a little house, in the winter. I’m too young to retire. Business has been very, very good the last 3-4 years and all of a sudden, it has dropped way off. So now I’m looking for a way to make Hoisin Sauce—because nobody makes a good product.” Address: Owner, House of Herbs, Inc., 38 Ann St., P.O. Box 178, Passaic, New Jersey. Phone: 201-779-2422.

3934. Bates, Caroline. 1997. California—Los Angeles area: *Spécialités de la maison. Gourmet* 57(9):32, 34. Sept.

• **Summary:** One of the three restaurants featured in this article is Jozu, a Japanese restaurant at 8360 Melrose Ave. in Los Angeles (phone: 213-655-5600), owned and run by Andy Nakano. One of the writer’s favorite recipes is the fragrant Japanese eggplant in miso sauce. A photo shows the prepared dish.

3935. Lightlife Foods, Inc. 1997. Eating healthy can be soy easy (Brochure). Greenfield, Massachusetts. 12 p. 22 cm.

• **Summary:** On the cover of this full-color, glossy brochure is a color photo of a meatless burger (between buns, with onion, tomato, and lettuce), a hot dog (in a bun, with a bead of mustard on top), and a plate of stir-fried tempeh with veggies. In the background are rolling soybean fields. In the foreground are three pods of green vegetable soybeans, and 15 whole dry soybeans.

Contents: Ten reasons to include soyfoods and soy protein in your diet (p. 2-3): 1. You will be in good company. 2. Lower your cholesterol. 3. Lower your risk of cancer. 4. Menopausal symptoms. 5. Soyfoods are nutritious. 6. A quality protein source. 7. Save our precious resources. 8. A variety of alternatives and greater availability. 9. Better quality. 10. Soyfoods are “in.”

Glossary of common vegetable protein foods (p. 4-5): Tofu, tempeh, meat analogs, soymilk, soy cheese, soy flour, soy protein, textured vegetable protein (TVP), seitan, miso. A table shows each Lightlife product, serving size, and grams of soy protein (soy tempeh has the most at 24 gm per 4 oz serving, followed by Gimme Lean at 18 gm per 4 oz).

Products (with a brief definition of each) and mission statement (p. 6-7): Smart dogs. Tofu pups. Wunderdogs (The first low-fat vegetarian hot dog just for kids). Smart deli slices (fat free). Foney baloney (Kids love it). Lean links sausages. Gimme lean (fat free). Marinated smoky tempeh strips (“Fakin’ Bacon”). Fakin’ bacon bits. Marinated tempeh “grilles” (soy tempeh patties in Tamari, Lemon, and Barbecue flavors). Lightburgers (fat free). Lightsausages (fat free). Tempeh (in 5 varieties—Soy, Three Grain {millet, brown rice, barley}, Garden Vegetable, Quinoa-Sesame, and Wild Rice), Savory seitan, Vegetarian request (100% vegetarian, all-natural entrees). A color photo shows many products in their packages.

Getting started (p. 8-10; how to use key products). About Lightlife (since 1979). Address: P.O. Box 870, Greenfield, Massachusetts 01302. Phone: 1-800-274-6001 Ext. 129.

3936. Richmond, Akasha. 1997. The art of tofu: Celebrated vegetarian recipes from around the world. Torrance, California: Morinaga Publications. iv + 84 p. Illust. No index. 22 cm.

• **Summary:** Contents: Preface. Food with charisma. Guide to ingredients. Freezing, blending, storing, and baking with Mori-Nu Tofu. Cooking terms and techniques. Recipes: Small bites. Soups. Entrée salads and sandwiches. Main meals. Baked goods and desserts. Ingredient equivalents. Metric equivalents. Oven temperature equivalents.

This book was sponsored and published by Morinaga, and every recipe calls for the use of Mori-Nu Tofu. The 50 recipes are low in calories and fat—and delicious!

Known as the “chef to the stars,” Akasha has been the personal chef for celebrities such as Michael Jackson, Barbara Streisand, and Carrie Fisher—to name a few. Her

catering company has catered events and parties for the likes of Madonna, Al Pacino, Richard Simmons, MTV, and others. The Preface begins: "Back in 1975, when I first decided to go 'vegetarian,' you could only find tofu in Chinese restaurants and obscure health food eateries." She grew up in Hollywood and Florida; "Coconut Grove hippies and surfers were the start of a career that would take me all over the world." Address: Beverly Hills, California.

3937. Cooper, Myron. 1997. New developments at Westbrae. Sale to Hain Food Group is imminent (Interview). *SoyaScan Notes*. Oct. 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** About 6 months ago the Vestro board of directors changed the company name to Westbrae Natural, Inc. Westbrae is scheduled to be sold to the Hain Food Group on Oct. 14. Myron is quite certain the deal will go through. He and Andy Jacobsen will stay on the run the Westbrae part of the business. The price of Hain's stock has been skyrocketing recently, even though their earnings are less than those of Westbrae. Hain had made several weak offers for Westbrae, then (by coincidence) Chiquita Banana came along and made a strong offer—that almost led to the sale. After that, Hain came back with a serious offer.

Vestro purchased Westbrae in 1988. At that time, Westbrae had only one soymilk SKU (not including Malted), in a yellow box, made by Vitasoy—so there was not much room for growth. Since then, Westbrae's non-dairy beverage category (soymilk and rice milks) has grown extremely rapidly—roughly eight-fold in sales, so that today Westbrae's sales in this category are about \$16 million/year; of that roughly 80% is soy and 20% rice. Myron believes that Westbrae is now the leader in this category (soy + rice beverages) among all natural foods companies, ahead of both Eden Foods and Vitasoy. Westbrae's distributors tell Myron that the latter two companies now appear to be having problems; they may be having difficulties keeping up with demand. Imagine Foods (maker of Rice Dream) is a very strong competitor, and Rice Dream (rice beverage) has been a bonanza. But Westbrae has just introduced a competitor—Oat Plus, which tastes good and contains soluble fiber (beta-galactones), about which FDA allows a health claim.

Westbrae's single best-selling SKU in terms of units sold may be Malted. Myron has had a hard time finding a manufacturer for this product. They are made by John Yamauchi in Los Angeles. He is having trouble keeping up with demand.

Westbrae has no plans to introduce soymilk in a gable-top carton, primarily because the company now has only one refrigerated product—tub miso.

Myron is very concerned about the possibility of *E. coli* turning up in some company's soymilk and damaging the whole industry. Les Wilson at Iowa State Univ., who is on

the Soyfoods Association board, will be looking into this problem in the larger context of soymilk bacteriology.

Since 1988, Westbrae has continued to be a leader in soymilk innovation. They introduced the first "Lite" soymilk, were the first to structure the soymilk category to make it similar to dairy milk (full-fat, low fat, etc.), introduced the first fortified soymilk, the first small kid's size "Lunchbox" soymilk, the first coffee soy [Café Westbrae—Coffee-Flavored Soy Beverage], and (in Sept. 1997 at Baltimore, Maryland) VigorAid,—nutritional soymilk in the same category as Ensure.

After the Hain sale is finalized, Westbrae will take over management of two very interesting Hain soy products: Pizsoy (a natural pizza with soy cheese), and Ice Bean (a soy ice cream originally made by Farm Foods). Myron feels that these products have considerable unrealized potential.

Update: Talk with Hain Food Group—Westbrae. 1998. Feb. 18. Westbrae was, in fact, sold to Hain on 14 Oct. 1997. The new company name is that shown just above. Myron Cooper and other top executives will continue to work at their former location in Carson, California. Address: President, Westbrae Natural Foods, Inc., 1065 East Walnut St., Carson, California 90746. Phone: 310-886-8200.

3938. Madison, Deborah. 1997. Vegetarian cooking for everyone. New York, NY: Broadway Books. x + 742 p. Oct. Illust. Plus 24 full-page color plates. Index. 26 x 21 cm.

• **Summary:** One of the most comprehensive vegetarian cookbooks ever published; Contains 1,400 recipes. One chapter, titled "The Soy Pantry" (p. 593-609) has the following contents (with many recipes): Introduction (The soybean is the cow of the Orient). Soy milk. Tofu. Tempeh. A sidebar (p. 594) lists more recipes that include soyfoods, by chapter.

Soy-related recipes (not including those on p. 593-609) include: Soy oil (p. 43). Bechamel sauce (p. 53; dairy-free variation uses soy milk). Tofu "mayonnaise" (p. 60). Tofu garlic "mayonnaise" (p. 60). Sesame sauce with tofu (p. 67). Peanut-tofu sauce (p. 69). Spring rolls with napa cabbage and tofu (p. 107). Tofu salad spread (p. 129). Marinated tofu sandwich (p. 130). Tempeh on rye sandwich (p. 130). TLT—Tempeh, lettuce, and tomato sandwich (p. 130). Buckwheat noodle salad with grilled tofu and roasted peppers (p. 178). Green goddess dressing (p. 190; dairy-free variation with silken tofu). Miso soups (about, plus 5 recipes; p. 231-33). Mushrooms with paprika and sour cream—variation with tofu (p. 255). Thai tofu and winter squash stew (p. 257). Winter vegetable pot pie (p. 259; dairy-free variation can use soymilk). Mushrooms and tofu in Hoisin sauce (p. 269). Stir-fried broccoli, mushrooms, and peppers with caramelized tofu (p. 270). Dried mushroom, leek, and tofu stir-fry with Chinese barbecue sauce (p. 270). Goat cheese enchiladas with corn and red mole (p. 292; silken tofu can replace a portion of the goat cheese to give a less rich

version). Soybeans (about; p. 314). Somen in broth with silken tofu and spinach (p. 482-83). Soba in broth with spinach, purple dulse, and silken tofu (p. 483). Udon with stir-fry and five-spice tofu (p. 484). Smoothies (p. 594). Protein drink for breakfast (p. 617, with soy milk). Breakfast burritos with tofu (p. 625). Scrambled tofu (p. 627). Scrambled tofu with herbs and cheese (p. 627). Scrambled tofu with tomatoes and salsa (p. 627). Multigrain waffles (with soy flour, p. 633).

Also used in the recipes are: Quinoa. Sea vegetables. A color photo on the cover shows Deborah Madison.

The dust jacket (and *Jessica's Biscuit Cookbook Catalog*, spring 1998) says: "What Julia Child is to French cooking and Marcella Hazan is to Italian cooking, Deborah Madison is to contemporary vegetarian cooking. At the Greens restaurant in San Francisco [California], where she was the founding chef, and in her two acclaimed vegetarian cookbooks, Madison elevated vegetarian cooking to new heights of sophistication... Madison received the M.F.K. Fisher Mid-Career Award in 1994... She has been a board member of the Santa Fe Area Farmers' Market for the past six years in Santa Fe, where she lives with her husband, Patrick McFarlin."

Marion Cunningham, author of Beard Award winners *The Fannie Farmer Cookbook* and *The Fannie Farmer Baking Book*—"If I could have only one book on the subject of vegetables, *Vegetarian Cooking for Everyone* would be it."

Letter (fax) from Dana Jacobi. 1998. April 26. This cookbook just won the IACP/Julia Child award as the "cookbook of the year" for 1998—the highest honor given, out of 432 books nominated—and a tremendous honor for vegetarianism as well as for Deborah Madison. Note: IACP is the International Association of Culinary Professionals. This book also won the IACP/Julia Child award as the best general cookbook of the year (out of 54 cookbooks nominated, and beating out the new 1997 edition of *The Joy of Cooking*). Two major sets of cookbook awards are given each year: The IACP/Julia Child awards (given in April at a different location each year) and the James Beard awards (given in May in New York City). Each set offers awards in something like 10 different categories. There is surprisingly little overlap among the nominations for both in each category. Address: Santa Fe, New Mexico.

3939. *Soya Bluebook Plus*. 1997. Oilseed glossary: Definitions and terms commonly associated with oilseed products or processing. 1998. p. 354-60.

• **Summary:** Acidulated soapstock, activated, amino acids, antioxidant, biodiesel, biotechnology, bleaching, bleaching earth, bolls, Bowman-Birk trypsin inhibitor, bran, break material, cake, canola, canola meal, catalyst, coconut, coconut–desiccated, coconut milk, coconut meal, cold pressed soy oil, cold test, confection sunflower, cooking oil,

copra, copra meal, corn bran, corn feed meal, corn flour, corn germ meal (wet milled), corn gluten feed, corn gluten meal, corn grits, cotton linters, cotton plant by-product, cottonseed–glandless, cottonseed cake (or cottonseed flakes)–mechanical extracted, cottonseed meal–solvent extracted, cottonseed screenings, cotyledon, cracked corn, cracking, crude cottonseed oil, crude soy oil, defatted soy flour, degermed, dehulled–dehulling, degummed soy oil, degumming, deodorized, desolventizer-toaster, diglyceride, drying oil, edamame, edible crude soy oil, edible refined soy oil, emulsifier, endosperm, esterification, expanded–expanding, expeller, extracted–mechanical, extracted–solvent, extruded, extruder, extrusion, fat, fatty acid, feed (feedingstuff), feed grade, fermented–fermenting, flaking, flour, free fatty acid (F.F.A.), full-fat soy flour (enzyme active or heated/toasted), fully refined soy oil, genetic engineering, germ, ghee, gossypol, grain, green vegetable soybeans, grits, groundnut, gumming, high-fat flour, hilum, hulls, hydrogenated vegetable oil, hydrogenization [sic, hydrogenation], hydrolyzed corn protein, hydrolyzed soy protein, isolated soy protein, kibbled soybean meal, Kunitz trypsin inhibitor, lecithin, lecithinated soy flour, linseed meal, linters, lipoxxygenase, low gossypol cottonseed meal, low-fat soy flour, malto dextrins [maltodextrins], margarine, maturity groups, meat analogs [meat alternatives], meat extenders, melting point, methyl esters, miso, monoglyceride, natto, nutraceuticals, oil, okara, once refined soy oil, oxidation, palm kernel oil, palm olein, palm stearin, peanut hulls, peanut meal, peanut skins, pellets, polymerization, processing or extraction of oilseeds (also called "crushers" or oil mill operations–solvent extraction, continuous pressing, batch pressing), protein, pulses, raffinose, rancidity, rapeseed meal–mechanical extracted, refining, refractive index (R.I.), rolled or rolling, salad oil, shortening, soapstock, solvent extracted, solvent extracted soybean flakes, soy flour, soy grits, soy protein concentrate, soy protein isolate, soy sauce (incl. that hydrolyzed with hydrochloric acid), soy sprouts, soya, soya lecithin, soybean(s), soybean ground, soybean cake, soybean curd, soybean fatty acids, soybean feed–solvent extracted, soybean flakes and 44% protein soybean meal, soybean flakes and high protein or solvent extracted soybean meal, soybean hay sun-cured ground, soybean hulls (or seed coats), soybean meal, soybean meal–dehulled–solvent extracted, soybean meal–dehulled–mechanical extracted, soybean mill feed, soybean mill run, soybean processor, soybean protein product–chemically modified, soybean seeds–extruded ground, soybean seeds–heat processed, soybean solubles–condensed, soybean solubles–dried, soyfoods, soymilk, soynuts, spinning (to texturize soy protein isolate for food or industrial use), stachyose, steepwater, sterols, sunflower hulls, sunflower meal–dehulled–mechanical extraction, sunflower meal–dehulled–solvent extracted, sunflower meal–mechanical extracted,

sunflower meal–solvent extracted, sunflower seed–oil varieties, technical grade refined soy oil, tempeh, textured soy concentrate, textured soy flour, textured soy protein, toasting, tofu, transgenic, triglyceride, trypsin inhibitors, unsaponifiable matter, unsaturation, vanaspati–vegetable ghee, wet-milled, whole-pressed cottonseed–mechanical extracted, winterized oil, yuba. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

3940. Gonzalez-Watanabe, Yvonne; Watanabe, Joji. 1997. Introducing tofu to Hispanics. Visit to the House Foods America Corp. tofu factory in Garden Grove near Los Angeles (Interview). *SoyaScan Notes*. Nov. 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Yvonne and her husband Joji (who first contacted Soyfoods Center on 12 Sept. 1997) are interested in translating *The Book of Tofu* into Spanish and introducing tofu to the Hispanic community, starting in Los Angeles. Yvonne, age 24 was born in the USA, where her parents (who are both from Costa Rica) lived for 30-35 years; her father was a pharmacist. She learned to speak some Spanish at home. Her parents have returned to Costa Rica. Yvonne (who was raised a Catholic) now works in a real estate office and teaches vegan cooking classes at the Kanzeonji Non-Sectarian Buddhist Temple and Shiva Ashram Yoga Center at Mt. Washington in Los Angeles; there both she and Joji practice Zen meditation and yoga. Rev. Ryugen Watanabe, Joji's uncle, is a Soto Zen master, yoga teacher, and the head of this temple. Both Yvonne and Joji are vegetarians, and she is a vegan. Her sister is an editor for *El International*, a big Spanish language magazine located in Miami, Florida.

Yvonne got interested in vegetarianism and soyfoods through Rev. Watanabe. She had had severe migraine chronic headaches for many years. After trying every possible remedy to no avail, she told her uncle, Rev. Watanabe, about her problem. He said simply but forcefully, "It's your diet." She thought: "He's crazy. I have a great diet." In 1994, although she had been eating meat for 30 years, she tried the vegetarian diet he recommended and got quick relief. Following his advice, she began by giving up red meat and pork, then phased out chicken and fish until after 8-9 months she was consuming a vegan diet. As Yvonne began educating herself about vegetarian nutrition, she was looking for alternatives to meats as a source of protein. Rev. Watanabe told her about tofu, and even taught her how to make it at home from whole soybeans. Now Yvonne teaches other people how to make tofu at home.

Yvonne has great admiration for Rev. Watanabe. "He's really great. He's been teaching Zen and Yoga for more than 20 years and he still charges the same, low prices—\$2.00 for a Yoga class. If you can pay, you pay. If you can't, how about rolling some incense. It's wonderful. I've never seen someone so committed to people."

Yvonne has been a vegan ever since and has not had a headache in almost five years. A friend of Yvonne's had migraine headaches that were so bad, she had to give herself shots. Yvonne suggested that she try switching to a vegetarian diet. She hasn't had a headache in a year. Over the years many of Yvonne's female relatives (her mother, sister, cousin, etc.) have become vegan—largely because they want to lose weight.

Joji, age 36, was born in Tokyo but has lived in the USA since age 6. He speaks Japanese and English and is a financial consultant. Joji graduated from USC, and now works in a corporate environment in real estate financing. His grandmother, Masa Miyai, lives with them. Four years ago they shut down their business selling medical supplies to Latin America. Now they are developing a project to introduce tofu to Hispanics.

On Oct. 18-19 Yvonne and Joji visited Soyfoods Center, where they talked with Bill Shurtleff about their project and book publishing. They photocopied many Spanish-language documents and recipes related to tofu. Upon returning to Los Angeles, they developed a one-page Spanish language brochure on tofu, visited with Margaret Endo in order to arrange for a booth in next summer's Tofu Festival, and began to do research.

Their first research project was a visit to the House Foods America Corp. tofu plant in Garden Grove, Southern California. After a brief meeting with employee Miyuki Nagano, she took them on a walking tour of the plant, so they were able to observe the entire tofu-making process. It is completely automated, except when a worker smooths the curds in the pressing trays before they are pressed. The company employs about 120 people at this facility. Of the 78 workers in the factory (including shipping and receiving), 98% are Hispanic men, but the office workers are all Japanese. The company has its own delivery trucks; its marketing is focused on California, in part because of increased competition from companies outside the state—as in Massachusetts [Nasoya Foods]. The company invites the Hispanic workers to take home tofu, but they don't—probably because they don't know what to do with it. The company has a full test kitchen and laboratory, and Miyuki is interested in developing tofu recipes that Hispanics will like. The company also makes natto at this plant.

Update: Talk with Yvonne. 1997. Nov. 23. Her cousin, Alejandra Jimenez, from Costa Rica has just arrived in Los Angeles to work with her on the tofu project. Alejandra's native language is Spanish but she also speaks perfect English and has a master's degree in English. Another cousin from Costa Rica is part of an all-male rock band, whose members are ages 30-37; all were born and raised in Costa Rica. She served them 3 tofu recipes—which they liked very much: (1) Tofu cubed in miso soup; (2) Chilled tofu, cubed with sesame oil, rice vinegar, and soy sauce; and (3) Crisp freshly deep-fried tofu cubes, with soy sauce.

They are interested in using tofu as part of a weight-loss program.

They all went to a Chinese vegetarian restaurant in nearby San Gabriel named Vegetarian Delights. Run by a Chinese-American lady, it served a delicious dish named Roasted Black Bean Fish, that tasted remarkably like fish—but used tofu instead of fish. Yvonne made friends with the owner. Address: 6029 LaPrada St., Los Angeles, California 90042. Phone: 213-254-1712.

3941. Mutual Trading Co., Inc. 1997. *Kyôdô Bôeki K.K. 70 nenshi: Nihon no aji o sekai no hitobito ni* [Mutual Trading Company, Inc.: A 70 years' historical]. Los Angeles, California. 108 p. Nov. 20. 28 cm. [Eng; Jap]

• **Summary:** This excellent history of Mutual Trading Co. (MTC) is divided into two parts, each written in both Japanese and English. Part I is the general company history (p. 1-32). Part II, titled "Chronological history of Mutual Trading Co., Inc.: 1926-1996" and containing numerous photos (p. 33-107), gives a chronology of the company in the context of major world events. Located in Los Angeles, Mutual was a pioneer in bringing Japanese foods to America.

1926 April 19—Mutual Trading Co., Inc. is established when ten Japanese retailers in Los Angeles pool their resources. Sadagoro Hoshizaki is the first president. 1934—MTC's annual sales top \$500,000 for the first time.

1942—Under executive order 9066, Japanese-American residents of Little Tokyo are forcibly evacuated and sent to one of ten internment camps. Mutual Trading Co. is forced to stop business. Mr. Hoshizaki spends the duration of World War II in the Manzanar Camp in central California. Fortunately, all of MTC's merchandise was safely stowed at the Maryknoll Church, a Catholic church in Little Tokyo. 1948—With a \$1,000,000 letter of credit in his pocket, Hoshizaki headed to Japan as a trade Envoy to re-establish economic ties. He and Mr. Ishii formed Tokyo Mutual Trading Co.; for the first time MTC had offices on both sides of the Pacific.

1951—Mr. Noritoshi Kanai invested in MTC and joined the management team in Japan. 1956—Mr. Kanai traveled to the USA for the first time to study the demand for Japanese foods.

1964—Mr. Kanai, with his wife and children, relocates to Los Angeles to assume management of MTC from the ailing Mr. Ishii. 1968—MTC moves to a much larger warehouse at 431 Crocker St. in Los Angeles

1970—MTC's annual sales top \$2 million. 1971—Predicting future strengthening of the yen vs. the U.S. dollar, and projecting increased needs for production of Japanese foods in the USA, Mutual pursues plans to make miso and sake in California. 1975—Annual sales reach \$10 million. 1976 Jan.—In a joint venture with Yamajirushi Jôzo (of Maruko Machi, Nagano prefecture, Japan), Miyako

Oriental Foods (Yamajirushi Shinshu Miso of Los Angeles) is established under the management of Teruo Shimizu. 1976—Noritoshi Kanai becomes the fourth president of Mutual Trading Co. Richard Inaba is the chairman. 1977—The popularity of Japanese foods in Southern California continues to rise; there are now 228 restaurants, 39 of which are sushi bars. 1978—Mutual's "Miyako" brands products debut at Ralphs, a 120-store supermarket chain in Southern California.

1982—Miyako Oriental Foods opens a new, 1,000 metric ton capacity miso plant in Baldwin Park, California. In Berkeley, Takara USA begins producing Shochikubai Sake, with Mutual as a partial investor. 1985—Mr. Kanai is chosen President, Japanese Chamber of Commerce of Southern California. 1986—Mr. Kanai is chosen President, Pan American Nikkei Association of USA (PANA). 1988—Mutual acquires management and shareholder control of The Cherry Company in Hawaii from Kirin Beer. And Kirin becomes a shareholder of MTC.

1990—Representing the Japanese-American community, Mr. Kanai is invited to the formal coronation ceremonies for His Majesty Emperor Heisei of Japan. 1994—The government of Japan commends Mr. Kanai for his lifetime services in contributions bridging the Japanese and American cultures, bestowing on him The Order of the Rising Sun, Gold and Silver Rays. 1996 May—Mutual celebrates its 70th anniversary at the MGM Grand Hotel in Las Vegas.

Company profile as of Dec. 1996 (p. 61). Annual sales: \$82.6 million. No. of employees: 199. Products in catalog: 13,000 (of which 5,000 are food, 8,000 are non-food). MTC Group Affiliates: Tokyo Mutual Trading Co., Tokyo and Kobe, Japan. New York Mutual Trading Inc., Moonachie, New Jersey. The Cherry Co., Ltd. Honolulu, Hawaii. Miyako Oriental Foods, Baldwin Park, Calif. Takara Sake USA Inc., Berkeley, Calif. Urashima USA, Inc., Walnut, California. Address: 431 Crocker St., Los Angeles, California 90013. Phone: 213-626-9458.

3942. Ontario Soybean Growers' Marketing Board (OSGMB). ed. and comp. 1997. *Canadian soyfoods directory*. Chatham, Ontario, Canada: OSGMB. 27 p. 28 cm.

• **Summary:** This excellent, complete, and accurate directory was compiled by the Collège d'Alfred of the University of Guelph, under contract with the Ontario Soybean Growers' Marketing Board (OSGMB). The project leaders were Suzanne Lavoie, Charles Goubau, and Ian Walker. The first Canadian soyfoods directory was published in April 1994 (22 pages).

Contents: Foreword—Ontario Soybean Growers' Marketing Board (OSGMB). Acknowledgements from researchers. Table of contents. Soyfood product descriptions: Green vegetable soybeans—Edamamé, meat analogs, miso, natto, okara, soy cheese, soy flour, soy

frozen desserts, soy grits, soy isolate fibre, soy lecithin, soy oil, soy protein concentrate, soy protein isolate, soy pudding, soy sauce, soy sprouts, soy yogurt, soymilk (soy drink and soy beverage), soynuts, tempeh, textured soy flour-TSF, texturized soy protein, tofu, whole dry soybeans, yuba. Soyfoods for your health: Heart disease, cancer, osteoporosis, other conditions. Composition and nutrient value of soyfoods. Soyfood companies by product.

Soyfoods companies by province: Alberta (7), British Columbia (21), Manitoba (2), Nova Scotia (2), Ontario (54), Quebec (20). Soyfood companies (105 companies that make or market wholesale soyfoods)—complete listings (address, phone and fax numbers, contact person, products).

Soyfoods distributors—complete listings (13). Soybean distributors—complete listings (28). Research information sources—complete listings (24). Soyfoods information sources (23). Canadian soyfoods directory questionnaire.

Spot in *Ontario Soybean Growers' Marketing Board Newsletter*. 1997. Dec. p. 5. The Canadian Soyfoods Directory was launched in November after a two-month delay. "The project was undertaken following numerous information requests from consumers, processors and health professionals." Funded by the Board of OSGMB, it has been mailed to all Registered Dietitians across Canada, and it will soon be available on the Board's website. Address: OSGMB, 180 Riverview Dr., P.O. Box 1199, Chatham, ON N7M 5L8, Canada. Phone: 519-352-7730.

3943. Kamego, Marco. 1997. Re: History and present status of Kikko Corporation S.A., manufacturer of soy sauce and miso in Peru. Letter to William Shurtleff at Soyfoods Center, Dec. 29. 3 p. [Eng]

• **Summary:** Mr. Kamego filled out a 3-page company history form sent by Soyfoods Center. This company was founded in April 1957 in Peru by Mr. Manuel Toshihiko Kamego (Marco's father) and Mr. Alejandro Kioyasu Kamego (Manuel's brother). In 1957 the company, named *Fabrica de Siyau Kikko Sociedad de Responsabilidad Limitada*, was located at Av. Colombia 171, Pueblo Libre, Lima, Peru. Phone: 32-3754. The company's first two products, Kikko Siyau ("soy" sauce—but made with Peruvian common beans, *Phaseolus vulgaris*, instead of soybeans because the latter were not available) and Miso Kikko (both *shiro miso* {sweet white miso made with rice} and *aka miso* {red miso made with barley}) were both introduced in 1957. These products may have been the world's first shoyu and miso made with common beans instead of soybeans. In 1960 the company first began to use soybeans in its products; they were grown in Tumbes, on the northern coast of Peru.

From the beginning, the company was dedicated to the traditional, nearly hand-made production of sauces and foods to supply the restaurants and homes of Peruvians of Asian origin through the home delivery system. Marco

writes: "We are the pioneers of soy sauce manufacturing in Peru. It is through our product that the Peruvian native people have come to know soy sauce, its use and quality. Our company has succeeded because of tenaciousness, as well as adaptation to the requirements of the Peruvian market." The Kamego family originated in Japan. The two Chinese characters (*kanji*) with which the family name are written, can also be pronounced "Kikko" and mean "turtle's shell." This explains the origin of the Kikko brand and emblem/logo. Note: The name and logo is very similar to that of Kikkoman, the world's leading manufacturer of soy sauce.

In 1964 the company introduced its third soy product, *Mensi Kikko* (in Chinese *mien shih* = sweet wheat-flour soy nuggets), obtained from fermentation of whole soybeans; it is known as *mianchi* (*mien shih*) in China and *doenjang* in Korea. In 1979 Ajinomoto, the world's leading manufacturer of seasonings and of MSG, began to produce soy sauce in Peru in competition with *Fabrica de Siyau Kikko*, but as of 1997 Kikko is still the leader in the Peruvian market, ahead of Ajinomoto.

In July 1994 the company moved its factory and offices to a new location, which is the present address: Jr. Alexander Fleming 432, Ate, Lima 03, Peru.

In 1995 the company was reorganized as Kikko Corporation *Sociedad Anonima* (S.A.). This new company was formed from the merger of the original company with *Sazonadores S.R.L.* Note: *Sazonadores* means "seasonings" in Spanish. At this time the company launched three new products: Kikko Shoyu: *Salsa de Soya*, *Salsa Mensi* (*mensi* / *mien shih* seasoned with spices), and *Ajoikion* (soy sauce seasoned with ginger and garlic; in Peruvian, *kión* means ginger—the Spanish word is *jengibre*; in Spanish, *ajo* means garlic).

Present status: The company now makes each week: 25,000 liters of soy sauce, 2,000 liters of *Salsa Mensi*, and 2,000 liters of *Ajoikion*. Their second best-selling product is sweet and sour sauce, but it contains no soy. They still make *shiro miso* (sweet white miso) fermented for 5 months, but have discontinued red miso. The company employs 51 people, including 5 in management, 36 production workers, and 10 office and others. The current owners are Manuel Kamego, Marco Kamego, and Alejandro Kamego's heirs. Net sales last year were \$1,500,000. The net worth of the business is about \$115,000. The company's sales have grown, on average, at about 2% each year over the past 2-3 years. The building is 2,000 square meters in size: 1,800 for production and 200 for office space. As of late 1997 the factory is located at Robert Fulton 115, Lima 3, Peru. Most of the soybeans now used by the company come from Bolivia

Marco encloses attractive full-color labels for four products: Kikko Shoyu, *Salsa Mensi*, *Ajoikion*, and Kikko

Siyau. Address: Jr. Alexander Fleming 432, Ate, Lima 03, Peru. Phone: +511 326-0870 or 1200.

3944. Honda, Kyoko. 1997. *Tofu & soybean cooking: The Japanese healthy way*. Translated by Kazuhiko Nagai. Tokyo: Graph-sha Ltd. 64 p. Dec. Illust. 26 cm. [Eng]
• Summary: This full-color Japanese-style cookbook is loaded with color photos showing both steps in the process of preparing recipes and the finished dishes. Contents: Basic preparations: Parboiling soybeans, draining tofu, reconstituting Kôri-dofu, removing oil from abura-age, toasting okara. 1. Soybean cooking. 2. Tofu & natto dishes. 3. Other dishes from soybeans. Articles (summary of four articles), Chinese cheese "Furu." Address: Sc.D. (Doctor of Science), nutritionist, and lecturer at Women's Junior College of Nippon College of Physical Education.

3945. Funaki, J.; Yano, M.; Misaka, T.; Abe, K.; Aria, S. 1997. Purification and characterization of a neutral protease that contributes to the unique flavor and texture of tofumiso-zuke. *J. of Food Biochemistry* 21:191-202. * Address: Japan.

3946. **Product Name:** [Gold Label Sweet Wheat-Flour Soy Nuggets].

Foreign Name: Jinpai Mianchi.

Manufacturer's Name: Mei Wei Hsien Shihp'in.

Manufacturer's Address: National Chungshan City (Zhongshan), Southern Kwangtung (Guangdong) province.

Date of Introduction: 1997.

Ingredients: Yellow soybeans, wheat flour, salt, and sodium benzoate (as a preservative).

Wt/Vol., Packaging, Price: 500 gm.

How Stored: Shelf stable, 6 month shelf life.

New Product–Documentation: Label sent by Marco Kamego of Kikko Corporation S.A., Peru. 1998. March 8. Label is 3 inches in diameter. Red, yellow, black, and gold on white. Registered number: ZBX66019-87. Permit statement. Shelf life: 6 months. Date of production: Not filled in. Note: The word "Mianchi" does not appear in the SoyaScan database.

Talk with H.T. Huang, PhD, expert on the history of Chinese food and agriculture, about letter from William Shurtleff asking many questions about this product. This soy-based seasoning is very well known and popular in southern China, especially in the cooking of Canton (Kwangtung / Guangdong) province, but also in Fukien / Fujian province. Its equivalent in northern China is *Tou-pan Chiang*. Its characteristics are in between those of soy nuggets (*shih*) and Chinese-style soybean miso (*tou-jiang*). It is much more chunky than soybean miso, and a little sweeter than soy nuggets because of the wheat flour—though still salty. The color is brown. *Jinpai* means "gold label" or "gold brand." In Mandarin *Mianchi* is called *Mianshih*,

where *mien* (written here in simplified characters) means "wheat flour" and *shih* means "soy nuggets." Soy nuggets can be looked on as an intermediate in the making of *jiang*. Sometimes the soy nuggets are made by coating cooked soybeans with wheat flour. If you use a lot of flour, you will end up with *chiang*, but if you use only a small amount, the nuggets will keep their shape. This product is made using a two-step fermentation: (1) Cook soybeans, dehull, coat with a little wheat flour, inoculate, and allow to ferment to make soy nuggets. This first fermentation takes about 10 days in summer, or 15 days in winter. (2) Mix the soy nuggets (soybean koji) with salt and water (not too much water), place in an earthenware vat, and allow to ferment for about 4 weeks until it forms a paste that is thicker than *chiang*. This seasoning is made in Chungshan (pinyin: Zhongshan), located between Canton and Macao; the characters mean "inside/middle + mountain." Dr. Sun Yatsen, the famous Chinese statesman (1866-1925) comes from Chungshan; his name was originally Sun Chungshan.

3947. Cerquetti, Giorgio. 1997. *The vegetarian revolution*. Badger, California: Torchlight Publishing, Inc. xiv + 243 p. No index. 23 cm.

• Summary: This book is divided into two parts: Commentary (which includes many quotations about vegetarianism) and cookbook. Contents: Part A—The vegetarian revolution. 1. Join the revolution. 2. The future is vegetarian. 3. Animals deserve to be alive. 4. More evidence. 5. Proteins and vitamins. 6. Vegetarians live longer: Longevity, prana, fasting. 7. Vegetarianism and world religions: Vegetarian Jews, vegetarianism and early Christianity, Jesus was vegetarian, the new Catholic catechism, the oldest teachings, the law of karma, Buddha was vegetarian, was Mohammed vegetarian, Sikhs, Jains, speciesism: The last barrier, thought-provoking facts about vegetarianism. 8. Open letter to McDonalds.

Part B—Recipes (108 recipes). 9. Recipes of famous people. 10. Recipes of vegetarian groups. 11. Recipes of vegetarian restaurants. 12. Recipes from vegetarian cookbooks.

Part C—Resources. Vegetarian international. Alphabetical listing of recipe sources. About the author.

Giorgio Cerquetti, PhD, author and yoga practitioner, was born in Italy in 1946 and has been a vegetarian since age 16. In 1991 started to spend more time in the USA and, with Alister Taylor, he founded Vegetarians International. Address: Italy and the USA.

3948. Emmons, Didi. 1997. *Vegetarian planet: 350 big-flavor recipes for out-of-this-world food every day*. Boston, Massachusetts: The Harvard Common Press. xii + 564 p. Illust. by Melissa Sweet. Index. 24 cm.

• Summary: This hefty vegetarian cookbook contains 350 new and exciting innovations on recipes from around the

world. Didi is described as “a bold new talent!” and her book is a Beard Award nominee. Soy-related recipes include: Miso soup (p. 113-14). Thai tofu with red curry sauce over coconut-scallion rice (p. 213-15). Frozen soybeans [green vegetable] (p. 263). Many Chinese markets sell these in their freezer sections. “Packaged in Taiwan, they look a lot like lima beans, but they are delicate in flavor and especially high in protein. I keep them in my freezer and add them by the handful to various dishes, just as I would add peas or snow peas.” The names and pages of recipes to which they can be added are given.

Mu shu tofu (p. 360-63). Cooking with tofu (p. 361, including description of varieties and serving suggestions). Cooking with legumes (incl. azuki beans and soybeans, p. 368-69). Tofu and pumpkin seed burgers. Also contains many recipes using sea vegetables. Address: Chef at Pho République (a French-Vietnamese Bistro), Cambridge, Massachusetts.

3949. Grogan, Bryanna Clark. 1997. Twenty minutes to dinner: Quick, low-fat, low-calorie vegetarian meals. Summertown, Tennessee: The Book Publishing Co. 192 p. Index. 21 cm.

• **Summary:** This vegan cookbook contains a wealth of soy-related recipes. Also includes soy-free options for recipes with tofu and soymilk. Address: Denman Island, east of Vancouver, British Columbia, Canada.

3950. Jordan, Michele Anna. 1997. California home cooking: American cooking in the California style. Boston, Massachusetts: Harvard Common Press. xxv + 501 p. See p. 353-54. Illust. Index. 24 cm. [120+* ref]

• **Summary:** The recipe for Korean-style grilled steaks (p. 353-54) is an adaptation of *bulgogi*, the well-known Korean barbecue dish that features thin strips of beef. Both San Francisco and Los Angeles have large communities of Korean immigrants, with many Korean restaurants and markets. “Note: To make *samjan* sauce, mix 2 parts *dhwen-jang* [*doen-jang*], or Korean bean paste, with 1 part *gochujang*, or Korean barbecue sauce.” Both are available in Asian food stores. Miso may be substituted for *dhwen-jang* and *sambal ulek* for *gochujang*.

Note: This is the earliest English-language document seen (March 2009) that uses the word “*gochujang*” to refer to Korean-style red pepper and soybean paste (miso).

Teriyaki recipes appear on pages 318 and 327.

Contains a good bibliography, and many sidebars, on the history of California cooking. Address: California.

3951. Katzen, Mollie. 1997. Vegetable heaven. New York, NY: Hyperion. xv + 223 p. Illust. (Color by Mollie Katzen). Index. 27 cm.

• **Summary:** A handsome vegetarian cookbook. Soy-related recipes include: Vietnamese salad rolls (with firm tofu, p.

11). Kung pao lettuce cups (with firm tofu, Northern Chinese, p. 13). Eggflower soup with pasta shells (with firm tofu, p. 32). Potato soup with rosemary and roasted garlic (with silken tofu, p. 33). Coconut-lemon grass soup (with firm tofu, p. 43). Baked coated nuts sweet or savory (with soy sauce, p. 57). Basic soyburgers (with cooked soybeans and tofu, p. 76). Green beans and tofu in crunchy Thai peanut sauce (with firm tofu, p. 103). Magic carrot flans (with milk or soymilk, p. 122). Scalloped potatoes three variations (with milk or soymilk, p. 130). Sandwiches to write home about (with firm tofu, p. 136). Buckwheat soba with squash, smoked tofu, and basil (with smoked tofu and miso, p. 144). Tiny pasta stew (with firm tofu, p. 151). Horseradish aioli (with silken tofu, p. 168). Peanut-chile [chili] dressing (with soy sauce, p. 174). Homemade butterscotch pudding (with milk or soymilk, p. 194). Pumpkin mousse with gingersnap crumbs (with silken tofu, p. 196). Bittersweet chocolate-banana mouse (with silken tofu, p. 197).

A color photo on the rear cover shows Molly Katzen. Address: California.

3952. Keussink, Ruth. 1997. Soja und Sojaprodukte [Soybeans and soy products]. Bonn, Germany: Auswertungs- und Informationsdienst fuer Ernährung, Landwirtschaft und Forsten (aid) e.V. 28 p. Illust. (Color photos). 21 cm. [14 ref. Ger]

• **Summary:** Contents: Introduction. Market and utilization. Soya in the diet: Protein, fat, carbohydrates, minerals and trace minerals, vitamins. Overview—Soy products: Whole soybeans, soy sprouts, soy oil, soy beverage, tofu, natto, sufu, tempeh, soy sauces, miso, soy lecithin, soy sausages, TVP. Processing soybeans. Soy ingredients and additives: Soy protein isolate, concentrate, soy bulk / fiber (*sojaballastoffe*), fatty acids, lecithin, vitamin E (tocopherol). Product safety. Genetically engineered soybeans. Tips for buying and storing. Recipes. Address: Konstantinstr. 124, 53179, Bonn, Germany.

3953. Messina, Virginia Kisch; Messina, Mark. 1997. Soy to the world. In: 1997 Medical and Health Annual. Published by Encyclopedia Britannica, Inc. See p. 197-202.

• **Summary:** In the section titled “Diet and Nutrition” is a long subsection on “Soy to the world.” Contents: Introduction. Sacred crop (history). Varied and versatile: Whole soybeans (incl. green vegetable soybeans), traditional soyfoods (soymilk, tofu, okara, yuba, tempeh, miso, soy sauce or shoyu), modern soy products (textured soy flour or TVP), “second-generation” soyfoods. One of nature’s most nutritious foods. Health benefits: the evidence so far: Cancer, heart disease, osteoporosis, kidney disease, menopause. Tofu on your table (how to incorporate soy into American diets; incl. TVP, soymilk, soy flour, soy nuts). Address: 1. M.P.H., R.D.; 2. Ph.D. Both: PhD, 1543 Lincoln

St., Port Townsend, Washington 98368. Phone: 360-379-9544.

3954. Nabben, Alexander. 1997. *Kochen und Backen mit Tofu: Vegetarische Rezepte ohne tierisches Eiweiss* [Cooking and baking with tofu: Vegetarian recipes without animal protein]. Darmstadt, Germany: Pala-Verlag. 139 p. Illust. Recipe index. 21 cm. [Ger]

• **Summary:** Contents: Tofu—versatile and healthful. The soybean: Cultural history, production, the world and the soybean, nutritional value of soybeans, soyfood products (soy sauce, miso, tempeh, okara, soy coffee, soynuts, soy sprouts, modern western soy protein products—soybean flour, flakes, textured soy flour, soy protein isolates, defatted soybean meal, industrial soy products), genetically engineered soybeans. Tofu. Tips, tricks, and useful information. How to make soymilk at home. How to make tofu at home. Tofu recipes and marinades. Raw foods and salads. Dressings. Sauces. Soups. Main dishes. Soufflés. Pasta. Patties / burgers. Spreads. Party snacks. Cooking and baking. Desserts and sweet delicacies (*süsse Leckereien*). Ice cream. Address: Weigandufer 38, 12059 Berlin, Germany. Phone: 30 / 6808 0686.

3955. Nutrition Education Service, Sanitarium Health Food Company. 1997. *Sensational soy cookbook*. Sydney, London, Vancouver, New York: Murdock Books. 64 p. Illust. Index. 20 cm. [32 ref]

• **Summary:** A saddle-stitched vegetarian cookbook on glossy paper loaded with color photos and lightweight text. The author and nutritionist is Cathy McDonald of Sanitarium. Recipes developed by Wendy van der Veer of Sanitarium. Contents: The story of soy. The soy family: Miso, soy beans, soy breads & cereals, soy cheese, soy drink, soy flour, soy grits & soy flakes, soy 'meats,' soy pasta, soy sauce, soy snacks, tempeh, TVP, tofu, tofu desserts (ice cream and yoghurt). Breakfasts. Soy for health (isoflavones, menopause, breast cancer, osteoporosis, prostate cancer, heart disease). Light meals. The secrets of soy. Main meals. Soy in perspective. Desserts. Sensational soy (sample menus). Snacks. Know your nutrients. Bibliography. Estimated isoflavones in soy foods (table). Address: 1 Sanitarium Drive, Berkeley Vale, NSW 2261, Australia.

3956. Oishii miso ga tabetai: herushii na miso de tsukuru shiki no ryôrishû [I want to eat delicious miso: Healthy seasonal miso cookbook]. 1997. Tokyo: Zesuto. 95 p. 26 cm. [Jap]*
Address: Japan.

3957. Rombauer, Irma S.; Becker, Marion Rombauer; Becker, Ethan. 1997. *The joy of cooking*. New York, NY:

Simon & Schuster / Scribner. xiv + 1136 p. Illust. Index. 24 cm.

• **Summary:** Soy-related subjects include (* = recipe): Soy sauce butter* (p. 77). Asian black bean sauce* (with “3 tablespoons preserved black beans” [soy nuggets], p. 83). Japanese wasabi soy sauce* (p. 83-84). Ginger soy sauce* (p. 84). Soy and sherry marinade* (p. 85). Description of miso soups and their role in the Japanese diet (p. 107-08). Light-colored miso soup with simmered vegetables and dark-colored miso soup with sautéed vegetables and Mongolian Hot Pot—a miso soup based dish* (p. 108). Ginger soy vinaigrette* (p. 238).

One long chapter is titled “Beans and Tofu” (p. 270-294). Lentils with spinach and soy sauce* (p. 280). The section titled “soybeans” (p. 287) discusses their nutritional value, health benefits (“They contain substances thought to help prevent breast and other cancers, as well as Omega-3 fatty acids, which reduce the risks of heart disease”), how to cook yellow and black soybeans, how to dry-roast [to make soynuts], many ways of processing, soy milk, okara, fermented black beans, soy sauce, tamari, miso, soy cream cheese, soy sour cream, and soy cheese. There are also substantial subsections describing the following soyfoods: (1) Soy milk, including a recipe for making it at home (p. 287-88). (2) Tofu, including silken tofu, cottage tofu, frozen tofu, sauteed or fried tofu, and smoked tofu (p. 288-89). Recipes containing tofu include: Szechuan spiced tofu, Southeast Asian curried vegetable stew, Smoked tofu burgers, and Brown rice tofu salad with orange sesame dressing (p. 289-90; the latter recipe calls for toasted sesame oil and adzuki beans, with smoked tofu being optional). (3) Tempeh, including recipes for Moo shu tempeh and Szechuan-style “hacked” tempeh. (4) About soy protein, describing textured vegetable protein and textured soy concentrate, with recipes for Dinner loaf Tex-Mex style and Lion’s head (p. 292). This is followed by a subsection describing seitan and with recipes for Root vegetable and seitan stew, and Seitan kibbe (p. 293-94).

Asparagus with mustard miso* (p. 343-44). Baby bok choy with soy ginger sauce* (p. 349). Steamed scallops or shrimp with soy sauce* (p. 513). Grilled or broiled whole red snapper with ginger soy vinaigrette* (p. 548-49). Small fish, fillets, or steaks poached in soy sauce* (p. 555-56). Chinese soy-braised chicken* (p. 601-02). The chapter titled “Know your ingredients” (1059-87) includes short descriptions of bean sauce, Hoisin sauce, miso, nori, salted and fermented black beans, sesame oil, sesame paste, soy sauce, tamari, tonkatsu sosu (dark spicy sauce based on soy), wakame, wasabi, vinegars from fruit and grains, margarines (mentions trans fatty acids, but not soy), and shortenings (p. 1065-69).

Subjects related to vegetarianism include: Discussion of vegetarian diets (positive and accurate, in Chapter 1, p. 3). List of vegetarian side-dishes and main courses in this

edition (27 recipes, p. 20). Vegetarian chili* (p. 283). Dairy-free chocolate cake* (vegan, p. 932). Ultra-orange cake* (vegan, p. 932-33).

Irma Rombauer (the grandmother of Ethan Becker) first wrote the *Joy of Cooking* in 1931, "when domestic help was fast becoming a thing of the past and women all over the country were once again heading to the kitchen."

Note: This cookbook was written by a committee of experts, put together by Maria Guarnaschelli. Many controversies and clashes of opinion arose out of this arrangement. Address: 3. Cockaign, Cincinnati, Ohio.

3958. Solomon, Charmaine. 1997. Orient express book. Melbourne, Australia: Hamlyn. 92 p. *

3959. Sullivan, Cheryl; Rhodes, Kathy. 1997. Soyfoods: A healthy profile. Revised ed. Sioux Falls, South Dakota: South Dakota Soybean Board. 118 p. Illust. Index. 22 cm.
 • **Summary:** Contents: Introducing soyfoods to your diet. The healthful soybean. Exploring soyfoods: Dried soybeans, fresh green soybeans, soy milk, tofu, textured soy protein, soy flour, soy grits, tempeh, miso, soy meat analogs. Where to find soy products. Nutrient information. Recipes: Breakfast, beverages, breads, appetizers & snacks, salads, soups, sandwiches, side dishes, main dishes, desserts. Guide to modifying recipes: A one-for-one substitution.

Talk with Betty Hansen at South Dakota Soybean Board. 2000. May 15. This cookbook (which is undated) was first published in 1996, and revised in 1997. It was reprinted by the Nebraska Soybean Board with their name and phone number on the rear cover.

Talk with Cheryl Sullivan. 2002. Aug. 12. This booklet is basically *Simply soy: A variety of choices*, with a new cover and title, plus a few pages of additional information added by the South Dakota Soybean Board in Sioux Falls. Address: 1. M.A., R.D.; Ph.D., R.D.

3960. Early soyfoods in China—Chronological (SoyaScan database search report). 1998. 12 p. incl. index. Jan. 23. Unpublished manuscript. [20 ref]

• **Summary:** This carefully customized database search was conducted for Mark Messina to document the fact that soyfoods have been widely consumed for a long time in China. Among the 20 records are the earliest Chinese-language and English-language documents that mention or discuss soyfoods in China, with emphasis on soy sauce (15 records), tofu (12 records), and Chinese-style miso (chiang, 6 records). Also includes the earliest English-language records that give significant industry or market statistics on soy sauce or tofu in China.

3961. Early soyfoods in Japan—Chronological (SoyaScan database search report). 1998. 36 p. incl. index. Jan. 23.

Unpublished manuscript. [20 ref]

• **Summary:** This carefully customized database search was conducted for Mark Messina to document the fact that soyfoods have been widely consumed for a long time in Japan. Among the 47 records are the earliest Japanese-language and English-language documents that mention or discuss soyfoods in Japan, with emphasis on tofu (27 records), soy sauce (26 records), miso (20 records), and soymilk (8 records). Also includes the earliest English-language records that give significant industry or market statistics on tofu, miso, or soy sauce in Japan.

3962. **Product Name:** Sweet White Miso, or Sweet Black Miso.

Manufacturer's Name: Fermentations. A Div. of Germinations.

Manufacturer's Address: 1173 Hearst St., Berkeley, CA 94702. Phone: 510-540-5185.

Date of Introduction: 1998. January.

Ingredients: Organic (black) soybeans, organic rice, sea salt, koji culture. Organically grown in accordance with the California Organic Foods Act of 1990.

Wt/Vol., Packaging, Price: 8 oz round plastic deli tub. Sweet White retails for \$3.00 and Sweet Black retails for \$4.00 (Berkeley, California).

How Stored: Refrigerated.

New Product—Documentation: Alexandra Hozven calls twice. 1995. Sept. We talk for 20 minutes. She and her husband are saving up \$10,000 to travel to Japan, learn Japanese at the *Nihongo Gakko*, and study miso-making with a Japanese master. Address: 1448 Los Vecinos, Walnut Creek, California 94598.

Talk with Alexandra Hozven, who called. 1998. March 25. She is now living in Berkeley with her husband and 18-month old son. Makes 2 types of miso (which she first started selling in Jan. 1998) and sells them twice a week at Berkeley farmers' markets. The Saturday market is at Center and Martin Luther King St. The Tuesday market is at Derby and Martin Luther King St. The sweet black miso is made with black soybeans. She also makes sprouts, raw sauerkraut, and kimchi. She would like to start making a finger lickin' miso and natto miso. She and her husband were unable to go to Japan to study miso because she got pregnant.

Alex visits Soyfoods Center with samples, Labels, and prepared dishes. 1998. April 12. Alex got interested in miso via macrobiotics. She makes the koji and miso in at home with her family. Label: 3 inch diameter. Self adhesive. White on pea green. Soyfoods Center taste test: Texture: Chunky. Flavor: Good.

3963. Golbitz, Peter. 1998. Tofu & soyfoods cookery: Delicious foods for a healthy life. Summertown, Tennessee:

Book Publishing Co. 176 p. Illust. (3 photos). Recipe index. General index. 21 cm.

• **Summary:** Contents: Preface and acknowledgments. The history of soyfoods. A closer look at soybeans. Soybeans and health: Introduction, malnutrition, cardiovascular disease, cancer, osteoporosis, menopause, more to come. Using soyfoods: Whole dry soybeans, tofu, soymilk, soy flour, textured soy protein, green vegetable soybeans, tempeh, miso, soy sauce, soy protein concentrate, soy protein isolates, natto, soybean oil, second generation soyfoods, meat alternatives, cheese alternatives, soy yogurt, nondairy frozen desserts, mayonnaise and dressings, instant soups and other dry mixes, margarine, lecithin, soynuts and soynut butter, soy sprouts, okara or soy pulp. Basic recipes. Breakfast. Bread. Salads & dressings. Soups & sandwiches. Main & side dishes. Desserts & drinks. Glossary. U.S. & Canadian soyfoods companies. Sources of information on soyfoods. Nutrients in soyfoods.

Contains 125 of Peter Golbitz's favorite recipes, selected from the works of some of "the world's leading soyfoods chefs." A list of these "leading vegetarian and soyfoods pioneers" (all of whose books have been published by The Book Publishing Co.) appears on the rear cover. Peter (born in 1952) lives with his wife, Sharyn Kingma, and son on a beautiful island the coast of northern Maine. A color photo of the family appears on the rear cover. Twenty years ago (in 1978) Peter was "first introduced to tofu and the wonders of soyfoods." A photo of Peter with his book appears in the Book Publishing Catalog of Jan. 1999. Address: President and Founder, Soyatech, Inc., Bar Harbor, Maine. Phone: 207-288-4969.

3964. Greenberg, Patricia; Hartung, Helen Newton. 1998. The whole soy cookbook: 175 delicious, nutritious, easy-to-prepare recipes featuring tofu, tempeh, and various forms of nature's healthiest bean. New York, NY: Three Rivers Press (Crown Publishers / Random House). ix + 221 p. Illust. Index. 24 cm.

• **Summary:** Contents: Acknowledgments. Introduction. All about soy: Health benefits of soy (reduces the risk of heart disease, lowers the risk of breast cancer, eases the symptoms of menopause, protects against prostate cancer, prevents digestive disorders {when using whole soybeans or soy products containing high levels of fiber}, eliminates the problem of lactose intolerance, prevents the problems of milk allergy, beneficial in diabetic diets), cooking with soy products (meat analogs or meat substitutes {soy sausage, soy bacon, hamburgers and hot dogs}, miso, okara, soy cheese, soy milk, soy sour cream, soy yogurt, soy flour, whole soybeans, soybeans-green, soybeans-roasted, tempeh, textured vegetable protein (TVP), tofu & silken tofu; Soy-based foods (containing little or no protein): Egg replacers, soy margarine, soy mayonnaise, soybean oil, soy sauce) how to get optimum nutrition from soy (protein,

carbohydrates, fat, cholesterol, fiber, sodium), nutrition information. Sample menus (for 3 meals a day, 7 days a week). Recipes: 1. Appetizers, dips, and spreads. 2. Salads and vegetables. 3. Brunch and breads. 4. Pizza and sandwiches. 5. Soups and stews. 6. Main dishes. 7. Pastas and grains. 8. Desserts.

This books contains almost 200 delicious and easy ways to add that essential 25 grams of soy protein to your diet. These recipes (each of which includes a nutritional analysis) are based on more than ten years of experience and experimenting (p. 2). Address: P.O. Box 10853, Beverly Hills, California 90213. Phone: (310) 474-4539.

3965. Lehnert, Dick. 1998. Specialty soybean varieties bring premiums for a price: Markets for food-grade varieties are growing. *Soybean Digest*. Jan. p. 64-65, 68.

• **Summary:** About 120,000 tons of specialty soybeans are now shipped from the USA to Japan each year—about 10% of the food-grade soybeans the Japanese buy. The soybeans must always be kept separate—"identity preserved." Growers typically get more dollars per bushel, but sometimes get fewer bushels per acre. The soybeans are made into foods such as tofu, tempeh, natto, or miso.

Kim Nill, deputy director for international marketing at the American Soybean Association, keeps tabs on the growing opportunities for specialty soybeans. He says seed companies are finding niche markets for food-grade soybeans.

Last year, Dupont introduced a variety that produces oil high in oleic acid (naturally lower in saturated fats and more heat stable without hydrogenation). Dupont is now working on a low stachyose bean. Pioneer Hi-Bred International grew 7,000 acres of low-linolenic oil beans for a market similar to that of high-oleic acid beans.

A photo shows a combine harvesting specialty soybeans that will be made into tofu.

3966. Mitchell, Paulette. 1998. The complete soy cookbook: More than 150 simple recipes for good health and great taste. New York, NY: Macmillan Publishing (A Simon & Schuster Macmillan Co.). xlix + 270 p. Illust. Index. 24 cm.

• **Summary:** A very attractive vegetarian cookbook. Each recipe is marked with one of three symbols: V = vegan, lo = lacto-ovo vegetarian, and l = lacto vegetarian. Contents: Preface: An ancient Asian secret isn't a secret anymore. Introduction: The whys (cancer, heart disease, osteoporosis, menopause, diabetes), the hows, soy food ingredients (soybeans, sweet beans {edamame}, tofu, tempeh, texturized vegetable protein {TVP}, soy milk, soy flour, soy oil, soy sauce), other soybean products (soybean sprouts, okara, miso, roasted soynuts, isolated soy protein {ISP}, dairy and meat analogs), a note on food allergies. Soy success: Stocking your refrigerator and pantry, using the recipes, kitchen equipment. 1. Appetizers. 2. Soups. 3.

Salads. 4. Entrees. 5. Desserts. Appendix: Recipes listed by soy food categories (and within each category by recipe type—such as salads, soups, desserts): Whole soybeans (32 recipes), sweet beans (green vegetable soybeans, 7 recipes), tofu (96), frozen and thawed tofu (14, all entrées), pressed tofu (12), tempeh (14), textured vegetable protein (TVP, 4), soy milk (14). Note that tofu was used in by far the most recipes (96), followed by whole soybeans (32).

Paulette, who lives in Minneapolis, Minnesota, is a cooking instructor, restaurant consultant, and lecturer. Paulette is the author of many Macmillan books, including *The 15-Minute Vegetarian Gourmet*, *The 15-Minute Single Gourmet*, and *The Complete Book of Dressings*. This book is dedicated to her 14-year-old son, Brett. Address: Minneapolis, Minnesota. Phone: 612-941-7576.

3967. Indiana Soybean Board. 1998. Indiana soyfoods locator guide: A guide to finding soyfoods in the supermarket and health food store. Lebanon, Indiana: Indiana Soybean Development Council. 48 p. 28 cm.

• **Summary:** This is the first edition of this Guide. On the cover is a paper grocery bag resting on a bed of soybeans and chock full of foods: Veggie Slices (soy cheese), soynut butter, veggie burger, tofu, soymilk, soy flour, plus carrots, celery, and cooking oil. Contents: Food pyramid. Soyfoods descriptions—Meat the Bean: Introduction, green vegetable soybeans (edamame), hydrolyzed vegetable protein (HVP), infant formulas—soy based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen desserts, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour, soy grits, soy protein concentrate, soy protein isolate (isolated soy protein), soy protein—textured (textured soy protein, textured soy flour), soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk—soy beverages, soynut butter, soynuts, soybean oil & products, sprouts—soy, tempeh, tofu & tofu products, whipped toppings—soy-based, yuba. A taste for health—Scientists are learning about soy's health benefits: Heart disease, osteoporosis, menopause, cancer, isoflavones. Soyfood icon chart. Soyfood facts & recipes: Meat alternatives, soybean oil, textured soy protein, whole soybeans, soy flour, soymilk, tofu. Composition and nutrient content of soyfoods. Soyfood conversion charts: description of one serving of soyfoods, guide to modifying recipes, soyfoods substitution chart. Mail order soyfood companies. Soyfoods Web site packed with information. Soy cookbooks. Soy resource books. 1-800-talksoy. Soyfoods market search map; where to find soyfoods in the supermarket (a two page color layout of a supermarket displaying where soyfoods are located). Soybeans... they're in almost everything. Finding soyfoods at the supermarket (store listings by county). Address: Indianapolis, Indiana 46205-1744. Phone: 1-800-275-7679.

3968. Lindsay, Shirley H.; Claywell, Lora G. 1998.

Considering soy: Its estrogenic effects may protect women. *Lifelines (Association of Women's Health, Obstetrics and Neonatal Nurses) (Hagerstown, Maryland)* 2(1):41-44. Feb. [14 ref]

• **Summary:** Contents: Introduction. Understanding soy. Soy and menopause. Effects on osteoporosis. Soy & breast cancer. Effects of cholesterol. One sidebar, titled "A look at popular soy foods," gives a brief definition of miso, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), roasted soy flour, tempeh, tofu.

A second sidebar, titled "One woman's experience," states that author Shirley Lindsay has been a near vegetarian for two years, using soy protein as her main protein source, but also an occasional serving of fish. She consumes one 14-oz. glass of soymilk and 5-8 oz. of low-fat silken tofu daily. Her diet contains approximately 70 mg/day of isoflavones. She also eats a very low-fat diet that includes low-fat dairy products, egg whites, fruits, vegetables, and olive oils. Lindsay also bakes with soy products and flax seed; the latter is rich in lignans.

"Lindsay has successfully eliminated 90 percent of her menopausal symptoms, as well as decreased her serum lipids. When she began the diet, she eliminated animal proteins except skim milk and egg whites, and within 10 days she noted a 90 percent decrease in hot flashes and night sweats. At one point, Lindsay only ate isolated soy protein powder supplements, but her menopausal symptoms returned because a significant amount of phytoestrogen is lost in the processing of powders." Address: 1. Asst. Prof. of Maternal-Newborn Nursing; 2. Director, Associate of Science in Nursing program. Both: Deaconess College of Nursing, St. Louis, Missouri.

3969. *River Currents: News from South River Miso Company*. 1998—. Serial/periodical. South River Farm, Conway, Massachusetts. Vol. 1, No. 1. Winter 1998—. Frequency: Annual. 28 cm.

• **Summary:** This newsletter contains: News about the company, with photos. A catalog of its products with current prices and a detailed description of each type of miso and tamari. Order form. Miso recipes. Frequently asked questions about miso. Company mission statement: "Life is sacred. Food is sacred." Address: Conway, Massachusetts.

3970. Stevens & Associates, Inc. ed. and comp. 1998. U.S. 1998 soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 47 p. 28 cm.

• **Summary:** This third edition of the U.S. Soyfoods Directory was produced for the Indiana Soybean Board by Stevens & Associates.

Note: Nasoya Foods has its own listing but Azumaya does not. Azumaya is listed under Vitasoy USA Inc. as a brand. Address: Stevens & Associates, 4816 North

Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

3971. Farrell-Kingsley, Kathy. 1998. VT's most wanted. *Vegetarian Times* No. 247. March. p. 42. *

• **Summary:** Recipes chosen as essential by a group of polled vegetarians.

3972. **Product Name:** Finger Lickin' Miso-Hishio.

Manufacturer's Name: Fermentations. A Div. of Germinations.

Manufacturer's Address: 1173 Hearst St., Berkeley, CA 94702. Phone: 510-540-5185.

Date of Introduction: 1998. April.

Ingredients: Organic barley, organic shoyu, organic soybeans, organic carrots, organic daikon, organic burdock, kombu, ginger, horseradish, koji culture.

Wt/Vol., Packaging, Price: 9 oz. glass jar. Retail for \$5.00 (Berkeley, California).

How Stored: Refrigerated.

New Product-Documentation: Talk with Alex Hozven who visits Soyfoods Center with product and Label. 1998. April 12. This product was introduced in April 1998. It is the first hishio made in the Western World. Label: 3½ by 2½ inches. Self adhesive. White on black. A small, tan hangtag (4 panels, each 2 inches square) bears the company logo on the cover and describes the product on one panel inside. Soyfoods Center taste test: Texture: Chunky. Flavor: Good.

3973. Ryan, Nancy Ross. 1998. Oh, boy! soy! Top chefs celebrate the diversity of soyfoods with 8 show-stopping dishes. *Vegetarian Times* No. 248. April. p. 36-43.

• **Summary:** Chefs from stylish restaurants sing the praises of tofu and offer their favorite recipes: Jump start smoothie (with soymilk). Veggie Peking 'Duck' (with frozen, dried sheets of yuba). Miso risotto. Curried tofu and sweet potato wakaya. Barbecued tofu. Sweet-and-sour tempeh with cucumber and cauliflower. Golden-fried bean curd with tomatoes. Sautéed eggplant with miso sauce. Note: The word "soyfoods" is misspelled as "soy foods" throughout this article. Address: Chicago.

3974. Sass, Lorna J. 1998. The new soy cookbook: Tempting recipes for tofu, tempeh, soybeans & soymilk. San Francisco, California: Chronicle Books. 120 p. Illust. (25 color photos by Jonelle Weaver). Index. 21 x 23 cm.

• **Summary:** Contents: Introduction-The soy of cooking (descriptions of soybeans, black soybeans, soymilk, tofu, tempeh, miso, soy sauce). Appetizers and soups. Entrées. Soy on the side: Vegetables and grains; Salads, slaws and dressings; Scones and a few desserts. Mail order sources. Table of equivalents. A black-and-white photo shows the author. Note: This is not a vegetarian cookbook. Ingredients

include swordfish, shrimps, mussels, codfish, clam chowder, etc.

Letter (fax) from then talk with Lorna Sass. 1996. Sept. 8. This trade paperback book, with many full-page color photos, is scheduled to be published in the spring of 1998. Chronicle Books is now publishing a series of books titled *The Vegetarian Table*, with each book featuring the vegetarian cookery of a different country. Address: 46 West 83rd St., New York City, NY 10024. Phone: 212-799-1085.

3975. Soyfoods Association of America. 1998. Soyfoods once a day for life! (Special advertising section). *Vegetarian Times*. April. 12-page color insert after p. 58.

• **Summary:** Contains large color ads by Nasoya (tofu and TofuMate), Morningstar Farms (Chik Nuggets), Eden Foods (organic black soy beans) Vitasoy (creamy original natural soy drink), Westbrae (Westsoy soymilks), Westbrae (Vigoraid nutritional drink), Sno Pac (frozen Sweet Beans-organic green vegetable soybeans), and GeniSoy (soy protein bars). On the rear cover are additional small ads (each with a logo) for Lightlife Foods, Lisanatti, Monsanto, Soyco Foods-Div. of Galaxy Foods Co., Soyfoods Association of North America, and United Soybean Board.

Interspersed with the ads is advertorial text and "Soy facts." The text on page 1 begins: "Miracle food. Health insurance in a pod. Nutritional powerhouse. The bean supreme. Nutritionists, physicians, researchers, chefs, and food experts of all kinds are raving about the healthfulness and great taste of soyfoods, and it's no wonder; soy truly is a nutritional and culinary gift from nature.

"Soyfoods are delicious, convenient, and versatile. At breakfast, soy can make an appearance in the form of soymilk, scrambled tofu 'eggs,' or soy 'sausages.' A soy shake or veggie burger makes a great lunch. Try a tempeh stir-fry, or perhaps a creamy tofu dessert.

"So dig in... with the huge variety of soyfoods available at your local natural foods store, it's easy to get your daily intake of soy, and reap the many benefits of the bean supreme."

The inner contents: Food as medicine. Heart health. Fighting cancer. Menopause? What menopause? Strawberry smoothie. Protein punch.

Soy cooking tips (p. 4): Easy ways to incorporate soy into your baking: Use soy flour in your baking. Be aware that soy flour contains no gluten, and therefore yeast breads will not rise without the addition of some gluten-containing flour. About ¼ cup of soy flour per cup of unbleached white flour is recommended for breads, pastas, and pastries. In place of olive oil, try adding a few ounces of Nasoya Silken Tofu and a dash of lemon juice to mashed potatoes. Try mashing miso into your root vegetables in place of butter. When adding miso to dishes, add roughly 1 tablespoon per four servings. Add GeniSoy Natural Vanilla Soy Powder to your baked goods such as muffins or pancakes. Buy Eden

Organic Soybeans in a can and use them the same way you would any other canned bean: over rice, with pasta, in stir-frys, etc.

It's not only what you eat; its also what you don't eat. Making healthy eating taste great. Soy fact: soybeans were traditionally considered one of five sacred crops in China.

No time to cook? Try these quick ways of getting soy in your diet.

Strong bones... a matter of calcium retention. Miso.

Soy fact: there is no word for "hot flash" in Japan. Soy beverage.

Miraculous tofu. So soy convenient. Soy fact: Western culture discovered tempeh through the Dutch colonization of Indonesia. Soy fact: tofu was unknown to most people in the United States until Chinese immigrants came to this country in the 1800's. Tofu.

Tempeh. By the handful. Soy fact: miso was developed in China about 2,500 years ago. Where to find it. Address: Washington, DC.

3976. *Vegetarian Times*. 1998. Soyfoods once a day for life! No. 248. April. p. 59. *

• **Summary:** Includes recipes and sources for soyfood products.

3977. Hainer, Cathy. 1998. Oh, 'soy' wonderful! Shucking its hippie image, the bean goes mainstream. *USA Today*. May 29. p. 08.D. Final edition.

3978. Gotoh, T.; Yamada, K.; Yin, H.; Ito, A.; Kataoka, T.; Dohi, K. 1998. Chemoprevention of N-nitroso N-methylurea-induced rat mammary carcinogenesis by miso and tamoxifen, alone and in combination. *Japanese J. of Cancer Research (Gann)* 89(5):487-95. May. *

• **Summary:** Diets containing either 10% soybeans or 10% miso reduced mammary tumor numbers (tumors/rat) by roughly 50%, although there was little effect on tumor incidence (percentage of rats in each treatment group developing tumors).

The combination of miso and tamoxifen strongly inhibited tumor development—more than either agent alone. Moreover, when treatment was delayed until mammary tumors were already established, the combination of miso and tamoxifen inhibited tumor growth by about 50%, whereas tamoxifen by itself was ineffective. Miso by itself was not studied.

3979. Jacobi, Dana. 1998. Soya, oh boy! A whole new world of taste. *Better Nutrition* 60(5):64. May. *

3980. Dateline. 1998. Healthline: The joy of soy. Television broadcast. NBC. June 9.

• **Summary:** The announcer from Studio 3B in New York is Stone Phillips. He has four guests: Chief medical

correspondent Dr. Bob Arnot, Bob McKeown, Keith Morrison, and chief consumer correspondent Lea Thompson. Mr. Phillips begins: "Most Americans don't know beans about soy, but that may soon change. The humble soybean is sprouting into the hottest new health food trend since oat bran, and for good reason. Scientists are learning that soy may help lower the risk of an amazing range of diseases."

Mr. Arnot then asks John Glaspy: "Which of these diseases could soy play a very positive preventive role? Heart disease?" Answer: Probably. Osteoporosis? Almost certainly. Menopause? Almost certainly. Breast cancer? Almost certainly.

Mr. Glaspy is most interested in breast cancer. He says that changing the way Americans eat could stop this killer. He believes that diet "could be a huge risk factor and could explain up to... 80 percent of breast cancer in the world."

Arnot adds that the first hint that soy may be a dietary factor begins in Japan. "Japanese women have one of the lowest breast cancer rates on earth. But when they move to Hawaii, leaving behind their native diet, their risk doubles. Doctors think the difference is soy."

Arnot says that "Debbie McCurdy is betting her future on soy. Diagnosed with breast cancer 2½ years ago, she has gone through surgery, chemotherapy, a bone marrow transplant and radiation. Now she's part of Dr. Glaspy's study to see if soy can protect her from a recurrence."

"Here's how doctors think soy works. In order for a breast cell to turn cancerous, it needs to be fed by strong hormones, like estroGen. But soy has what are called 'weak estrogens' that float through the blood and attach themselves to breast cells. That means, the strong, potentially harmful hormones have no place to attach to, and no way to turn a normal cell into a cancer cell."

"For the study, Debbie drank soy shakes three times a day and doctors took tissue samples to look for changes that might indicate the soy is working, but Debbie's not waiting for the results. Her family's menu has changed for good. They now eat lots of fruits and vegetables, as well as soy beans, miso soup, even tofu added to chili. And they seem to like it!"

3981. Farrell-Kingsley, Kathy. 1998. Celebrate summer. *Vegetarian Times* No. 250. June. p. 32. *

• **Summary:** Includes recipes.

3982. Japan Tariff Assoc. 1998. Exports of miso (bean paste): No. 2103.90-000. *Japan Exports and Imports: Commodity by Country*. June. No. 618. p. 83. [Eng; jap]

• **Summary:** For each country, gives the quantity and value for the current month, and for the cumulative year to date. Countries to which Japan exports large quantities of miso are (year to date in kg): USA 1,127,052. Taiwan 168,941. Hong Kong 156,221. South Korea 104,743. Total exported

this year: 2,235,149 kg. Address: 4-7-8, Kohji-machi, Chiyoda-ku, Tokyo 102-0083, Japan. Phone: 81-3-3263-7221.

3983. Shimbo-Beitchman, Hiroko. 1998. Magical miso. *Saveur* (New York, NY) No. 27. May/June. p. 100-08, 110, 112.

• **Summary:** A beautiful article, loaded with glossy color photographs (by Christopher Hirsheimer and Tom Wagner) and recipes. Photos show: (1) Shiromiso in a stylish bowl. (2) A Japanese worker, in clothing with traditional designs, stands on the rim of a miso vat and shovels what will become miso at Yamaki Jôzô, a miso brewery built in 1902 by the Kitani family, in Kamiizumi-mura, Honjô city, Saitama prefecture, 75 miles northwest of Tokyo, Japan (full page). *Yama* means “mountain, *ki* stands for Kitani, and *jôzô* means “brewery. Kazuhiko Morita is the brewery’s director. The company has been making three basic types of miso, plus shoyu and tofu, since 1902. Yamaki partially automated in the mid-1980s and today makes about 400 tons of a miso a year; it is not pasteurized and no alcohol is added in packaging as a preservative. (3) Looking down into a bowl of miso soup with tofu and wakame (full page). (4) The exterior of Yamaki Jôzô; a tree bearing bright orange persimmons stands in front of several traditional wooden buildings. (4) Hiroko Shimbo-Beitchman. (5) Mr. Morita, in traditional clothing, smelling the koji in a large, automated, stainless-steel koji incubation room. (6) The man shoveling the finished koji out of the incubation room onto a conveyor belt. (7) Eggplant Dengaku (with red and white miso, full page). (8) Walnuts being ground to a paste in a suribachi. (9) Steaming the soybeans at Yamaki Jôzô; 5,300 pounds of whole soybeans are steamed at a time. The company has two giant steel pressure cookers. For akamiso, the beans are cooked for about 7 hours until soft and yellow. (10) Cooling the cooked soybean on a conveyor belt. Most of the miso’s flavor comes from the beans; the aroma and sweetness come from the *kôji*. (11) Mixing the cooked soybeans and koji, with salt and a little spring water. Then the mixture is forced through a machine like a meat grinder to produce a smooth paste, which will ferment more easily than a chunky one. (12) Putting the ingredients for akamiso into 100-year-old cedar vats, which are covered with plastic sheeting then weighted. After several months it is moved to another set of barrels, then again a few months later. It can age for up to two years. (13) Three packages of commercial Japanese miso: akamiso, akadashi-miso, and shiro miso.

Recipes: Miso soup with tofu and wakame. Eggplant dengaku with two miso sauces. Green beans with miso dressing. Broiled miso-marinated black cod. Panfried miso-marinated beef. Steamed pork with mamemiso. A sidebar describes the different types of miso, with details on akamiso, mamemiso, and shiro miso. The company also

makes brown rice miso (unpasteurized), and a kit (with koji and instructions) for making your own miso at home.

Traditionally miso made at home was the source of great family pride. “*Temae miso desu ga,*” one would say—meaning “I don’t want to boast about my miso, *but...*” Today Japan’s 50 largest miso manufacturers control about 90 percent of the market. But miso connoisseurs prefer miso made by smaller companies in the traditional way; these are painstakingly preserving old-fashioned techniques and regional miso styles. Address: Teacher of Japanese cooking, Hiroko’s Kitchen, London, England. Phone: Fax: 44-171-289-0855.

3984. Yates, Ronald E. 1998. The story of the origins of Kikkoman in a woman named Shige Maki (Document part). In: Ronald E. Yates. 1998. *The Kikkoman Chronicles: A Global Company with a Japanese Soul*. New York, San Francisco & Washington, DC: McGraw-Hill. xviii + 206 p. See p. x-xi, 13-19, 62.

• **Summary:** Before we recount this story, we would like to say that we question its authenticity. Why was Shige Maki not mentioned in Mark Fruin’s classic 1983 history of Kikkoman titled *Kikkoman: Company, Clan and Community*, published by Harvard University Press? William Shurtleff asked Dr. Fruin in late 1998 if he had ever heard of Shige Maki and he replied “No.” Why has Soyfoods Center never heard this story before? Why does Mr. Yates provide no documentation to support this story—or the story that Kikkoman traces its origins back to 1630—for which we have never seen any credible evidence. We find this all very suspicious.

According to Mr. Yates, Kikkoman now traces its origins back to a woman named Shige Maki, who in 1615 was living in the Shadow of Osaka Castle, where her husband, Yorinori, was a samurai warrior (retainer) serving the warlord Hideyori Toyotomi. Hideyori (1593-1615), whose archrival was Ieyasu Tokugawa, was the son of Hideyoshi Toyotomi, one of Japan’s greatest warlords and a man credited with uniting Japan in 1590 by subjugating the five western provinces of Japan’s main island, Honshu. In 1586 Hideyoshi built the magnificent Osaka Castle—the largest and most impressive castle in Japan. For the next 5 years, Hideyoshi continued to consolidate his power via a series of battles and castle sieges. In 1591 he issued an edict establishing four distinct classes of people. At the top were samurai, followed by farmers, artisans, and merchants. That rigid social order lasted until 1868, when Japan’s emperor Meiji ended feudalism and ushered in the nation’s modern era. In 1597 Hideyoshi invaded Korea; he died there in 1598 during the campaign. His Japanese forces withdrew and in 1600 Ieyasu Tokugawa, a senior general in Hideyoshi’s army, seized power following the battle of Sekigahara when he defeated an army of Hideyoshi’s former vassals and retainers. This move was viewed as

betrayal by many of Hideyoshi's men. In 1603 Ieyasu was awarded the titled of shogun by the emperor; he was the first of Japan's powerful line of Tokugawa shoguns that would rule Japan virtually unchallenged until the mid-1800s when Commodore Matthew Perry of the United States and his squadron of black ships forced Japan to open its doors to global politics and commerce.

The Toyotomi family, now led by 19-year old Hideyori, vowed revenge on Ieyasu Tokugawa. Shige Maki and her husband, Yorinori, supported Hideyori. But in June 1615 Hideyori was defeated at Osaka Castle. Yorinori committed suicide; Shige Maki and her young son, Heizaburo, escaped from the castle and fled. For 15 years the two were on the run. "Eventually, Shige Maki and Heizaburo settled in the small farming community of Noda, about 30 miles north of Edo (now Tokyo). In the interim they had changed their name from Maki to Mogi, with Heizaburo altering his first name to Shichizaemon. No descriptions of Shige Maki exist, but she must have been one tough and resourceful lady. Not only did she survive the bloody battle of Osaka Castle and outwit the shogun's henchmen, but she spent years working in the rice fields of Noda" (p. 13-17).

On pages x-xi the author tells the end of this story somewhat differently: Because Shige Maki and "all others who had supported Toyotomi were on Tokugawa Ieyasu's death list, she changed her name to Mogi and blended in with the rice farmers in the area [of Noda]. For 15 years, she and her son cultivated rice and in the process learned the craft of brewing *shoyu*—the Japanese word for soy sauce... Using her new name of Mogi, the resourceful woman... made some refinements in the production process and more than 300 years ago began making the product that the world today knows as Kikkoman."

Continuing on p. 19: "Among the earliest recorded shoyu producers in Noda were Hyozaemon Takanashi and Shichizaemon Mogi [Shige Maki's son]. Local records show that Takanashi was producing fermented shoyu in 1661, while the Mogis were making miso [by 1662].

"A year later, on August 22, 1662, some 47 years after she had escaped from the ruins of Osaka Castle, Shige Maki died. There is no doubt that if Shige Maki had not been as intrepid and resourceful as she was, there would be no Kikkoman Corporation today."

On page 62 Yates tells this story with still another twist: "When Shige Mogi (nee Maki) and her son Shiroemon [sic, Heizaburo] began making miso and shoyu in Noda in the 1600s, it was still very much a farmhouse industry."

Note 1. Soyfoods Center believes, based on three detailed histories of Kikkoman published in Japanese, plus the excellent research of Mark Fruin and others, that Kikkoman cannot trace its connections with soy sauce back farther than 1661, when Hyozaemon Takanashi started to make shoyu in Noda. We want to emphasize that there was no connection between the Takanashi and Mogi families

until 1768 (more than 110 years after Hyozaemon Takanashi started to make shoyu in 1661). Mr. Yates presents no evidence that Shige Maki or her son ever made soy sauce (shoyu).

Mr. Yates continues (p. 19-20): In 1768 the eldest son of the Hyozaemon Takanashi clan married the "daughter of the fifth generation of the Shiroemon [sic, Shichizaemon] Mogi line. This was to be only the first of a series of alliances between the Mogi and Takanashi families."

Note 2. According to Fruin (1983, p. 16) Shichizaemon Mogi started to make miso in Noda in 1662. This was the Mogi family's earliest connection with foods or condiments made from soybeans. Address: Head, Journalism Department, Univ. of Illinois (Urbana).

3985. Cheney, Susan Jane. 1998. Taking the mystery out of miso. *Vegetarian Times* No. 251. July. p. 28. *

• **Summary:** This is a re-print of an article by the same author with the same title first published by this magazine in March 1995.

3986. Leading Edge Group. 1998. The health and natural food market: Past performance, current trends, and strategies for the future. 2171 Jericho Turnpike, Suite 200, Commack, NY 11725. 330 p. July. Price \$1,995.00. *

• **Summary:** Three past editions of this report have been published by Business Trends Analysts, Inc. (BTA), which is located at the same address as The Leading Edge Group. BTA is the parent company. Since it was founded 20 years ago, it had published reports under two brand names, each of which has a different style. Business Trends Analysts Reports tend to contain mostly secondary research, with an abundance of charts and graphs, and less text and analysis. Leading Edge Reports are conducted by a person with a specialty in that area. The report contains much more primary research and in-depth analysis, and is roughly twice as expensive. This report was conducted by Melina Laverty.

Chapter 5 of this report is titled "Soyfoods and alternative meat products: Market dynamics.

Overall report—Contents: 1. Executive summary. 2. Overall market dynamics (including Soyfoods). 3. The market for soy foods. 4. The market for herbal teas. 5. The market for dairy foods. 6. The market for grains and cereals. 7. The market for frozen foods. 8. The market for snack foods. 9. The market for groceries. 10. The health food consumer. 11. The health/natural food store industry. 12. Competitor profiles. 13. Industry directory. Address: Commack, New York. Phone: 516-462-2410.

3987. Robertson, Robin. 1998. The soy gourmet: Improve your health the natural way with 75 delicious recipes. New York, NY: Penguin/Putnam/Dutton. xv + 191 p. July. Introduction by James W. Anderson, M.D. Index. 21 cm. A Plume book.

• **Summary:** Contents: Foreword. Introduction: Health benefits of soy protein, by James W. Anderson, M.D. 1. The soy solution. 2. Soy what? (soybeans, tofu, tempeh, textured soy protein or TVP, soy milk, miso, soy sauce, soy flour, dry-roasted soybeans or soy nuts, soy convenience foods, egg replacers). 3. Making soy protein work for you. 4. Breakfasts. 5. Let's do lunch. 6. What's for dinner? 7. Desserts. 8. Shakes and more. 9. Sample menus. Glossary (In addition to the soy foods described at Chapter 2: Gomasio, soy cheese, soy protein powder, and tamari soy sauce).

The author, who is a woman, worked as a professional chef during the 1980s, when she used large quantities of meat, eggs, and dairy products to prepare dishes in classic cuisines, such as French and Italian. In 1987 she made a dramatic change in her life, when she decided to stop working in professional kitchens, and start to pursue a healthier lifestyle, becoming a vegetarian, eliminating all meat and dairy products from her diet. Having lost both parents to heart disease and stroke, she had a personal interest in helping people learn how to cook and eat properly. Using soy products such as tofu, tempeh, and soy milk, she was able to recreate her favorite old recipes—sautéed dishes with cream sauces, rich pasta dishes, and even delicious cheesecakes—all without cholesterol. But these soy foods actually offered a double benefit, for recent scientific studies show that they actually reduce cholesterol levels.

3988. Fujimori, Ikuo. 1998. Japan's position on genetically enhanced soybeans. *Canadian Soybean Technical Bulletin (OSGMB, Chatham, Ontario, Canada)* 4(1):3. Aug.

• **Summary:** Japan needs more time and information to discuss this matter seriously. Some consumers and consumer groups are now very nervous regarding the use of these soybeans. Address: President, Takeya Miso Co. Ltd., Nagano, Japan.

3989. Ndugi Khotu, Aubry. 1998. Contribution a l'avant-projet d'une usine de production de *lait de soja* en poudre a Lubumbashi [Contribution to the rough draft for a factory for the production of soymilk at Lubumbashi, Congo]. Civil Engineer thesis, University of Lubumbashi, Polytechnic Faculty, Dep. of Industrial Chemistry. v + 154 + 16 p. Illust. 30 cm. [73 ref. Fre]

• **Summary:** Preface and dedication. Introduction. Part I: Review of the literature. 1. General information about soya and proteins: 1.1. The soybean (Botanical, origin and history, soybean production and commerce worldwide, soya in the Democratic Republic of the Congo {Congo, formerly Zaire}, structure and composition of soybean seeds, utilization of soybeans {with diagram}, food uses of soybeans {oil and meal, soy flour (4 types), soy concentrates and isolates, textured soy proteins {TVP,

thermoplastic extrusion, spun fibers}, soymilk, tofu, other uses (shoyu, miso, tempeh, yuba)}, industrial uses of soybeans {linoleum, plastics, paints, varnishes, etc.}). 1.2. Proteins (in the human body, in foods), the structure of proteins (amino acids, ionization and acid-base properties of amino acids), protein bonds, denaturation. 1.3. Soya proteins (glycinin or globulin 11S, globulin 7S, hemagglutinins or lectins, protein inhibitors and other antinutritional factors, amino acid composition of soy protein). 1.4 Factors affecting the food value of soya: Acceptability problem (food value of raw soybeans), intolerance to soy proteins, off-flavors in soya and their source, inactivation of lipoxygenase, other treatments affecting the food value of soya: Alkalis.

2. Preparation and properties of soymilk. 2.1. Properties. 2.2. Advantages and disadvantages of soymilk compared with cow's milk. 2.3. Preparation. 2.4. Commercial / industrial production using the Alfa-Laval process.

3. Reminder of certain operations required for the preparation of soymilk powder: 3.1. Homogenization. 3.2. pasteurization and sterilization. 3.3. Concentration by evaporation. 3.4. Drying by atomization. 3.5. economies of energy in dewatering operations.

4. Some ideas on the methods of sensory evaluation: 4.1. The different methods. 4.2. Results and interpretations.

5. Important ideas in the study of the market, in determining the capacity of production, and in the economic evaluation of a project: 5.1. Study of the market. 5.2. Determining the capacity of production. 5.3. Economic evaluation of a project, incl. estimating fixed capital by adding capital costs.

Part II: Experimental, industrial calculations, economic calculations. Introduction. 6. Origin and characterization of the raw materials, trials for inactivation of lipoxygenase. 7. Determination of the optimal conditions for the preparation of soymilk. 8. Results of pilot plant trials. 9. Market study and determination of the capacity of production. 10. Description and calculations for the installation. 11. Economic evaluation of the project. General conclusion.

Tables show: (1) Number of people that can be supported for 1 year by the production from one acre devoted to certain crops and animals. Fewest: Beef 190. Pork 319. Poultry 457. Most: Potatoes 5,329. Split peas 6,901. Soybeans 9,075. Algae 43,200–154,000. Yeast 3,275,000. (1.1) Leading soya producing countries in 1985 (worldwide, with area, production, and yield; USA, Brazil, China, Argentina, India). (1.2) Leading soya producing continents in 1985 (North and Central America, South America, Asia, USSR, Europe, Africa, Oceania). (1.3) Leading soya trading countries in 1985. Importers: Japan, Netherlands, R.F.A. (Republique Federal Allemagne = Germany), Spain, Italy. Exporters: USA, Brazil, Argentina, China, Paraguay. (1.4) Production of soya in the Congo, by province 1970-1978 (the leading producer by far in 1978

was Western Kasai). (1.5) Production of soya in Katanga [formerly Shaba, before that Elisabethville] (1990-1994; by far the leading producer is Tanganyika). 1.6 Total production of soya in the Congo (1,000 metric tons) from 1970-1995 (increased from 1.7 in 1970-74 to 18 in 1995). (1.7) Average composition of different parts of the soybean seed. (1.8) Physico-chemical composition of soybean seed (ranges and average). (1.9). Mineral content of soybeans. (1.10). Vitamin content of mature soybean seeds and soybean meal. (1.11) Fatty acid composition of soybean oil. (1.11A) Enzymes in the soybean: Lipoxidase, urease, lipases, beta-amylase. (1.12) Properties and characteristics of the water-soluble fractions of soybean seeds. (1.12A) Variations in the solubility of proteins from defatted soy flour at various pH levels. (1.12B) Amino acid composition of soybean protein. Address: Lubumbashi, Katanga Province, Congo.

3990. Ginsberg, Beth; Milken, Mike. 1998. *The taste for living cookbook: Mike Milken's favorite recipes for fighting cancer*. Santa Monica, California: CaP CURE. Distributed by Time-Life Books. 118 p. Illust. Index. 26 x 27 cm. [2 ref]

• **Summary:** This is a gorgeous, low-fat vegetarian cookbook in which about half the recipes use soy as a major ingredient. It is loaded with color photos (many full page), playful graphics, and good advice. Note: 100% of the proceeds from this book are used to fund prostate cancer research. The book is available at bookstores nationwide, or it can be ordered by dialing toll-free 1-877-884-5433 (LIFE). Contents: Introduction, by Michael Milken. Preface, by Beth Ginsberg. Four nutritional principles of CaP CURE to fight prostate cancer and other hormonal cancers: (1) Limit dietary fat to 15% of total energy intake (calories). (2) Eat 5 or more fruit and vegetable servings per day. (3) Consume 25 to 35 grams of dietary fiber a day. (4) Consume 40 to 60 grams of soy protein a day. "Americans have a five times higher incidence of prostate cancer than people living in Asia and eating a traditional diet. Soups. Exercise. Entrees. Soy and soybeans. Sandwiches and sides. Cruciferous vegetables. Breakfasts and shakes. Desserts. Healthy pantry. Afterword, by Donald S. Coffey, PhD, President of the American Assoc. for Cancer Research and Professor of Urology, Oncology, Pharmacology and Molecular Sciences, Johns Hopkins Hospital, Baltimore, Maryland: We are what we eat, how does food cause or protect us from cancer (ROS = reactive oxygen species), how did we lose our way?, how did our diet change ("The great apes were primarily vegetarian, consuming great quantities of vegetables that are high in fiber"), what should we do? About CaP CURE.

Soy-related recipes include: French onion soup (with soy cheese and soy sauce, p. 20). Broccoli potato soup (with grated nonfat cheddar-style soy cheese, p. 22). Shiitake

miso soup (with silken tofu and low-sodium tamari sauce, p. 22). Taco salad with a chili lime dressing (with 1½ lb fat-free soy meat, p. 26). Chinese roasted tofu salad (p. 33). Orange ginger dressing (with white miso and tamari, p. 33). Chef's salad with miso shallot dressing (and Soy Deli Slices, p. 34-35). Thousand island dressing (with tofu, p. 34-35). Chopped vegetable salad (with 1 cup edamame, p. 36). Teriyaki tofu bowl with Chinese vegetables (p. 40). Tofu dog casserole with a pretzel crust (p. 42). Soy and Soybeans (with a sidebar on "understanding tofu," p. 44-45). Lasagne with "soysage" (with fat-free vegetarian sausage, silken tofu, and soy cheese, p. 46). Spinach cannelloni with fresh tomato sauce (plus soy milk and low-fat tofu, p. 48-49). Vegetable fritatta with roasted tomato salsa (and 2 lb tofu, p. 54-55). Enchilada pie with ranchero sauce (and 1 lb soy cheese). Greek spinach pie in a phyllo nest (with tofu, p. 61; remake of spanakopita). Homemade vegetable pizza with soy cheese (p. 62-63). Vegetable reuben (with tempeh bacon strips, p. 68). Tofu egg salad sandwich (p. 72). New Deli (fat-free hot dog, p. 75). VLT with herb mustard (and fat-free tofu bologna slices, p. 76). Broccoli in soy cheese sauce (p. 78-79). Fruit shake (with soy protein isolate, p. 84). Blueberry banana multi-grain pancakes (with soy milk, p. 87). Strawberry shortcake (with soy milk, p. 96). Carrot cake (with silken tofu, p. 100-01). Devil's "fool" cake with cocoa frosting (plus silken tofu, p. 104). Tofu cheesecake with fresh berry topping (p. 106-07). Banana cream pie (with 3 cups vanilla soy milk, p. 108). Old fashioned chocolate pudding (with 2 cups cocoa soy milk, p. 109). Maple flan (with 2 cups soy milk, p. 110). Address: CaP CURE, 1250 4th St., Suite 360, Santa Monica, California 90401. Phone: 310-458-2873.

3991. Goldbeck, Nikki; Goldbeck, David. 1998. *The healthiest diet in the world: A cookbook and mentor*. New York, NY: Dutton (Penguin/Putnam Inc.). xiii + 561 p. Sept. Illust. General index. Recipe index. 25 cm. [840+* ref]

• **Summary:** This is an excellent book, with a wonderful title that lives up to its promise. Both authors are real professionals, with 25 years in the field. Contains extensive information about the importance of a wholefoods, natural foods diet, with plenty of fresh fruits, vegetables, beans, and soyfoods as sources of the many recently-discovered phytochemicals, which offer promising health benefits. The authors are fans of soyfoods, which are featured in both the text and recipes throughout the book.

In Part I: Goldbeck's Golden Guidelines, No. 5 is "Super Soy Foods" (p. 14-15) which encourages readers to "Make soy foods a regular part of your diet."

Part II is the recipe section, titled "In Nikki's kitchen: Healthiest diet recipes." The main soyfoods used in recipes are tofu (48 recipes!), tempeh (15), soy milk (14), miso (8), soybeans, whole dry (3), and soy flour (2). This book contains so many soy-related recipes that we cannot

possibly list all of their names. So here are two samplers of such recipes to give a feeling of their diversity, extent, and inviting names. (1) Salad dressings and salads: Creamy miso-mustard coleslaw (p. 178). Tofu mayonnaise (p. 190). Creamy tofu Russian dressing (p. 191). Creamy tofu ranch dressing (p. 191). Lemon-tahini dressing (with soy sauce, p. 192). Creamy miso-mustard dressing (p. 193).

(2) Tempeh recipes: Tempeh strips (p. 31). Tempeh breakfast links (p. 32). Baked Italian tempeh (p. 38). Tempeh burgers (p. 39). Skewered tempeh with orange-nut crust (mini kebabs, p. 61). Maple-pecan tempeh (p. 98). Baked corn-tempeh hash (p. 98-99). Picadillo (Latin American sloppy Joes with tempeh, p. 99). Tempeh mushroom stew (p. 100). Asian grill (with marinated tempeh, p. 101). Tempeh kebabs (p. 102). Shish kebab in a bag (p. 103). Tempeh-bean chili (p. 114-15).

In Part III: Mentor, one entire chapter is dedicated to soyfoods ("5. In praise of soybeans," p. 408-29). The contents of that chapter: Introduction. Soy's special assets. The phytochemical furor. Protein plus. Soy fiber. Vitamins and minerals. Soy concerns. Soy food selection (incl. Western-style dairy and meat alternatives; soy cheese, soy ice cream, "soy-based imitation meat"). Stick with traditional soy foods: Tofu, tempeh, soy milk, soy nuts, whole soybeans (incl. edamame or green soybeans), soy sprouts, soy flour, soy grits, soy sauce, miso, okara (soy fiber), natto. Soy for health: Introduction, cancer (breast, prostate, and other hormonally influenced cancers), heart disease, diabetes, osteoporosis, women and soy, infant feeding. Nikki's dialog boxes: Mixing and matching soy protein. Just because they call it "milk": Nondairy vs. dairy. The question of salt. How to acquire your anti-cancer soy intake. Twenty-five grams of soy protein a day?

Soybeans are also mentioned in Chapter 6, "The beauty of beans" (see p. 431, 434). The 43-page bibliography of current scientific information on the health benefits of foods is worth the price of the book.

In the chapter titled "Controversial carbohydrates" is a long section about the glycemic index of foods titled "G-Force: A new perspective on carbohydrates" (p. 280-89); it includes a 6-page table showing G-force [glycemic index] ratings for individual foods. "Foods with a high G-Force [55 and above, bad] raise blood sugar levels quickly; this is usually matched by a rapid rise in insulin. Foods with low G-Force cause blood sugar levels to rise gradually, in which case insulin is usually released more evenly." Foods that tend to have a high G-Force are: Desserts and sweets (doughnut 108, graham crackers 106), foods made from refined flours (baguette 136, bagel 103, white wheat bread 100), sweet and refined breakfast cereals (puffed rice 132, Cornflakes 119, Cheerios 106), sugars (maltose 150, glucose 137, sucrose 92). Foods groups that tend to have low G-force are: Fruits (apple 54, apple juice 58, orange juice 63, but watermelon 103), legumes (soybeans 25,

chickpeas 47), dairy products (yogurt 20, milk 46). vegetables (non-starchy). Address: Woodstock, New York.

3992. *Soya & Oilseed Bluebook*. 1998—. Serial/periodical. Bar Harbor, Maine: Soyatech, Inc. Peter Golbitz, publisher and editor. Frequency: Annual.

• **Summary:** Preceded by *Soya Bluebook Plus*. A directory and information book for the soybean processing and production industries. The first issue (shipped Sept. 1998) is subtitled "The annual directory of the world oilseed industry." On the cover, below a map of the world is printed the date "1999" in large letters, followed by "A Soyatech Publication." Crops featured on the front cover and inside are "soya, corn, cottonseed, canola, rapeseed, sunflowerseed, palm kernel, palm, coconut, and peanut."

Contents (the four main sections are marked with a fold-out tab): Translations of oilseed terminology (English, German, French, Spanish, and Portuguese). Organizations and government agencies: Complete listings by country. Oilseeds and oilseed products: White pages (Index, individual crops), catalog pages, yellow pages (complete company listing by country). Equipment supplies and services. Oilseed statistics. Oilseed reference: Oilseed glossary, standards and specifications, oilseed technical charts and tables. Indexes: Comprehensive index, internet address index, brand name index, advertiser index.

Soy-related terms appearing in the translation section (p. 9-15) are: (1) Oilseeds and products: dairy analogs, lecithin—edible, lecithin industrial, meat analogs, miso, organic soy products, soy distillate, soy fiber, soy flakes—defatted—edible, soy flakes—full fat, soy flour—defatted, soy flour—enzyme active, soy flour—full fat, soy flour—low fat, soy flour—roasted, soy flour—textured, soy grits, soy isoflavones, soy livestock feed, soy oil margarine, soy oil shortening, soy oil—crude, soy oil—edible, soy oil—hydrogenated, soy oil—industrial, soy oil—refined, soy oil-based fuel, soy protein concentrate, soy protein isolate, soy protein—hydrolyzed, soy protein—industrial, soy sauce, soy sterols & tocopherols, soy-based foods—other, soybean fatty acids, soybean hulls, soybean meal, soybean meal—full fat, soybean seed breeder, soybean seed (for planting), soybean soapstock, soybeans—food grade, soybeans genetically modified, soybeans—green vegetable, soybeans—identity preserved, soybeans—non-gmo, soybeans—organic, soybeans, whole dry, soymilk beverages, soymilk powder, soynuts, tempeh, tempeh starter cultures, textured vegetable protein, tofu & tofu products, tofu powder. (2) Equipment & services: Coagulants for tofu, soymilk & tofu processing equipment, sprouting equipment. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

3993. Byrd, Deborah. 1998. Soy what? Once-bland products touted as tasty, hearty protein sources. *Contra*

Costa Times. Oct. 21. p. G1, G9. [9 ref]

• **Summary:** Includes a brief review of nine new books that contain soy recipes, a discussion of the health benefits of soyfoods, a talk with William Shurtleff of Soyfoods Center, a glossary and brief description of several soyfoods (edamame, dry soybeans, tofu, tempeh, miso), and 5 recipes: Luscious lemon pie (with silken tofu). Tempeh simmered in red wine with *herbes de provence*. Tofu teriyaki. Chocolate velvet pudding (with silken tofu). Mushroom almond spread (with firm silken tofu). A huge color photo shows Chocolate velvet pudding in a stem glass with a sliced peach. Address: California.

3994. Oser, Marie. 1998. *Soy of cooking: Easy-to-make vegetarian, low-fat, fat-free, and antioxidant-rich gourmet recipes*. New York, NY: John Wiley & Sons. xviii + 264 p. Nov. Illust. Index. 23 cm. [55 ref]*

• **Summary:** The contents of this book is identical to that published by Chronimed in Oct. 1996. John Wiley & Sons began publishing it in Nov. 1998. Talk with Marie Oser. 2000. Oct. 4. The book is now in its 7th printing. John Wiley has excellent distribution and is doing a fine job with the book. Address: Agoura Hills, California 91391. Phone: 818-707-7353.

3995. Stepaniak, Joanne. 1998. *The vegan sourcebook*. Los Angeles, California: Lowell House. xvi + 352 p. Index. 24 cm. Special nutrition section by Virginia Messina. [196* ref]

• **Summary:** Contents: Preface. 1. Vegan roots. 2. The vegan identity. 3. The way the West was weaned. 4. Which came first? 5. Invisible oppression. 6. Environment in crisis. 7. Shooting the myths. 8. Animals and entertainment. 9. Science: Fact, fiction, or fantasy. 10. The compassionate consumer. 11. The body beautiful. 12. Ethics in action. 13. Of principle and practice. 14. Ascent and evolution. 15. Embracing the choice. 16. Reorienting the compass. 17. Challenges, gifts, and offerings. 18. The Vegan table. 19. Secret ingredients. 20. Vegan nutrition. Appendixes: 1. Vegan nutrition charts. 2. Menu planning using the Vegan food pyramid. 3. Special ingredients and Vegan recipes. 4. The Vegan lifeline: Resources and organizations. 5. Recommended reading. Bibliography.

Soy-related recipes or discussion: Soymilk (p. 188-89). Soy cheese, soy yogurt and sour cream (made from silken tofu), vegan cream, puddings, ice cream, and popsicles (p. 190-91). Use of tofu in place of eggs to bind or thicken (p. 192-93). Miso, tamari and shoyu (p. 256-57). Tofu, regular and silken (p. 258). Quinoa, seitan, tahini (p. 258). Sour cream and onion dip (with tofu, p. 275). Sesame-miso spread (p. 275). Tofu-vegetable spread (p. 277). Miso master dressing (p. 282). Curried tofu salad sandwiches (p. 290). Roasted vegetable pizza with tomato-tinged tofu (p. 300-01). Savory baked tofu (p. 302). Baked potatoes

Florentine (with tofu, p. 305). Tofu ricotta (p. 308). Vegan mayonnaise (with tofu, p. 310). Tofu sour cream (p. 310). Creamy fudge frosting (with tofu, p. 315). Address: Swissvale, Pennsylvania.

3996. Akihiro, Ito; Goto, T.; Yamanda, K.; Fujimoto, N.; Watanabe, H. 1998. Soy and cancer—Animal studies: Primary prevention of cancers by miso, soybean, and biochanin A on rodent tumors (Abstract). *American J. of Clinical Nutrition* 68(6S):1525S. Dec. Supplement. Address: Dep. of Cancer Research, Research Inst. for Radiation Biology and Medicine, Hiroshima Univ., Kasumi 1-2-3, Hiroshima 734, Japan.

3997. Elwell, Gaella. 1998. *About South River Miso Co. River Currents: News from South River Miso Company (Conway, Massachusetts)*. Winter. p. 1. Dec.

• **Summary:** “Twenty years ago this fall Christian and I acquired land here in Conway (South River Farm), bought the fledgling Ohio Miso Company, and learned we were expecting our first child. And that was only the beginning! Since that time, through the backing of family and the efforts of many good friends, we have built a shed for work horses, a cabin, a barn, another cabin, a traditional miso factory, and finally our own home, which is almost, but never quite finished. Our daughter Anni, now 19, is teaching English in Turkey. Isaiah, our second born, is fully into his freshman year at a nearby boarding school which leaves us with an empty nest. I review fondly the faces of so many young people who have lived and worked with us: 21 names come to mind. You all know who you are, and wherever you live now, you are the backbone of the living, breathing life at South River. Thank you.

“Currently we are blessed to have three exceptional young people living on, and working with the land: Arthur Lerner, Emily Kellert, and David Fisher. This summer their fine organic produce was sold at the local outdoor market. Our root cellar is so overflowing with carrots, rutabagas, giant leeks, and potatoes.

“Miso production is in full swing under the steady management of Yukio Doyama, now in his fourth season with us. He is energetically assisted by Andy Mathey who lives above the miso shop. They both share a great love of drumming.

“The friendly voice you hear on the phone when you call is Robin Cole, administrative manager, UPS shipper, and valued friend for fifteen years.

“Meanwhile, Christian has been put out to pasture... Gaella Elwell.”

Photos show: Christian and Gaella Elwell. Robin Cole. Andy Mathey (in a vat of miso). Yukio Doyama (scooping miso).

Other photos in this issue show: (1) “Making miso in the nourishing tradition.” Six steps: Cooking with wood fire.

Inoculating the steamed grain with koji starter culture. Two days later, harvesting the koji by scraping it from wooden koji trays; stagger-stacked koji trays are in the background. Cooling the soybeans in the treading trough (also called mixing box) with a stainless-steel mixing hoe after they've been cooked by wood fire for 20 hours. Scooping up raw miso, after the cooked beans have been mashed (by treading underfoot) and mixed with the salted grain koji. Miso aging in wooden vats. (2) View from the east in the fall showing the miso shop and home surrounded trees and bushes. In color, the sumac bushes in the foreground are brilliant red. (3) Stephen Jannetta, wearing a white hat and surrounded by steam, removing steamed grain from the cauldron. (4) Six eight-ounce glass jars of the company's miso.

Talk with Christian Elwell. 2000. Jan. 9. The cooked soybeans are still mashed by treading them underfoot—except in the case of sweet white miso, where a mechanized grinder is used. The person doing the treading wears cotton socks, then a plastic legging, then another layer of cotton socks over that. The treading trough, which is rectangular and located on the floor, resembles the box used for mixing concrete; it was built by Richard Kluding and Thom Leonard in Ohio. Christian estimates that he has walked about 3,000 miles in soft soybeans.

3998. *River Currents: News from South River Miso Company (Conway, Massachusetts)*. 1998. South River Miso Company mission statement: Life is sacred. Food is sacred. Winter. p. 10. Dec.

• **Summary:** “South River Miso Company is dedicated to the health and well being of all those it serves.

“We strive to produce and distribute the highest quality organic, unpasteurized miso and other traditional foods with the conviction that wholesome food can be our best medicine.

“We honor miso for its strengthening and rejuvenating qualities and promote its use as part of a healthy diet.

“Our aim is to create a fair-minded, open-hearted learning environment within our organization and to serve each customer honestly, warmly, and effectively.

“Our hope is that South River Miso Company and those it serves may evolve together towards greater fulfillment, wholeness and peace.

“June 1998.”

3999. Gotoh, T.; Yamada, K.; Yin, H.; Ito, A.; Kataoka, T.; Dohi, K. 1998. Chemoprevention of N-nitroso N-methylurea-induced rat mammary carcinogenesis by soy foods or biochanin A. *Japanese J. of Cancer Research (Gann)* 89:137-142. *

• **Summary:** Diets containing either 10% soybeans or 10% miso reduced mammary tumor numbers (tumors/rat) by roughly 50%, although there was little effect on tumor

incidence (percentage of rats in each treatment group developing tumors).

4000. Nikkan Keizai Tsûshin-sha (Nikkan Keizai News Agency). 1998. Miso no shuyô-meka [Japan's largest miso manufacturing companies]. Tokyo, Japan. 1 p. [1 ref. Jap]
• **Summary:** This table ranks Japan's top fifty miso manufacturers in descending order of volume produced. For each company it gives the company name, prefecture where the company is located, and tonnes (metric tons) of miso produced in 1993, 1994, 1995, 1996, and 1997.

The top ten companies (with their output in tonnes) for 1997 and 1998 are: (1) Marukome 77,000 / 81,500 (they do not export any). (2) Hanamaruki 38,800 39,200 (they export to Westbrae, Canada). (3) Kanesa 27,300 / 27,800. (4) Marusan-ai 26,230 / 26,800 (they export to Eden Foods). (5) Miyasaka Jozo 19,080 / 18,900. (6) Hikari Miso 14,700 / 16,000. (7) Yamajirushi 15,200 / 15,100 (they export to San-J). (8) Fundôkin Shoyu 13,900 / 14,100. (9) Ichibiki 13,100 / 13,000. (10) Takeya 12,000 / 11,500.

Also: (11) Marudai 11,300 / 11,400. (13) Nagano Miso 9,500 / 9,450. (16) San Jirushi Jozo 8,750 / 1,700. (25) Sendai Miso Shoyu 4,900 / ? (they export to Westbrae).

The total amount of miso produced in Japan by all companies was as follows by year (in tonnes): 1993–561,259. 1994–540,390. 1995–539,427. 1996–542,077. 1997–542,238. 1998–548,750. Address: Japan.

4001. Sugawara, Etsuko; Yonekura, Y. 1998. Comparison of aroma components in five types of miso. *Nippon Shokuhin Kagaku Kogakkai-shi (J. of the Japanese Society for Food Science and Technology)* 45:323-29. [Jap]*
Address: Japan.

4002. Beta homu kyokai [Better Homes Association]. 1998. Kantan tezukuri miso tekisuto [Easy homemade miso handbook] Tokyo: Beta homu kyokai. 48 p. 21 cm. [Jap]*
Address: Japan.

4003. Burnham, Trudie. 1998. Innovative soy cooking. Freedom, California: The Crossing Press. 95 p. No index. 15 x 18 cm.

• **Summary:** Contents: Preface. Introduction. Appetizers, snacks, and side orders. Salads. Dressings and toppings. Main dishes. Beverages. Desserts and treats.

The introduction begins: “Let's face it. In a society like ours, obsessed with fast, low-fat food, tofu is the ultimate answer.” This is a “user-friendly guide to a soya-based vegetarian diet. Many recipes are vegan, or use a minimum of dairy foods.

The glossary of ingredients includes kelp, kudzu, lecithin, mirin, miso, nutritional yeast, oils (use expeller pressed), sea vegetables, seeds (for eating and sprouting),

slippery elm powder, soy milk, soy sauce, soysage, sweeteners, tahini, tempeh, tofu, umeboshi plums, vinegars.

“Missing egg salad: I invented this and word seemed to travel fast and wide, because I saw it in a California deli a year later with the same name.” Address: New Zealand.

4004. Hayashida, Y.; Nishimura, K.; Slaughter, J.C. 1998. The importance of the furanones HDMF and HEMF in the flavour profile of Japanese barley miso and their production during fermentation. *J. of the Science of Food and Agriculture (London)* 78:88-94. *

4005. Keuneke, Robin. 1998. Total breast health: The power food solution for protection and wellness. New York: Kensington Publishing Corp. *

• **Summary:** Contains over internationally inspired 125 recipes, incl. Tofu Cote D’Azur, and Dilled Salmon in Miso-Lemon Sauce.

4006. Miso fūmi no okazu: kono kaori ga tamaranai [Side dishes flavored with miso: Their fragrance never ends]. 1998. Tokyo: Shufunotomo-sha. 95 p. 26 cm. [Jap]* Address: Japan.

4007. Rinzler, Carol Ann. 1998. The healing power of soy: The enlightened person’s guide to nature’s wonder food. Rocklin, California: Prima Publishing. xiv + 194 p. Illust. Index. 24 cm. [119 endnotes]

• **Summary:** Contents: Preface. Introduction: Not your ordinary bean, the first soybeans (history), how to talk soy (glossary of soyfoods—miso, soybean oil, soy concentrates, soy flour, soy isolates, soy milk, soy “nuts,” soy sauce {shoyu, tamari, teriyaki}, tempeh, texturized soy protein {TSP}, tofu). 1. The nutritional wonder bean: Vitamins, minerals, proteins, fats, carbohydrates, fitting soy into your diet, summing up. 2. Something special in the bean: Hormones and people and plants, fabulous phytoestrogens, the safety of phytoestrogens, summing up. 3. Soy and your heart: Heart Disease and its victims, cholesterol and your heart, soy versus cholesterol, soy’s cholesterol busters, beyond cholesterol, summing up. 4. Soy, the cancer fighter: The statistics of cancer, diet and hormone-related cancers, the Asian experience, how soy fights cancer, is soy safe?, a practical guide to your personal war on cancer, summing up. 5. Building better bones with soy: Your hormones and your bones, the hormone dilemma, soy and your bones, getting the calcium you need, summing up. 6. Hot news about hot flashes: What a hot flash is, soy and hot flashes, other plants that may relieve hot flashes, vitamins, minerals and hot flashes, simple lifestyle changes, summing up. 7. Cooking with soy: The joy of soy, whole soybeans, tofu, tempeh, texturized soy protein (TSP), soy flour, soy milk, soy sauces, soybean oil, miso. Appendix A: Shopping for soy through the mail. Appendix B: Directory of soy

manufacturers. Appendix C: Directory of soy researchers whose studies are included in this book. Sources.

The author has written seventeen books, including *Nutrition for Dummies* (IDG) and *Estrogen and Breast Cancer* (Hunter House Books). A frequent contributor to publications such as *American Health*, *Woman’s Day*, and the *New York Times*, she lives in New York.

Note: Another quick, generic book about soy and good health by one who is not very familiar with the subject—though the footnotes show that she consulted many publications; nothing new. The history chapter is full of errors. Address: New York.

4008. Sinclair, Charles Gordon. comp. 1998. International dictionary of food and cooking. Chicago: Fitzroy Dearborn. 594 p. See p. 234. 24 cm. *

• **Summary:** “*gochujang* (Korea): A chilli paste similar to sambal olek” (p. 234).

4009. Tohata, Asako. 1998. Tohata Asako no karada ni oishii miso no hon: misoshiru kara wafū no miso ryōri made miso no kenkō itadakimasu! [Tohata Asako’s book of miso that is tasty for the body: From miso soup to Japanese-style miso cookery. Let’s have good health with miso!]. Tokyo: Makino Shuppan. 79 p. Illust (color). 26 cm. Series: Makino Mukku Ryori Shirizu. [10+ ref. Jap]* Address: Japan.

4010. Wise, Victoria. 1998. The vegetarian table: Japan. San Francisco: Chronicle Books; London: Hi Marketing. 156 p. Illust. (color photos by Deborah Jones). 22 x 21 cm. Series: The Vegetarian Table.

• **Summary:** Contents: Introduction. Basic ingredients and seasonings for the Japanese table. 1. Appetizers and condiments. 2. Soups. 3. Rice. 4. Noodles. 5. Vegetables. 6. Sweets. Table of equivalents.

Ingredients include: Soybeans, soy sauce, tofu (incl. silken tofu, tofu puffs, grilled tofu), miso (red, white, yellow, brown, barley), fresh soybeans, dried soybeans (incl. black soybeans), soybean sprouts, freeze-dried tofu, soybean milk skin (yuba), and soybean curd pulp [okara]. Azuki beans, sea greens [sea vegetables incl. agar, kombu, nori, wakame], sesame seeds, umeboshi (pickled plums), wasabi, saké.

Contains too many soy-related recipes to list them all. The color photos and food styling are superb—perhaps the most beautiful we have ever seen in a cookbook.

Note: Other books in this series (all published by Chronicle Books) are: France, India, Italy, Mexico, and North Africa. Address: Oakland, California.

4011. Miso Health Building Committee. 1998? What’s miso? (Leaflet). Tokyo, Japan. 6 panels. Front and back. Each panel: 21 x 10 cm. [Eng]

• **Summary:** Contents: Types and classification of miso. How miso is made. Small color photos of 13 types of rice miso, one type of soybean miso (*Tokai mame miso*), and 3 types of barley miso. Miso's value as a health food: Lowers blood pressure, increases survival rate of mucous membrane interstitial cells after X-rays. Miso in Japan. Recipes for using miso. Address: White Building 603, 1-4-8 Tsukiji, Chuo-ku, Tokyo 104, Japan. Phone: 03-5565-6461-62.

4012. Miyasaka Brewery Co., Ltd. 1998? A guide to Shinsyuichi Miso (Brochure). Tokyo, Japan. 4 p. 30 cm. [Eng; Jap]

• **Summary:** A color brochure describing, in English and Japanese, the company's main varieties of miso and instant miso-soup. Color photos show: (1) A red lacquerware bowl of miso soup. (2) Miso Dengaku. (3) Grilled salmon with miso. (4) Miso stew. (5) All 10 products. Address: 2-4-5 Nogata, Nakano-ku, Tokyo, Japan. Phone: 03-3385-2121.

4013. Broadbent, Gretchen Priest. 1999. Pioneering work with tofu in the USA and Japan, 1946 to Aug. 1971. Part I (Interview). *SoyaScan Notes*. Jan. 6. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Gretchen Priest was born on 29 Oct. 1946 in Boston, Massachusetts. She grew up in Marblehead, Massachusetts—which is located on the Atlantic Ocean 15 miles northeast of Boston. While in high school there she decided (entirely on her own, for reasons she no longer remembers) to become a vegetarian—even though she had never heard the word “vegetarian.” She also began a lifelong interest in art. In Sept. 1964 she started to attend Goddard College (in Plainfield, Vermont) for one semester and was almost immediately introduced to the teachings of Kirpal Singh, an Indian Sikh master. “I went through a spiritual revolution, along with many friends.” She was very sensitive and began to have spiritual experiences. At Goddard she met her husband to be, Jeffrey Broadbent, in an art class. Art is Gretchen's passion. They both found the first day of class boring, so separately they snuck out. Gretchen found the paints in the back of the room and, before they had met or spoken to each other, they ended up painting each other faces. When the teacher saw them after the class he exclaimed, “Now that's art!” At that point, Jeffrey and Gretchen introduced themselves to one another.

After the 3 months, Goddard had a work term. Gretchen went to California and experimented with psychedelics. Now all she wanted was to live a spiritual life.

Returning to Vermont in the early summer of 1965, she entered the Kirpal Ashram in Calais (pronounced KAL-us), Vermont. Only one person was living and meditating there at the time, Nina Gitana, age 37, the caretaker. The ashram was part of land and a trust that had been donated to Kirpal Singh for use as a retreat for his practices and teaching. Vegetarianism was a very important part of Kirpal Singh's

teachings, so Nina was a vegetarian. But she did not know much about preparing vegetarian foods; a diet of fruits and juices was not giving her the strength she needed. The day Gretchen arrived, Nina left to go to Boston, where she met Michio Kushi (and maybe George Ohsawa) and began to study macrobiotics. When she returned to the ashram, she taught Gretchen what she had learned and they both began to follow a vegetarian macrobiotic diet. It felt good, and Nina's strength returned. Gretchen soon became the cook. She did not use any macrobiotic recipe books, though she did study a book of macrobiotic principles. Their first basic foods included brown rice and miso, but Gretchen also prepared lots of chapatis and brown rice croquettes (regular or deep-fried). During the cold months she cooked for the two of them (and often a neighbor), but during the summer she cooked and cared for 15-20 people. It was very difficult to get macrobiotic or natural foods in those days, so they would periodically make the 5-hour drive to buy food in Boston. They would buy most of their foods at Michio's house (where they were stored in little bags on plain wooden shelves), and in this way Gretchen came to know Michio and Aveline. But they would go to Boston's Chinatown to buy tofu; it was considered a very special treat at the ashram, served only 3-4 times a year. Considered an excellent source of protein and easy to digest, it quickly disappeared—in part since it was very perishable, but also because it balanced the very *yang* daily diet. One winter Gretchen moved to Boston to earn money (odd jobs, including work at a hospital) and study macrobiotics while Nina stayed at the freezing cold ashram. Michio Kushi gave a special series of Sunday classes to teach macrobiotic philosophy to Anne Lynn, her husband, one other person, and Gretchen; these were not cooking classes. Michio and Aveline visited the ashram for a day several times. On one visit, Michio brought his father and mother.

In 1971, after 6 years at Kirpal Ashram, Gretchen left to marry Jeffrey Broadbent. Jeffrey had been practicing Zen meditation for several years as a disciple of Suzuki roshi at Tassajara Zen Mountain Center, deep in the Santa Lucia Mountains south of Carmel Valley, California. One of Jeffrey's close friends and roommate at Tassajara was William Shurtleff, who was also a disciple of Suzuki Roshi. While he was at Tassajara, Katagiri roshi encouraged Jeffrey to go back to college and finish his education. So he enrolled at the University of California at Berkeley, where he studied Chinese language. At some point he switched from Chinese to Japanese at Suzuki roshi's recommendation. Then Jeffrey applied for U.C. Berkeley's Junior Year Abroad program in Japan. Right after he was accepted, he wrote Gretchen at the Vermont ashram: “I'm going to Japan. Please marry me and let's go together.” She accepted. Jeffrey and Gretchen stayed together for a month and a half at the Berkeley Zendo, then were married

on 13 June 1971 at the San Francisco Zen Center by Shunryu Suzuki roshi in a large ceremony.

Ten days after the marriage ceremony, Jeffrey and Gretchen arrived in Japan. He had been enrolled in the intensive Japanese language course for foreigners at International Christian University (ICU) in Mitaka, just east of Tokyo. Before the school year started, they participated in the ICU summer program, where all the new students traveled to the Kumano-Nachi shrine and Nachi waterfall at the southeastern tip of the Wakayama peninsula. The program was designed to introduce the foreigners to Japanese language and culture.

Soon after arriving at Nachi, they wrote William Shurtleff, who was now taking an intensive Japanese language course at the *Nihongo Gakko* (Japanese Language School) in Kyoto and living in the home of one of his Japanese teachers. They invited him to visit them for a week at Nachi when his school semester was finished. On 1 August 1971 Shurtleff hitchhiked south and they had a nice reunion, practicing meditation together and enjoying the beautiful mountain scenery for about a week. Then Jeffrey and Gretchen went to ICU near Tokyo and Shurtleff returned to Kyoto.

At ICU, Jeffrey and Gretchen rented a small and austere Japanese-style apartment located just off campus, about 10 minutes walk away, c/o Yoda Yoshiko, Koganei-shi, Higashi-cho 1-25-13, Tokyo, 184. The two-room apartment consisted of a small kitchen (with two table-top propane burners and a sink, but no refrigerator), a minuscule toilet chamber, and a combination living room / bedroom (6-8 tatami mats in size). Outside the sliding window was a tiny porch for airing bedding and drying clothes. Jeffrey recalls that there was one small kerosene heater in the apartment; it was used only on very cold days—to save money. But Gretchen recalls that there was no heater at all. Continued. Address: RFD 1, Box 100, East Calais, Vermont 05650. Phone: 802-456-7091.

4014. Wasserman, Debra; Mangels, Reed. 1999. *Simply vegan: Quick vegetarian meals*. 3rd ed. Baltimore, Maryland: Vegetarian Resource Group. 224 p. Illust. General index. Index of tables. Jan. 23 cm. 1st ed. March 1991. 2nd ed. June 1995. [29 ref]

• **Summary:** More than a cookbook (with over 160 vegan recipes that can be prepared quickly), this is a guide to a non-violent, environmentally sound, humane life-style. Contents: Acknowledgments. Definition of vegan. Foreword. Time-saving cooking suggestions: Microwave cooking. Introducing fat as a percentage of daily value. Sample menus: Menu analysis. Top recipes for calcium and vitamin C. Top recipes for iron. Recipes: Beverages, breakfasts, sandwiches, snacks, salads, soups, side dishes, main dishes (pasta dishes), soy products (tempeh dishes, tofu dishes), desserts. Food definitions. Herbs and spices.

Vegan nutrition: Introduction, nutrition is a science, recommendations for vegans, calories, weight gain, and weight loss, protein, fat, calcium, iron, zinc, vitamin D, riboflavin and vitamin B-6, vitamin B-12, sources of vitamins and minerals, pregnancy and the vegan diet, lactation and the vegan diet, feeding vegan kids, nutrition glossary, recommended reading list. Cruelty-free shopping by mail: Vegan food through the mail, cruelty-free cosmetics, environmentally sound household products, clothing containing no animal products, personal care vegan products, educational materials, vegan books and cookbooks, vegetarian groups and internet resources. The vegetarian resource group. Address: Vegetarian Resource Group, P.O. Box 1463, Baltimore, Maryland 21203. Phone: 301-366-8343.

4015. Jack, Alex. 1999. *Let food be thy medicine: 750 scientific studies, holistic reports, and personal accounts showing the physical, mental, and environmental benefits of whole foods*. 3rd ed. Becket, Massachusetts: One Peaceful World Press. 304 p. Index. 23 cm. [8 ref]

• **Summary:** This book, organized alphabetically by subject, is a very original and creative source of information, with hundreds of interesting bibliographic references. The author believes in a natural, whole-foods diet. Includes the following subjects: Alternative medicine, amasake (amazake), Asia Diet Pyramid, azuki beans, bovine growth hormone, cancer, cholesterol, coffee, complex carbohydrates, dairy food, estrogen, evolution, exercise and fitness, fats, fiber, genetically engineered food, genetic model of health and disease, genistein, global warming, heart disease, hiziki, hunza diet, isoflavones, Japanese diet, kombu, kuzu, lignans, longevity, macrobiotics, Mad Cow Disease, meat, menopause, microwave cooking, miso, mochi, natto, nori, osteoporosis, Paleolithic diet, phytochemicals, phytoestrogens, polyps, potatoes, Price-Weston, prostate cancer, protein, rice, Schweitzer-Dr. Albert, sea vegetables, seitan, sesame, shoyu, soy foods, tempeh, tofu, umeboshi plum, vegans, vegetarians, wakame, wartime restricted (diets, incl. World War I and II), whole grains. Resources. About the author. Address: Box 10, Becket, Massachusetts 01223. Phone: (413) 623-5742.

4016. Stevens & Associates, Inc. ed. and comp. 1999. *U.S. 1999 soyfoods directory*. Lebanon, Indiana: Indiana Soybean Development Council. 48 p. 28 cm. [23 ref]

• **Summary:** This is the fourth edition of the U.S. Soyfoods Directory. Page 2 states: "And a special thanks goes to the Soy Protein Partnership for sponsoring this project." For a list of farmers and companies that grow soybeans organically, see p. 28. This 1999 Soyfoods directory is now available online at www.talksoy.com. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

4017. Efron, Sonni. 1999. Japanese choke on American biofood: Genetically altered produce reaps opposition. But moves to label it threaten \$11 billion U.S. sales. *Los Angeles Times*. March 14. p. A1, A8.

• **Summary:** Japan is one of several nations that have proposed labeling “bioengineered food to give consumers the freedom to reject it.” American trade groups say the Japanese are being protectionist. Address: Staff writer.

4018. Kushi Institute. 1999. Kushi Institute store: Food, books, kitchenware, bodycare, video, audio. Spring/summer 1999 (Mail-order catalog). Becket, Massachusetts. 40 p. 28 cm. [8 ref]

• **Summary:** A good new source of macrobiotic supplies. Includes: Amazake (from Kendall Food Co.), arame (sea vegetable), azuki beans (from Hokkaido {Japan} and organic), barley malt, black soybeans (from Hokkaido and USA), dulce, fu (dried wheat gluten), hato mugi [hatomugi], hijiki, kanten flakes, koji, kombu, kuzu, mirin, miso, mochi (organic, Kendall), natto (organic, Kendall), natto miso, nori, rice syrup, sea palm, sea vegetable kit (8 varieties), shoyu, suribachi, tamari, tekka, tofu—dried, tofu kit, umeboshi, umeboshi concentrate, wakame, yuba. Address: P.O. Box 500, Becket, Massachusetts 01223-0500. Phone: 1-800-645-8744.

4019. Liu, KeShun. 1999. Oriental soyfoods. In: C.Y.W. Ang, K. Liu, and Y-W. Huang, eds. 1999. *Asian Foods: Science & Technology*. Lancaster, Pennsylvania: Technomic Publishing Co., Inc. Chap. 6. March. *

• **Summary:** Contents: Introduction. Soymilk. Tofu. Soymilk film (Yuba). Soybean sprouts. Green vegetable soybeans. Other non-fermented soyfoods. Fermented soy paste (Jiang and miso). Soy sauce (Jiangyou or shoyu). Japanese natto. Indonesian tempeh. Soy nuggets (Douchi or Hamanatto). Address: PhD, Soyfoods Lab., Hartz Seed, A Unit of Monsanto, Stuttgart, Arkansas.

4020. *Shape*. 1999. Breaking the soy barrier. 7(17):126. March. *

• **Summary:** Includes recipes.

4021. Jacobi, Dana. 1999. Buono appetito! Soy makes hearty Italian classics healthy. *Vegetarian Times*. April. p. 36, 38-40, 42. No. 260.

• **Summary:** Recipes using eight soyfoods to make one Italian dinner—a veritable soy feast. The recipes are: Herb pesto (with white miso, dairy-free). Soy minestrone (with edamame). Sicilian stuffed squash (with TVP flakes and grated soy Parmesan cheese). Pasta al forno (with fat-free Italian sausage, and white miso). Chocolate almondi biscotti (with soy flour). Italian ‘cheese’ pie (with extra-firm tofu and soy margarine). Address: Food writer, New York, NY.

4022. Simonds, Nina. 1999. *A spoonful of ginger: Irresistible, health-giving recipes from Asian kitchens*. New York, NY: Alfred A. Knopf. xii + 322 p. April. Illust. Index. 24 x 21 cm. [53 ref]

• **Summary:** This beautiful hardcover book and cookbook, printed on glossy paper with many color and black-and-white photos, looks at food in two ways: As medicine, and as the source of delicious recipes. The Asian holistic approach is relaxed and non-rigid; it emphasizes balance. Soyfoods appear throughout. Tofu is used to “increase body energy, produce fluids, and lubricate the system. It is said to have yin, or cooling, properties” (p. 23). Miso chicken soup with snow peas and tofu (p. 34). Grilled miso fish fillets (p. 66). Pan-seared halibut with garlicky black bean sauce (“Seasonings: 3 tablespoons fermented or salted black beans, rinsed, drained, and minced, 2 tablespoons minced garlic, 2 tablespoons minced fresh ginger,... p. 71; “Black soybeans have been used by the Chinese for medicinal purposes for over 2,000 years”). Baked black bean shrimp (with fermented black [soy] beans, rinsed and drained, ginger, garlic, and dried chile [chili] flakes, p. 75). Stir-fried saucy shrimp (with sweet bean sauce or *jiang*, one of the earliest Chinese seasonings; if unavailable, substitute hoisin sauce, p. 81). Grilled hoisin scallops (with ½ cup hoisin sauce, p. 83). Spicy grilled squid with warm greens (with ½ cup hoisin sauce, p. 86-87). Broccoli or cauliflower with a soy-lemon dressing (p. 173). Grilled leeks in a garlic-soy dressing (p. 174). Grilled wild mushrooms with a teriyaki dressing (p. 178). Black bean acorn squash (with fermented black [soy] beans. Describes how to make “black bean sauce,” p. 179).

One chapter, titled “Soybeans and tofu” (p. 192-215), begins with a discussion of the work of Dr. Albert Leung, author of various books on Chinese herbs and food, and creator of a computerized database on Chinese herbal medicine for the National Cancer Institute. “Like a growing number of doctors, Dr. Leung feels strongly that an integrated approach should be taken in the treatment of many diseases, one that draws from the strengths of both conventional and alternative therapies. He also concurs with Henry Lu that fortifying the immune system is critical to good health. ‘Our immune system is the key to health and longevity and there are many factors that throw off our yin/yang balance,’ Dr. Leung says. ‘When this happens, Traditional Chinese Medicine often uses herbal tonics and food to help restore the balance.’

“Tofu is such a food. Chinese doctors classify its nature as cool and sweet. It is credited with clearing heat from the body, detoxifying the system, and strengthening the spleen and stomach.”

A full-page color photo (p. 192) shows tempeh being fried. Simonds notes that the earliest known recorded use of

black soybeans dates back to the middle of the eighth century.

A table titled “Soybeans and their byproducts” (p. 196) lists ten products, how each is used, and how long they will stay fresh in a refrigerator. The foods are: Fresh soybeans [as a green vegetable appetizer], soybean sprouts, miso, soybean milk, silken tofu, soft tofu, firm tofu, extra-firm tofu, 5-spice pressed tofu, and tempeh. Recipes are from many Asian countries”: Japanese-style silken tofu. Soybean sprouts and leeks in hot chile sauce. Rainbow salad with spicy peanut dressing (and tofu). Spicy garlic bean curd noodles. Vegetarian roll-ups (with tofu). Fragrant steamed pearl balls (with tofu and glutinous rice). Spicy ma po tofu. Cantonese style tofu in black bean sauce (incl. fermented black beans, garlic, ginger and hot chile paste). Vegetarian kung pao with broccoli and peanuts (with tofu. Note: Kung pao is a style of food preparation associated with Szechuan and Hunan). Curried tofu. Braised cinnamon tofu. Simmered tofu with black mushrooms. Fried tempeh with sweet and sour sauce. Spicy stir-fried tempeh with basil. Ginger teriyaki tempeh.

Also: Chicken-black bean brown rice (with fermented black [soy] beans, garlic, and fresh ginger, p. 231; Dr. Albert Leung says that making fermented black beans is a complicated process, in which small black soybeans are first soaked in water with mulberry leaves and wormwood herb, then they are fermented with salt). Vegetarian pad thai (with tofu, p. 245). Almond soy jelly with litchees and melon (with soy milk, p. 266). Two-spice vanilla tapioca pudding (with soy milk, p. 269; Soy milk lubricates the body, clears the lungs, and is often prescribed for urinary disorders and constipation). Coconut rice pudding with berries (with soy milk, p. 272). Address: Salem, Massachusetts.

4023. Product Name: Organic Miso Tamari.
Manufacturer’s Name: American Miso Co., Inc.
Manufacturer’s Address: 4225 Maple Creek Rd., Rutherfordton, NC 28139. Phone: 828-287-2940.
Date of Introduction: 1999. May.
Wt/Vol., Packaging, Price: 5 oz or 10 oz bottle.
How Stored: Refrigerated.
New Product–Documentation: Talk with John Belleme. 1999. Nov. 18. This product was first sold in about May 1999, but it did not appear in the Great Eastern Sun catalog until November.

4024. Nilsen, Laura. 1999. The best to soy. *Veggie Life (Concord, California)*. May. p. 22-28.

• **Summary:** Their “Cooking with Soy” department debuted in May 1996. This article begins: “Soy is hot. Like a cult movie that eventually shows up on prime time TV, soy has become a mainstream American commodity, an ingredient in everything from hot dogs to apple pie... The boom goes on, and for good reasons–Nutrition and taste; versatility and

economy... It’s no fairy tale–soy is a magic bean worth swapping a cow for.” This article is a collection of recipes from other sources, or from back issues of *Veggie Life*. Address: Food editor, *Veggie Life*.

4025. *River Currents: News from South River Miso Company (Conway, Massachusetts)*. 1999. Have you tried our tamari? Spring. p. 1.

• **Summary:** Miso tamari is the precious, rich liquid that collects in large pools in a vat of miso. “It takes over 2,000 pounds of miso to yield about 5 gallons of miso tamari. Our unpasteurized miso tamari is like liquid gold!... Because of its limited supply, this miso tamari is not commercially available except by direct purchase from South River. We ship miso tamari in sturdy plastic jugs but suggest you transfer it to glass. A recycled wine bottle makes an elegant container for this wonderful treasure.”

4026. *River Currents: News from South River Miso Company (Conway, Massachusetts)*. 1999. South River Miso Company: Price list–March 1, 1999. Spring. p. 5.

• **Summary:** Varieties of miso—all certified organic: (1) Three year dark miso (aged for a minimum of three full summer seasons): Hearty brown rice (with black soybeans & brown rice), Three-year barley, Black soy barley, Chick pea barley (with barley & chick peas). (2) One year light miso (aged for a minimum of one summer or three months): Sweet tasting brown rice, Chick pea, Azuki bean (with brown rice & azuki beans), Golden millet (with millet and soybeans). Special miso: Dandelion leek, Sweet white miso. Also: Miso tamari, Brown rice koji, Miso samplers.

Beautiful color labels for the 16 oz. package of eight of these miso varieties were sent with the newsletter by Robin Cole of South River.

4027. Schinner, Miyoko Nishimoto. 1999. Japanese cooking: Contemporary & traditional–Simple, delicious, and vegan. Summertown, Tennessee: Book Publishing Co. 176 p. Illust. Index. 21 cm.

• **Summary:** Contents: Introduction (incl. Japanese attitudes towards nutrition, vegetarianism and animal rights, the recipes, the Japanese meal). Sample menus (by season). Glossary: Ingredients, kitchen concepts, and tools. Rice dishes. Soups and stews. Cooking with tofu. Fried dishes. Salads and cold vegetables. Noodles. Meals in a pot. Stewed and braised dishes. Meals in a bowl. Everyday favorites. Nouvelle Japanese cuisine.

Terms in the Glossary include: Abura-age, agar agar, atsu-age, azuki, fu (made from wheat gluten), goma (sesame seeds), goma-dofu (a tofu-like cake made from sesame butter), hijiki, Inari-zushi (sushi), kanten, konbu, kuzu & kuzu-ko, miso, mochi, natto, nori, okara, sesame oil (goma abura), shoyu, soba, soy sauce, tofu (“Perhaps the most misunderstood food in Japan... American might call it bland;

the Japanese prefer to think of it as delicate in flavor”), umeboshi, wakame, yaki-dofu, yuba.

This vegan cookbook is filled with many soy-related recipes, both traditional and new. Examples of new: “Fishy Tempura Tempeh. Crispy Fried Tempeh (Kara-Age).

“Trying to dine out in a strictly vegan fashion in Japan can present challenges. Although dairy products are not found in traditional Japanese cuisine, fish-based stocks appear in a range of dishes from appetizers to soups to entrees... My advice to vegan or vegetarian visitors to Japan: find a temple or restaurant that serves traditional *kaiseki*-style *shojin-ryori* (Buddhist vegetarian cooking)—and splurge big time. You won’t regret it” (p. 10).

On the rear cover is a biographical sketch of Miyoko. “She was born in Yokohama, Japan, and graduated from St. John’s college in Maryland. Her bilingual bicultural background has endowed her with the creativity and originality of the West and the aesthetic sense of the East.” She has been a vegetarian since age 12. Address: Owner, Now and Zen Bakery and Vegetarian Restaurant, San Francisco.

4028. Shurtleff, William; Aoyagi, Akiko. 1999. The book of tofu. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 336 p. May. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [321 ref]

• **Summary:** This edition contains a completely new “Appendix B—Directory of Tofu Makers” (p. 313-316, updated to 1 Aug. 1998). The page “About the Authors” (autobiographical) has been updated, and the original photograph has been replaced with two more recent ones—reflecting the fact that Bill and Akiko separated in Nov. 1993 and their marriage ended in May 1995.

After the first printing in Oct. 1998, the Preface was quite extensively revised (but not updated) to include more about how this book came into being (early dates and names), including the important contributions on Jeffrey and Gretchen Broadbent, and of Nahum and Beverly Stiskin. These Preface changes first appeared in the second printing of May 1999.

On page 336 is “The Best of Vegetarian Cooking from Ten Speed Press” (descriptions of eight cookbooks, with price and ISBN). The inside rear cover has been updated, and now includes current information about SoyaScan, the unique computerized database produced by Soyfoods Center. This database now contains more than 55,000 records from 1100 B.C. to the present, and more than 73% of all records have a summary / abstract averaging 128 words in length. A description of the four different types of records (published documents, commercial soy products, original interviews and overviews, and unpublished archival documents), and the number of each type, is given.

The front and rear covers, title page, table of contents, and the first page of each section have been redesigned to

give the book a much more contemporary look. Still contains 500 vegetarian recipes—both western and eastern style.

Ten Speed Press gave this book a new ISBN: 1-58009-013-8. Yet despite the many changes described above, the authors preferred not to have this called a “new edition” or “revised edition.” Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

4029. **Product Name:** Miso Tamari (Unpasteurized) [Dark, or Light].

Manufacturer’s Name: South River Miso Co. Inc.

Manufacturer’s Address: South River Farm, Conway, MA 01341. Phone: (413) 369-4057.

Date of Introduction: 1999. May.

Wt/Vol., Packaging, Price: 1 quart bottle.

How Stored: Refrigerated.

New Product—Documentation: River Currents: News from South River Miso Company (Massachusetts). 1999. Spring. p. 1. “Have you tried our tamari.”

Talk with lady who calls from Vermont. 1999. Nov. 18. She has a bottle of this product and loves it. It also appears in the most recent South River Miso Co. newsletter under “Holiday gift pack No. 3”—which shows it is now available in pints. The label (photocopied black on white) states: “Collected from the vats of South River Miso. Fermented from deep well water, brown rice, chick peas or soybeans, sun-dried sea salt, and koji culture. Aged in wood for a minimum of 3 months or one summer. Certified organic.” Now Christian is making light and dark miso tamari.

4030. Gorman, Christine. 1999. The joy of soy: Worried about high cholesterol? This versatile bean may be just what the doctor ordered. *Time*. June 7. p. 68-69.

• **Summary:** Begins with the story of a woman, age 67, who volunteered for a study to determine whether or not drinking a soy protein shake could lower blood cholesterol. She was delighted when her cholesterol level fell from 245 mg/dl to 205 mg/dl, and her LDL or “bad cholesterol” level fell from 170 mg/dl to 130 mg/dl. Now that the study is over, she still sprinkled soy protein on her breakfast and continues to see results—as more than 25 scientific studies have shown. Every little bit counts; a 1% drop in total cholesterol leads to a 2% drop in the risk of developing heart disease. For best results consume soy in minimally processed forms. Many Americans find boiled soybeans (edamame) to be delicious. Tofu is good if you find the right seasoning. Soy milk is nice on cereal but will ruin a cup of coffee. Miso soup contains quite a bit of salt. Soy powders (soy protein isolates) can be added to shakes or sprinkled on cereal. Soy isoflavone supplements are best avoided.

Many Americans are discovering that soybeans aren’t just for vegetarians and livestock anymore. They may be able to fight cancer and build healthy bones. Later this

summer or fall the FDA is expected to put soy on its short list of foods (like whole grains, and fiber-containing fruits and vegetables) that may actually reduce one's risk of heart disease.

Scientists are still not sure why soy lowers cholesterol levels. It may be the isoflavones or the soy protein or a combination of both.

In Japan, the incidence of breast cancer is much lower than in the USA and other industrialized countries. One reason may be the soy in the Japanese diet; the isoflavones in soy may act as antihormones, like the drug tamoxifen. Yet this is not yet clear. In the worst case, soy might even negate the protective effects of tamoxifen.

Photos show: Two large pods of edamame. A cake of tofu which is "a great source of nutrients." Japanese consume more than 50 lb of tofu per person per year.

4031. Oka, Tadashi. 1999. An American island in a Japanese sea: At home, it was miso soup. *Christian Science Monitor*. June 24. p. 22 (The Home Forum). *

4032. Hanamaruki K.K. 1999. Gyômu-yo seihin no go-annai [Introduction to our products for commercial use (Brochure)]. Nagano Prefecture, Japan. 8 p. 30 cm. [Jap]
 • **Summary:** On the cover of this color brochure is a photo showing yellow soybeans, white rice, and salt. The inner 6 pages contain brief information in Japanese and a color photo showing each of the company's products—most of which are miso or miso-based. The information includes product name, ingredients, bar code, unit price, case size, and product description. On the rear cover is the address, phone number, and fax number of the company's headquarters, two miso factories (in Nagano and Gunma prefectures), research lab, and many sales offices. The website is hanamaruki.co.jp. Address: Hirade 1560, Tatsuno-cho, Kamiina-gun, Nagano-ken 399-0422 Japan. Phone: 0266-41-1321.

4033. Hanamaruki K.K. 1999. Seihin no go-annai [Introduction to our products]. Nagano Prefecture, Japan. 12 p. 30 cm. [Jap]
 • **Summary:** This color brochure contains brief information in Japanese and a color photo showing each of the company's products—most of which are miso or miso-based. The information includes product name, ingredients, bar code, unit price, case size, and product description. Address: Hirade 1560, Tatsuno-cho, Kamiina-gun, Nagano-ken 399-0422 Japan. Phone: 0266-41-1321.

4034. Kikkoman Corporation. 1999. Annual report 1998. 339 Noda, Noda-shi, Chiba 278, Japan. 30 p. 28 cm. [Eng]
 • **Summary:** The information in this English-language annual report is current as of April 1999. Contents: Financial highlights. A message from the president

(Yuzaburo Mogi): The year in review, dining pleasure and convenience, serving a global market, a source of variety, seeking new growth opportunities, promoting food culture. Global operations: The Americas, Europe, Asia and Oceania, Japan. Review of operations: Soy sauce, soy sauce derivative products, Del Monte, sake and wine. Research & development. Financial section: Consolidated balance sheets, etc. Corporate history (chronology from April 1925 to October 1998). Global network (directory of Kikkoman names, addresses, and phone numbers worldwide). Board of directors and officers. Corporate data.

Net sales were up slightly (7.1%), but net income was down for the second year in a row. Overseas sales (excluding exports from Japan) grew 15.8%, and have grown dramatically each year since 1994 (p. 16). In 1994 overseas sales accounted for about 15% of consolidated net sales; in 1998 about 28%. And operating income generated overseas accounted for 51% of Kikkoman's consolidated operating income.

In 1998 Kikkoman released *Akadare-to-Kurodare*, a steak dipping sauce based on a blend of their popular *Akadare* (miso based) and *Kurodare* (soy sauce based) dipping sauces.

"Serving a global market: In June 1998, Kikkoman Foods, Inc., our first overseas plant, celebrated 25 years of operation, thus marking a major milestone for our international activities. Over the past quarter century, the production capacity of the Kikkoman Foods plant—located in Wisconsin—has expanded more than tenfold. To further augment capacity, in October we commenced operations at our second plant in the United States, in Folsom, California, which is conveniently located near large markets on the West Coast. Similarly, in Europe, we raised the annual production capacity of our plant in the Netherlands to 5,000 kiloliters. Following these additions, total production of soy sauce and its derivative products at our overseas plants surpassed 100,000 kiloliters in 1998. This is approximately the same as the production capacity of the second largest soy sauce manufacturer in Japan."

Kikkoman's share of the soy sauce market in Japan is almost 3 times as large as that of its nearest competitor.

The Americas: On 6 Oct. 1998 Kikkoman had the formal opening of its second U.S. soy sauce manufacturing plant in Folsom, California. The 210,000 square meter facility was built at a cost of US\$46 million and has an initial soy sauce production capacity of 10,000 liters per year. The plant began operating in April 1998 and shipments of soy sauce started in October. The Kikkoman plant in Walworth, Wisconsin, is now approaching its annual soy sauce production capacity of 80,000 kiloliters.

Color photos show: Yuzaburo Mogi (president and CEO). The opening ceremony and an outside view of the plant in Folsom, California. Most of the company's products (p. 8-13). Address: Noda, Japan.

4035. Fukami, Megumi. 1999. Re: The miso industry and market in the United States. Letter to William Shurtleff at Soyfoods Center, July 26. 9 p.

• **Summary:** 1998 sales volume of miso in the USA is estimated to be 6,100 to 6,600 metric tons (tonnes). She divides this into three parts: the Asian market, commercial uses, and the non-Asian (Caucasian) market. The Asian market is 4,300 tonnes or 70.5% of the total, expected to grow to 4,650 tonnes in the year 2000. Commercial uses is 800 tonnes, expected to grow to 865 tonnes in the year 2000. The non-Asian market is 1,500 tonnes. Thus the grand total in 1998 is 6,100 to 6,600 tonnes.

Health Focus data estimates that in 1998 about 24% of all Americans were soybean consumers, but this is predicted to grow to 30-50% of the population. Or, the non-Asian market is predicted to grow by 10-15% according to predictions by American Miso Co. and Miyako Oriental Foods.

In the year 2005, the Asian market is predicted to grow to 5,934 tonnes, and the commercial market to 1,052 tonnes. In an attempt to predict the non-Asian market in the year 2005, Megumi gives four possible scenarios, with a resulting figure for each. These figures are: 3,136 tonnes, 2,553 to 3,829 tonnes, 2,915 tonnes, and 3,524 to 5,287 tonnes. Thus the total for non-Asian market is 3,000 to 5,000 tonnes and the grand total for 2005 is 10,000 to 12,000 tonnes.

Megumi's web site is www.rny2000.com/megumi. Address: New York City.

4036. Seemo (H. Shapira). 1999. Re: Dakini Health Foods Pvt. Ltd. recently moved into a new factory in Pune/Puna, India. Letter to William Shurtleff at Soyfoods Center, July 29. 1 p. Typed, without signature on letterhead.

• **Summary:** Seemo (Mr. H. Shapira from Israel), Kairava (Mrs. J. Spaelstra from the Netherlands), and the "Dakini crew" have been "intensively busy setting up our factory." They raised money through loans, brought in a new partner, got all the required government approvals, bought a plot of land, "navigated between impossible contradicting rules and regulations and corrupt officials." Then, with the help of an architect, they put up a 6,000 square foot building. They dug the first foundation in May 1998 and moved in in Feb. 1999. The process has been frustrating at times. To get an electrical connection, for example, took months, involved hundreds of signed documents, and "thousands of dollars in baksheeshes" [bribes].

They set up a pressure cooker plant for making tofu, first tested it on 17 July 1999, and "got a huge fantastic delicious cake of tofu." They plan to do a "soft launch" on Aug. 2 to some hotels, restaurants, institutions, etc., while getting their packaging systems ready. They plan to start

selling to the retail trade in about two months. Their tofu production capacity is now about 200-400 kg/day.

"All this time we kept our little incubator busy supplying a small but loyal and growing clientele about 10-30 kg of tempeh weekly." Their new incubation room (12 by 11 feet) started operation today, with the first 15 kg batch of tempeh. They estimate a capacity of 60-70 kg maximum and are planning to start with 20-25 kg batches. They also have new clients waiting. Le Meridian in Pune has already put tempeh on their buffet, and will soon include it on their menu; now they want tofu as well! "It's a great adventure." Address: Dakini Health Foods Pvt. Ltd., S.N. 33, Bhoiwasti, Keshavnagar, Mundhwa, Pune/Puna 411 036, India. Phone: +91 20-613985.

4037. Byrnes, Stephen. 1999. The myths of vegetarianism. *Ecologist*. July. p. 260-63.

4038. Imhoff, Dan; Warshall, Peter. 1999. Soybean of happiness: A 3,000 year history of our most modern oilseed. *Whole Earth (San Rafael, California)* No. 97. Summer. p. 75-79.

• **Summary:** Contents: Introduction. Soy industrialism. The industrial products. Global soy fights. The most recent incarnation: Spliced soy. Contains six illustrations from *The Book of Tofu*, by Shurtleff and Aoyagi. Address: Editor, Whole Earth, California. Phone: 415/256-2800.

4039. Belleme, John. 1999. The story of how the Oak Feed Miso, Inc. was established, and its relationship to the Erewhon Miso Co. Part I. 1943 to 1978 (Interview). *SoyaScan Notes*. Aug. 22. Conducted by William Shurtleff of Soyfoods Center. With updates in Nov. 1999.

• **Summary:** Without John Belleme's perseverance and determination, the American Miso Co. would almost certainly never have come to be.

John was born on 3 Jan. 1943 in Union City, New Jersey—right across the Hudson River from the Empire State Building. His father died when he was young, so he and his brothers and sisters were raised by their mother. Years later John found that he was dyslexic—but in school this undiagnosed dyslexia caused him many problems and great frustration. He failed first, second, and third grades, so he was much older than his classmates. The frustration sent him to reform school at age 13½ and at age 14 he was "kicked out of New Jersey." His mother moved the family to Miami, Florida. He was old enough to drive a full-sized motor cycle to the sixth grade. He managed to graduate from high school (just short of age 21) in Miami, went to junior college in Miami for two years, then won a scholarship to the University of Miami. He had liked biology, science, and research since age nine, so once he settled down he became a good student—though because of dyslexia he could barely read or write when he started

college. In the mid-1970s he graduated from the University of Miami after two years with high grades in science, and got a job at the Veteran's Administration (VA) hospital in downtown Miami. He was put on one of the first teams in the United States that used and did research using a Phillips electron microscope. Soon they were doing pioneering research. Soon John was quickly promoted to the position of research biologist, a title usually reserved for those with a PhD degree. Soon the team's research was being published in scientific journals. "It was very exciting." This job, which paid very good money, was mostly a photography job and the hospital had a huge, state-of-the-art darkroom. John worked with an amazing older man from Germany, who required him to carry a camera everywhere he went and to shoot and print his photos as a way of developing his photographic skills. Before long John was a very skilled photographer—and electron microscopist.

But after a while he was transferred to a chemotherapy, a job which he disliked. So he started graduate school to be a school psychologist—and first realized that he had dyslexia.

Sandy Pukel (pronounced pyu-KEL) was the center of a small but growing community of people interested in macrobiotics and natural foods in Coconut Grove, a suburb of Miami. Sandy had a tiny food store. John was with a girl who asked him to buy her some foods at this store. Before long, he was a regular shopper. Then he started to get interested in macrobiotics, and before long he found himself doing volunteer work at the little store on weekends. Sandy suggested that, to study macrobiotics in depth, he should go to Boston and study with Michio Kushi. After attending a few of Sandy's macrobiotic classes in Coconut Grove, John quit his VA job and left for Boston.

1976 July 4—John arrives in Boston and starts to live at the macrobiotic study house of Ken and Anne Burns. John wrote in 1987 that he "stayed for what was to be one of the most exciting years of my life." Ken is an exceptional teacher, and the house has a *dojo* atmosphere—like that of a martial arts practice place or Zen monastery. The temperature is kept at 40°F during the winter, and life is spare but rich and deep. Through Ken, John and Jan got very interested in wild foods, and planned to publish a book on the subject. By the fall of 1976 John is interested in miso. He had read *The Book of Miso* by Shurtleff and Aoyagi and on Nov. 17 he attends an afternoon miso class and workshop they conduct at the Burnses' house. John is intrigued by the romance of going to Japan to learn how to do something. After the workshop he decides that he wants to travel to Japan, learn all he can about making miso in the traditional way, then come back to America and help to start a miso factory. John recalls: "I wanted to go to Japan and bring something back. I was going to do this or die."

After a year in Boston, John worked at Harvard Medical School for a while. Then he and Frank and Phyllis Head drove to Mexico in Frank's van with the idea of teaching the

Mexican people about macrobiotics—with whole grain tortillas, etc. Living in a little village in rural Mexico in a house with no electricity and no running water, they managed to tough it out for one summer. Then multiple scorpion bites and general hardship drove them back to America. From Frank's father's estate in Texas, John phoned Sandy, who offered him a job.

1978—John had heard Michio Kushi talk about starting a shoyu factory in America. Michio hoped to involve Sendai Miso Shoyu Co., Erewhon, and some Oak Feed people such as Sandy Pukel and some of Sandy's investor friends. One day John—who was still a pretty small man on the totem pole—he said to Sandy, "Let's start a miso factory in America—rather than a shoyu factory." He then explained his idea about studying miso in Japan. Sandy's response was "Good! Michio and I have been wanting to do that for a long time too." John then started to take Japanese language lessons from Berlitz. Sandy established an Oak Feed Miso account on which John could write checks to pay for these lessons, for his travels related to miso in the USA, and for legal fees to form a corporation, etc. Sandy's main concern was running the Oak Feed Restaurant next to the store.

1978 Aug. 6—William Shurtleff is in Miami, Florida, visiting Robert Brooks and Mary Pung of Swan Foods, a soyfoods manufacturer. He presents a slide show (2-3 blocks from Oak Feed Store) on miso at which John Belleme, Sandy Pukel and one other person are present.

1978—Various groups come together in an attempt to start a miso company in America. The "Oak Feed group" initially consists of Sandy Pukel of Oak Feed Co., John and Jan Belleme, and a few other investors. The "Erewhon group" was composed of Michio and Aveline Kushi, Mitoku, Sendai Miso-Shoyu Co., and a few people from Erewhon. Michio communicated with the Japanese members of the "Erewhon group" (Mitoku, Sendai) by phone; they never attended meetings.

1978 Dec.—The Oak Feed and Erewhon groups meet shortly before Christmas at Michio and Aveline's home on 62 Buckminster Rd., Brookline (Boston), Massachusetts. Those present were Michio Kushi, Sandy Pukel, and John Belleme. They begin discussions about starting the "Erewhon Miso Co." Everybody agreed on that company name. John recalls: "It couldn't have been called anything else."

What was the need for a miso company in America? First, they wanted to have unpasteurized miso. All the miso being imported by Erewhon from Japan was pasteurized in sealed plastic bags. Cold Mountain miso, made near Los Angeles, California, was sold unpasteurized in 14 oz plastic tubs. So the people interested in the new company began to criticize this product as being made with machines, non-organic, etc. Where would the factory be located? What might it be called? How big might it be? Who might be involved from Japan?

Sandy, Michio, and John all deserve some credit for the original idea of starting a miso factory in America. During 1978 and 1979 every time that Sandy or John went to Boston, they would talk with Michio about the miso company idea. Continued. Address: Honto Press, P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

4040. Belleme, John. 1999. The story of how the Oak Feed Miso, Inc. was established, and its relationship to the Erewhon Miso Co. Part II. 1979 to 1980. (Interview). *SoyaScan Notes*. Aug. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1979 Jan.—John Belleme in Coconut Grove, Florida, writes Bill Shurtleff in California on Oak Feed letterhead that he and Sandy are starting to look for land for the miso company. “Bill, If you were going to make miso in the U.S., based on climate, what state would you choose?” 1979 Feb.—Oak Feed Miso, Inc. is incorporated. Sandy Pukel and John Belleme are the principals.

1979 April—Barry Evans of Coconut Grove, Florida invests money and becomes an important shareholder in the new corporation and a member of the “Oak Feed group.”

1979 spring—Members of the Oak Feed and Erewhon groups meet in North Carolina in the first attempt to locate a site for the miso plant. In attendance are Michio and Aveline Kushi, Sandy Pukel, John Belleme, Frank Head, and Junsei Yamazaki and his wife (both from California). Michio thought the Yamazakis should be there, so the group paid for their transportation. Junsei was tasting the soil, tasting the water—it was bizarre. Then Aveline insisted that they all rent a car and drive to Atlanta, Georgia, since she thought the miso factory should be near some big city like Atlanta. Every now and then Junsei would sniff the air or get out of the car and taste the soil. John recalls that this trip was disorganized, unsuccessful, and very frustrating.

Why were they looking for land in North Carolina? They knew some people who lived in North Carolina, and they knew a real estate man in North Carolina. But after the trip with Junsei Yamazaki, John began to think that it didn't really matter where they located the company. Sandy, who is from Coconut Grove (a suburb just south of Miami), Florida, does not like cold weather—not even as cold as North Carolina. John is also from Miami. Moreover, the miso factory was supposed to be a small part of the whole project, which was to be called the Oak Feed Land Project. That was Sandy's idea, and it was supposed to be an educational center, summer camp, Kushi Institute—similar to what ended up being at Becket. The Kushi's Ashburnham project had failed by this time. There is actually still a 4-by-8-foot sign on the property that says “Oak Feed Land Project.” Sandy and John wanted a “land project” in a warmer climate that was closer to Miami. They learned that there is an isothermal belt in North Carolina, an unexplained

warm stretch of land that runs through the Piedmont below the mountains in western North Carolina; this happens to be an excellent place to make miso because the warm climate brings the miso to maturity faster.

In mid-1979 Sandy Pukel, armed with this new information about the isothermal belt, went up to western North Carolina and bought one of the first pieces of land he was shown—129 acres. The land cost about \$120,000 and the down payment was probably about \$10,000 to \$15,000. Rutherfordton, North Carolina, turned out to be the perfect location. “What would be a 2-year miso in Massachusetts using Mr. Onozaki's basic formula, was a 1-year miso in North Carolina.” Moreover, Great Eastern Sun and the Macrobiotic Wholesale Company, and a large community of macrobiotic people in Asheville are in North Carolina because of this sequence of ‘accidental’ events born largely of ignorance.

After the land had been purchased, John and Jan rode to North Carolina from Miami on John's motorcycle and saw the land for the first time. They took \$20,000 cash, which belonged to the new Oak Feed Miso, Inc., and deposited it in a safe-deposit box at the BB&T Bank near Rutherfordton; John kept the key. Sandy flew up to North Carolina while John was there. John and Jan, and Sandy and Jackie (his wife) all went together to the First Citizen's Bank in Tryon, North Carolina; after signing something, they returned to Miami. John purchased two round trip tickets to Japan, and set aside \$5,000 for living expenses which he would take to Japan—using corporation funds from the safe-deposit box.

1979 Oct.—John and Jan Belleme (who have just been married) leave Florida to travel to Japan. On the way they visit Thom Leonard at his new Ohio Miso Co.; he has already made several thousand pounds of miso. Arriving in Japan in late October, they spend several weeks in Tokyo with Mr. Kazama “hanging around his office.” The plan had been for the Bellemes to study miso making at Sendai Miso Shoyu, but basically John refused because he knew they had a big factory and he wanted to learn the more traditional way that he planned to use when he returned to America. After John handcuffs himself to Mr. Kazama's desk, he arranges for the Bellemes to study miso-making with the Onozaki family 10 miles north of Yaita city, in Tochigi prefecture, northern Japan—even though Mr. Kazama had not previously known the Onozaki family. Finally Mr. Kazama drives the Bellemes northward to visit Sendai Miso Shoyu Co. On the way back he drops them off in a country village outside Yaita at the home of the Onozaki family, who run a traditional koji and miso factory. Imagine their surprise when, out of the blue, two Americans appear intent on learning the traditional Japanese art of making miso!

In November John and Jan begin to study miso making at the *Onozaki Kôji-ten*, while living with the Onozaki family. They paid the family a certain monthly fee for room and board, and an additional fee for the teaching and

training. He and Jan also received a small monthly wage. At one point John requested an additional \$5,000 from the corporation. The Onozaki family made and sold both miso and koji. About half the koji was sold, mostly 1-2 pound bags to individuals who used it at home, mostly to make amazake. When John was there, the Onozaki family made much more miso than koji. The Bellemes' study and training continue until the next summer. While in Japan, John wrote many letters back to macrobiotic friends in America as part of campaign to (1) try to prevent Sandy from giving away the miso company to the "Japanese group," (2) show that he was learning how to make the real traditional Japanese miso, and (3) argue that much of the so-called "traditional" miso being imported from Japan was actually made in modern factories.

1980 April—A letter from John Belleme, titled "Making miso in Japan" is published in *GOMF News* (Oroville, California). It is the first published account of his experiences with the Onozaki family. 1980 May—According to Mitoku's records, the first shipment of Onozaki rice miso from Onozaki Koji-ten in Tochigi prefecture is sent by Mitoku to Oak Feed Store in Miami, Florida; 84 cartons and 4 kegs. John Belleme contacted Mr. Kazama and arranged this shipment. At the time, Oak Feed Store was importing Japanese products from Mitoku and distributing to stores across the USA. Michio Kushi set up the connection and it was all done with his blessing.

1980 May—After their apprenticeship with Mr. Onozaki, John and Jan spend 3-4 weeks at Sendai Miso Shoyu—at Michio's request. Mr. Kazama drove them to Sendai. John studied the process and took lots of photographs.

1980 June—John and Jan Belleme return from Japan. The Oak Feed and Erewhon groups meet at Oak Feed Co. in Florida to determine ownership of Erewhon Miso Co. There were various contracts. In one, for example, said that Sendai Miso Shoyu and Mitoku would each own 15% of the company—even though it was not clear what they would contribute to the venture. It is finally decided that each of the two groups would own 50%.

1980 summer—John starts to locate and order the miso equipment he needs, which falls into three categories: (1) Purchased from USA: He orders wooden vats from the Arrow Tank Co. in Buffalo, New York. The pressure cookers (for soybeans) and boiler also came from the USA—mostly New Jersey. (2) Purchased from Japan: Two steamers for rice and barley, a rice milling machine, an automatic koji inoculating machine ["rice rocket"] (which they never used until many years later; John did all inoculating by hand), soybean washing machine, soybean crusher (to grind and crush the cooked soybeans), miso mixer (to mix the crushed soybeans with the koji and salt), the foot-activated piston filling machine, which originally filled bulk tubs, and later filled coffee bags and small plastic tubs. (3) Designed by John and fabricated locally: The

tilting cooling table to cool hot soybeans then dump them into the soybean crusher, the conveyor that transports raw miso from the miso mixer up into the tall wooden vats, the clam that would come down from the ceiling and lift 400-500 lb of finished miso out of the vats; John also used it to mix miso from one vat to another in mid-season. Everywhere (except in the koji-making process) that Japanese miso makers used intense labor, John tried to use machines.

1980 fall—John and Jan Belleme go on the Erewhon payroll at \$400/week, break ground, and start construction of the miso plant in Rutherfordton, North Carolina. On Sept. 29 the land for the new factory is being leveled. John pays initial expenses using funds in the BB&T safe deposit box.

1980 late—John starts to make small, experimental batches of miso in his house, in the sauna room. In his spare time, John starts to grow shiitake mushrooms, behind the main house, up on the hill. He and Jan had brought shiitake plugs from Japan. They used a chain saw to cut oak trees into logs for growing. He sold small amounts to Great Eastern Sun, but he was too busy with other things for shiitake to become a business, as he had once hoped. Continued. Address: Honto Press, P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

4041. Belleme, John. 1999. The story of how the Oak Feed Miso, Inc. was established, and its relationship to the Erewhon Miso Co. Part III. 1981. (Interview). *SoyaScan Notes*. Aug. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1981 Jan.—When it comes time to buy equipment and build buildings, the new company finds it has little or no money. It needs about \$40,000. The person constructing the building, Doug Ashley, threatens to put a padlock on the building because John is unable to pay him. He also threatens to sue John. The project comes to a complete standstill for months as Barry and Sandy are trying to settle their conflict in Miami. During this time, when John has nothing else to do, he starts to write articles about his miso apprenticeship in Japan. And Jan corrects her dyslexic husband's multitude of misspelled words and prepares the stories for publication. Eventually he and Jan wrote over 100 published articles about Japan, Japanese foods, and miso. They contain some 400 of John's photographs.

During the conflict between Sandy and Barry, John finds himself in a very difficult position—in the middle and torn. At one point Sandy, who had been John's longtime close friend and macrobiotic mentor, decides that he no longer wants to be involved with Barry Evans and the miso company. Michio Kushi and Mr. Kazama of Mitoku go along with Sandy, dropping their crucial support for the project. John barely knows Barry, but now he finds himself trying to convince Barry not to abandon the miso project.

Barry asked John: "If I'm going to trade my ownership in Oak Feed Store for the miso factory, what value does that factory have? It's a piece of land and part of a building, but can you make miso? How are we going to sell it? Is it a business with potential?" John has to answer all questions with a convincing "yes!" even though he has not yet made miso by himself and has no idea what the market was. But by building up the value of the miso and downplaying the value of Oak Feed Store, John strains his relationship with Sandy. If Barry had abandoned the miso project, all of John's work in Japan might have been in vain. Moreover it would have left the land and the new building unpaid for—a total mess.

Soon John finds that his role had changed from potential miso maker to miso promoter and educator. His articles must put the wind in the sails of a ship that has stalled in the doldrums. "Every one of those stories had all kinds of intricate purposes to it." And each is written for various audiences with different goals. John has to convince: (1) All his readers that he is an expert on miso and that his miso would be unique—the best available. (2) Potential macrobiotic customers that the lighter, sweeter misos are good tasting and good for health. He could never build a company solely on long-term salty miso. (3) Michio Kushi, and macrobiotic counselors and teachers, not to say bad things about his miso. "I kept putting pressure on them until some were afraid of me—the miso mafia." (4) Barry Evans that the company would succeed and be a good investment. John sent Barry a copy of everything he wrote. John was not sure that Barry was completely committed until about 1984.

1981 Jan.—John Belleme's first article about his miso studies in Japan, titled "The Master of Hoops," is published in *East West Journal*.

1981 April—John Belleme's second article, titled "The Miso Master's Apprentice," is published in *East West Journal*.

1981 July—John Belleme's third article, titled "The Miso Master with a Big Heart: Making Miso in a Japanese Village," is published in *Soyfoods* magazine.

1981 early spring—Increasingly, the much-needed money starts to arrive from Barry. At about this time, and perhaps again earlier, "Barry Evans' money saved the company—there is no doubt about it."

1981 May—All of the miso-making equipment has arrived in North Carolina.

1981 July—The two groups meet at the newly constructed Erewhon Miso Co. plant to have an opening ceremony and celebration. About 25 people are present. The Shinto ceremony is conducted by Michio, with salt, daikon, azuki beans, etc. He goes from door to door, putting Japanese symbols on each door. Evan Root, who was there, was deeply moved by this ceremony. The Kushi's stay on the land for 3-4 days. John remembers that there was a lot

of stress during this time. Barry and Sandy were in the middle of resolving their problem.

1981 Aug.—John and Jan start full-time, large-scale production of Erewhon Miso. They have not made any miso on a large scale for more than a year. Erewhon Trading Co. contributed the soybeans, grains, and Lima seasalt; they probably arrived a month or two earlier. Money is still in short supply.

1981 Nov. 10—Michio Kushi files a petition for Erewhon for protection under Chapter 11 of the Bankruptcy Act at the federal in court Boston. This is a disaster for the new miso company. The Bellemes' paychecks and the miso ingredients stop arriving from Erewhon. The miso company's name is soon changed to Oak Feed Miso Inc., but the company now has no means of packaging or marketing its products. None of the Belleme's miso is ever sold under the Erewhon labels or the Oak Feed label. Address: Honto Press, P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

4042. Belleme, John. 1999. The story of how the Oak Feed Miso, Inc. was established, and its relationship to the Erewhon Miso Co. Part IV. 1982 to present (Interview). *SoyaScan Notes*. Aug. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1982 Jan. 4—Barry changes the name of the company to American Miso Co. and announces that it is open for business.

1982 Jan. 31—Sandy Pukel and Barry Evans agree to an exchange of stock whereby Sandy gets out of Oak Feed Miso and Barry gets out of Oak Feed Store and Oak Feed Restaurant. They finalize the deal on Feb. 26, but it is retroactive to Jan. 31.

Barry starts The American Trading Co. (soon renamed Great Eastern Sun) to distribute their miso which would soon be ready for sale. For a while, Barry Evans and Sandy Pukel had been in a partnership in that import and distributing company. When Barry and Sandy split up, and Barry started Great Eastern Sun, Mr. Onozaki's miso started going to both companies. Marty Roth soon begins running GES.

1982 Jan.—At about the same time, during the first season, after John has made quite a bit of miso Mr. Onozaki visits the American Miso Co. in North Carolina for about 2-3 weeks at the Bellemes' invitation. They are interested in his comments on their miso plant and process, and they pay his way as a consultant and friend. He works with them making miso and gives them some very valuable suggestions (both big and subtle) for improvements—mainly in making the koji. Formal dinner is held in his honor.

1982 April—Mr. Onozaki's eldest daughter, Kaoru, and her husband, Haruo (Mr. Onozaki's adopted son), visit the miso factory and work for 3 months, living under the same roof as the Bellemes. Jan is pregnant when they arrive and

the Belleme's son, Justin, is born on 24 May 1982 in North Carolina.

1982 April 24—Richard Leviton, editor and publisher of *Soyfoods* magazine, visits the American Miso Co. in Rutherfordton, North Carolina, and writes an in-depth cover story about the miso-making process, equipment, and company, published in the summer (July) 1982 edition of his magazine. The best, most detailed coverage to date. The color cover photo (taken by Leviton) shows John, Kaoru, and Haruo making miso.

1982 fall—The Bellemes' first miso is ready for sale. It is a red miso made, Onozaki style, with approximately equal parts soybeans and rice. It is sold only in bulk. The logo is two crossed sheaves of grain in a circle—drawn by an artist friend of John Troy's. This miso is shipped to Great Eastern Sun and sold in bulk under the American Miso label.

Prior to about 1983-1984 all of the company's miso was sold in bulk through Great Eastern Sun to stores. Over the years, John had been working on selling miso refrigerated in one-pound plastic bags, each having a pressure-release valve. The unique bag was designed for coffee and made in Italy. Finally, at a food show in Atlanta, Georgia, two big refrigerated distributors—Cornucopia and Tree of Life—decided to carry the new products. Soon refrigerated distribution trucks began stopping by the miso factory in North Carolina to pick up 7 varieties of miso in 1-pound bags. It was a breakthrough. Demand increased dramatically.

1983 Oct. 1—At John and Janet's request, Barry Evans buys all their shares (900 shares, 35-45% of the ownership) in the American Miso Company. John agrees to work as a consultant for 6 months and to train a person to take his place. John Fogg has been handling the marketing account for Great Eastern Sun. John Belleme asks him to design a retail marketing program, logo, and label for American Miso. He comes up with the idea of "Miso Master." John cringes, because it implies that he is a miso master, whereas he still considers himself a beginner, and he is developing many new types of sweet miso that he has definitely not yet "mastered." Peter Harris draws the Miso Master logo, an illustration showing the head and shoulders of a Japanese miso master, with a knotted headband, in front of a large wooden vat of miso.

1984 Feb.—At the time he sells his stock to Barry, John establishes a new marketing company named Just In Foods, Inc. (John's son is named Justin) for his miso and miso products. It is owned by John and Jan and Barry Evans. John is training Don DeBona to take his place at American Miso Co. His new responsibility will be to work as a marketing person between the miso factory and Great Eastern Sun (a distributor).

1985—John creates another entity named Institute of Fermented Foods (it was never registered or official) as part of his ongoing struggle with Barry Evans. The name

appears on the label of many creative miso products Chick Peaso (Chick Pea Miso) and Mellow Ebony Miso (with Black Soybeans).

1985 Dec.—John and Jan leave the American Miso Co. due to ongoing conflicts with Barry Evans. Over the years, John had negotiated with Barry to give him more and more ownership in the company—because he was doing all the work. He eventually owned about 30% of the shares, which Barry bought back from him a year or two before he left—at John's request.

1985—John (who has nothing to do), with Sandy and Blake Rankin form a company named Granum East, based on Sandy's wholesale company in Florida. They plan to sell macrobiotic foods to distributors. It was nothing more than a telephone in John's home office. John would call up Great Eastern Sun (GES) customers and offer them a 10% larger discount than they could get from GES. Within 18 months the company had \$700,000 worth of GES' business. Barry was forced to buy the company from them.

John reflects on Sandy's financial role in the company: Sandy has an incredible money karma; he lets it go out and come in without holding onto it, without any attachment. John was later in a seitan business with Sandy; it failed and lost about \$300,000. When Sandy found out about these losses, he hardly batted an eyelash—and he's not a rich person. He helped people out all over Miami, and not only with money. He'd give them food, or whatever they needed. It was just amazing to see. Then all of a sudden a large amount of money or good fortune would just drop in his lap. Address: Honto Press, P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

4043. Kairava (J. Spaelstra); Seemo (H. Shapira). 1999. Re: Update on Dakini Health Foods Pvt. Ltd. in Pune/Puna, India. Letter (fax) to William Shurtleff at Soyfoods Center, Aug. 22. 1 p. Typed, without signature on letterhead.

• **Summary:** Gives details on their work with tofu and tempeh. They do not yet have a recipe book nor do they vacuum pack their tempeh. They are, however, developing a nice label. They have contacted Raj Gupta of ProSoya by e-mail about soymilk equipment.

"The nutrition situation in this country and on all income levels is no good—from severe protein deficiency on the lower income rungs to fancy diseases for the rich. Developing soyfoods production here is most crucial, urgent, and possibly also a good investment!

"At a later stage, to avoid spreading ourselves too thin right now, we are interested in trying our hand at more fermentations such as Taicho, Miso, Soysauce. We are looking for more material to study." A copy of the recent article from *Citadel Pune* (full of errors) is attached. Address: Dakini Health Foods Pvt. Ltd., S.N. 33, Bhoiwasti, Keshavnagar, Mundhwa, Pune/Puna 411 036, India. Phone: +91 20-613985.

4044. Seemo (H. Shapira). 1999. Re: Another update on Dakini Health Foods Pvt. Ltd. in Pune/Puna, India. Letter (fax) to William Shurtleff at Soyfoods Center, Aug. 24. 1 p. Typed, without signature on letterhead.

• **Summary:** Their company started business in April 1996 making white tahini. Sometime later they introduced peanut butter.

The third partner in their business is Bodhi Yahaan; they call him Yahaan, and he has been with the company for nearly two years. Like Seemo, he is from Israel where his name was Mr. Natan-Ran Diamant; now he lives in Pune. He does not work in the factory, but he does get the computer to work. He brought in the much-needed finance and also organizes loans when the banks fail. "He owns 50% of the company's shares and a very good friendship is growing."

"Mr. Donnelly (our Indian partner) resigned near the end of 1996, and since last year we got all government permissions to run the company without any Indian partner."

In Goa, "a friends couple of ours, Lisa Camps and her French friend Richard, are making tofu and tempeh on a small but interesting scale. This year they are growing and opening their own retail outlet with a delicatessen counter and a salad bar. We managed to convince them to invest in a good grinder, a small screw press, and a simple dehulling device for their tempeh. Also, I am building them an incubation cabinet so they will no longer mysteriously lose so many cakes of tempeh. Also, since last year, we are supplying their tempeh starter, and, from this year, their soybeans. Their address: Lisa Camps, H.S. No. 1684 Ouneachem Baht, Anjuna Bardez, Goa, India." Address: Dakini Health Foods Pvt. Ltd., S.N. 33, Bhoiwasti, Keshavnagar, Mundhwa, Pune/Puna 411 036, India. Phone: +91 20-613985.

4045. Grogan, Bryanna Clark. 1999. Soyfoods cooking for a positive menopause. Summertown, Tennessee: Book Publishing Co. 192 p. Sept. Index. 23 cm. [31 + 49 websites ref]

• **Summary:** On the front cover: "Reduce the discomforts of menopause naturally. Lower your cholesterol. Reduce your risk of heart disease and cancer. Over 150 family pleasing recipes." Eating a diet rich in soyfoods may alleviate many of the discomforts of menopause.

Content: Introduction. Glossary. 1. The soy prescription. 2. Soy for strong bones and weight loss. 3. Preventing the number one killer of women-heart disease. 4. Can soy prevent cancer? 5. A soyfoods primer. 6. Baking and cooking with soyfoods. 7. Breakfast foods and beverages. 8. Condiments, sauces, dips, dressings, and spreads. 9. Appetizers, salads, and soups. 10. Lunch, supper, and side

dishes. 11. Dinner entrees. 12. Desserts. Bibliography and websites. Sources for ingredients.

4046. Ontario Soybean Growers. 1999. Canadian soybeans (Ad). *Soya & Oilseed Bluebook* 2000. p. 104.

• **Summary:** This one-third page black-and-white ad states: "High quality, food grade soybeans for the production of tofu, miso, natto, soymilk, soy sprouts, soy sauce, tempeh and other soya products. Soybeans for the crush market. Identify preserved (I.P.)—Specialty soybeans. Organic and transitional soybeans. Container—Bag/bulk. Bulk vessel.

"Trusted, reliable, supplier of soybeans to the world for over 25 years.

"For more information or a list of suppliers contact: Canadian Soybean Export Association." Address: P.O. Box 1199, Chatham, Ontario, Canada N7M 5L8. Phone: 519-352-7730.

4047. **Product Name:** Frozen Tofu Cubes.

Manufacturer's Name: Tendore.

Manufacturer's Address: Wakayama prefecture, Japan.

Date of Introduction: 1999. September.

How Stored: Frozen.

New Product—Documentation: Talk with Christine, co-worker with Michio Kushi. 2000. Oct. 20. Tendore makes frozen tofu. They add starch, which enables it to stay soft when added to hot miso soup. Then they flash-freeze it for about 20 minutes. Trader Joe's has carried the product.

Talk with manager of Trader Joe's in Lafayette, California. 2000. Oct. 20. This product, imported from Japan, was sold on a one-time trial basis by Trader Joe's. They discontinued the product in about April 2000 because it did not sell very well.

4048. Houck, Claudia. 1999. St. Matthews woman advocates healthier diet featuring soy products. *Times and Democrat (Orangeburg, South Carolina)*. Oct. 13.

• **Summary:** Mary Jo Wannamaker is integrating the soybean into traditional Southern fare. She and her husband, Ben Coonrod, moved back to St. Matthews about 8 years ago; she joined her father, Luther, in the family's seed business. Her father had just begun to experiment with "edible soybeans." She has since concentrated on that area. They sell their soybeans (grown on their farm or contracted with local growers) to private companies and trading companies in Japan.

The writer visited for a meal featuring soybeans and soyfoods—including edamame. Mary Jo has long been interested in nutrition and a healthy lifestyle. Contains recipes for: Miso soup. Pumpkin bread (with soy flour). Frosty strawberry shake. A large photo shows Mary Jo holding a bowl of edamame. "The boiled soybeans are eaten as finger food, much like boiled peanuts."

4049. Egan, Jeanette Parsons. 1999. *Soy! Soy! Soy! Enjoy soyfoods' benefits in delicious recipes*. Tucson, Arizona: Fisher Books. xxx + 162 p. Oct. Illust. Index. 23 cm. Simply Healthy Series.

• **Summary:** This is a soyfoods cookbook. Contents: Dedication. Acknowledgments. Why I love soyfoods: Why eat soyfoods?, soy's health benefits, reduces heart disease, helps prevent cancer, soy for your bones (osteoporosis), to flash or not to flash (menopause), what about soyfoods allergies, how much soy should I eat? (soy protein, isoflavones), where to purchase soyfoods, how to add soy to your diet, important notes about eating soy. A soyfoods glossary: Black soybeans and yellow soybeans, green soybeans (edamamé), meat alternatives or analogs, miso, soy cheeses, soy cream cheese, soy flour, soy grits, soy milk (soy beverages), soybean oil, soynuts, soynut butter (roasted soybean butter), soy protein concentrates, soy protein isolates, soy sauces (tamari, shoyu), soy yogurt, tempeh, textured soy protein (TSP), tofu. Appetizers. Soups. Salads. Main dishes. Side dishes. Breads. Breakfast dishes. Desserts. Mail order sources for soyfoods. Other sources.

Contains 8 full-page color photos showing recipes. This is not a vegetarian cookbook. Recipes call for the use of chicken (4 recipes), ground beef, ham, crab meat, etc.

4050. Fallon, Sally; Enig, Mary G. 1999. *Nourishing traditions: The cookbook that challenges politically correct nutrition and the diet dictocrats*. 2nd ed. Washington, DC: New Trends Publishing Inc. xvi + 668 p. Illust. by Marion Dearth. Subject index. Recipe index. Menu index. 26 cm. [200* ref]

• **Summary:** Contains over 700 recipes. Contents: Preface. Introduction: Politically correct nutrition, fats, carbohydrates, proteins, milk & milk products, vitamins, minerals, enzymes, salt, spices & additives, beverages, about food allergies and special diets, parting words, guide to food selection (nourishing traditional foods, compromise foods {such as tofu}, newfangled foods {such as soy protein isolates and commercial soy milk}), a word on equipment, kitchen tips & hints, references (188). Mastering the basics. Great beginnings. The main course. A catalog of vegetables. Luncheon and supper foods. Grains & legumes. Snacks and finger foods. Desserts. Beverages. Feeding babies. Tonics and superfoods. Appendixes (A-F). About the authors.

Some of the basic recommendations in this book fly in the face of modern nutritional science: Eat more meat. Eat dairy products made from raw milk; pasteurization harms the milk. The worst fats are *trans* fatty acids, produced by hydrogenation; cholesterol and saturated fats do not cause heart disease. Consume plenty of enzymes. Meat should be eaten raw, rare, or braised in stock. Moreover, the authors propose a conspiracy in which doctors, researchers, nutritionists, and spokesmen of various government

agencies are giving bad nutritional advice to the American public (p. 2). The authors wish, sentimentally, for the return of the small American farm. Moreover, they do not examine some of the non-dietary issues related to a diet based on meat and dairy products: What is its impact on the environment? How would it affect the ability of the Earth to feed more than 6 billion people? What right do humans have to kill animals?

However the authors also make a number of recommendations that many people would agree with: Eat more natural, traditional, fresh, and unrefined foods instead of refined and processed foods. Avoid sugar and hydrogenated fats. This book is strongly influenced by the observations of Dr. Weston Price, a dentist, whose important book *Nutrition and physical degeneration: A comparison of primitive and modern diets and their effects*, was published in 1939.

Concerning soyfoods, the authors favor the use of small amounts of fermented soyfoods (such as traditionally fermented soy sauce and miso) but are strongly opposed to the use of non-fermented soyfoods such as tofu and soymilk.

Soy-related recipes and information: Commercial soy formulas are low in saturated fats and devoid of cholesterol (p. 6). Today most of the fats in the American diet are polyunsaturated and derived from vegetable oils such as soy (p. 10). The cheapest oils, such as soy oil, are often hydrogenated; this creates *trans* fatty acids (p. 14-15). Cows lose valuable Activator X when fed high-protein soy-based feeds. Lecithin is found in butter (soy, the main source of lecithin worldwide, is not mentioned). Mother's milk is high in cholesterol because it is essential for growth and development (p. 16-17). Omega-6 (bad) and omega-3 (good) fatty acids in soybean oil (p. 19). Fermented soy foods contain compounds that resemble vitamin B-12 but they are not absorbed by humans (p. 28). Isolated protein powders made from soy are usually obtained by a high-temperature process that over-denatures the proteins to such an extent that they become essentially useless, while increasing nitrates and other carcinogens. These isolated soy proteins can cause osteoporosis (p. 29). Beef should not be fed soy meal for protein, but rather animal parts (p. 31). Avoid farm raised fish [aquaculture] that have been fed soy meal (p. 32). Cultured soybean products from Asia, such as natto and miso, are a good source of food enzymes if they are eaten unheated (p. 47). The natural glutamic acid in soy sauce and miso gives these foods their rich, meat-like taste (p. 49). Many processed foods contain MSG or hydrolyzed protein, "especially soy-based concoctions" (p. 50). Heavily yeasted foods, such as soy sauce and Worcestershire sauce, often exacerbate the symptoms of chronic yeast [candida] infection (p. 56). Beans cause digestive problems because they contain two complex sugars, farrinose [sic, raffinose] and stachyose (p. 60). The macrobiotic diet and soybeans:

Use only as fermented products like miso, natto, and tempeh. Problems with tofu, soy milk, and phytoestrogens in soy (p. 62). The sickening effect of soy on ruminants (p. 87). In Japan, a typical meal contains miso, soy sauce, and pickles, all fermented products. In Indonesia, they eat tempeh (p. 94). Ode to naturally brewed tamari soy sauce and teriyaki sauce (p. 147). Soy products increase the body's need for vitamin B-12 (p. 164). Soy in Chinese history. Miso soup. Tofu in fish stock and soy sauce broth (p. 201). Macrobiotic diets (p. 343). Soy foods block zinc absorption (p. 348). Eat natural salmon; farm-raised salmon are fed inappropriate soy meal (p. 418). Problems with soy flour and modern soy products: phytates, antinutrients, omega-3 fatty acids, disagreeable taste, phytoestrogens, phytic acid, enzyme inhibitors (p. 477, 495). Soybeans are low in two essential amino acids (p. 496). Textured soy protein contains three antinutrients: Phytic acid, trypsin inhibitors, and isoflavones (p. 502). Person fed soybean milk as an infant had a spleen filled with ceroid (p. 546). Infants should not be fed soy-based formulas which contain phytic acid and estrogen compounds (p. 599, 603-04).

Note: The first edition was apparently published in 1995 by ProMotion Publishing (San Diego, California). Address: California. Phone: (877) 707-1776.

4051. Kluger, Jeffrey. 1999. What's for dinner? Our chef whips up a tasty meatless meal that's good for you—and for nature. *Time*. Nov. 8.

• **Summary:** In the “health and environment” section: The article begins: “If the human race becomes vegetarian in the next century, animal-rights activists will be ecstatic. But what about the rest of us? Can we possibly enjoy a meat-free, dairy-free [sic] future when hunter-gatherer appetites will still be hard-wired into our genes?”

Time has chosen Louis Lanza, executive chef at and owner of Josie's Restaurant and Juice Bar in New York City, to prepare a dinner for the year “2025 that would be good for the body—and the planet. In his tasty menu, liver pate gives way to lentil pate, steak is replaced by tofu cutlet and a banana-and-ice-cream dessert is made with rice milk instead of cow's milk.”

The dinner includes: “Soup and salad: Chick-pea miso soup with salad of organic baby greens, heirloom tomatoes and toasted soy nuts.

“Entree: Seared tofu cutlets in an orange chipotle glaze with mushrooms, butternut squash and wheatberries.” For dessert is a sundae of rice “ice cream” [Rice Dream].

4052. Pukel, Sandy. 1999. History of interest in macrobiotics and miso. Part I. 1945-1974 (Interview). *SoyaScan Notes*. Nov. 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Sandy was born on 10 Sept. 1945 in Queens, New York City. In 1967 he graduated from the University of

Wisconsin, majoring in political science, then went to law school at the University of Tulsa in Oklahoma. After two years he realized he did not want to be a lawyer, and dropped out—at a time when many other young Americans were also dropping out of college or “straight” jobs. For the next two years he passed his leisure time like many other young Americans. In August 1969 he was at Woodstock and appears in the movie—naked. Knowing he wanted to be an entrepreneur, he worked on Wall Street for a while.

In April 1970 a childhood friend from Queens, Willy Rosenfeld, introduced Sandy to macrobiotics. Willy had gone to Harper College (SUNY) at Binghamton, New York, where he met Michel Abehsera. Sandy went to a lecture in New York City by Rebecca Dubawsky. “From that night on I became macrobiotic; I went ‘cold turkey.’” He stopped using psychedelics and quickly got interested in the philosophy of macrobiotics; he wanted to “turn the world on” and saw this as one way to do it. That summer he went to a macrobiotic summer camp / retreat at Awosting in upstate New York with 30-50 other people. There he first met Michio Kushi, who was in short pants and knee-socks. This deepened his interest.

In August 1970 Sandy and five of his closest friends decided move to the island of Jamaica, where they would live a simple life and practice macrobiotics—in paradise. They stopped by Greenberg's Natural Foods at 125 1st Ave. in New York City. Located on the lower east side of Manhattan, it probably had the largest selection of macrobiotic foods in America. There they bought provisions for the trip: a 100-lb sack of brown rice, a keg of Hatcho miso, aduki beans, and soba noodles. They got non-tourist visas, and settled down in a lovely rural spot. The dentists in the group had hoped to open a clinic. But it didn't work out; the local people saw them as white hippies so they kept trying (unsuccessfully) to sell them drugs. The local people just wouldn't let them alone, so after about 6 months, one by one, they returned to the United States. Sandy was the last to leave. He went to Coconut Grove, to stay with one of his roommates in law school, Roger Schindler, happened to live there. But there was no place to eat or to buy macrobiotic foods. So in Nov. 1970 Sandy and two of his close friends started Oak Feed Store. One partner was Leon Matsil, a dentist and Sandy's boyhood friend from Queens; the other was Joel Magazine, an attorney and public defender in Miami, who also went to law school with Sandy in Oklahoma and who Sandy turned on to macrobiotics. They just wanted to have food available. They did not go into it thinking it would be a business—Sandy's father lent them \$4,000 to start the store. It was named Oak Feed Store because the law library was on Oak Avenue. The word “Feed” was used because the purpose of the store was “to feed the people the good food.” They name came spontaneously; no one person thought of it. This was the first of many enterprises that Sandy would help to finance.

It was located on the second floor walk-up of the law library of the lawyer of one of his friends. The room was about 10 by 15 feet. This was the first macrobiotic food store or organization in the greater Miami area. They ordered their foods via common carrier (truck) from Akin, a distributor in Jacksonville, Florida. Akin distributed many Erewhon products. They also ordered quite a bit of food via mail order direct. They relatively few foods: Bulk brown rice, almonds, miso, noodles, noodles, apple juice, plus one cosmetic (Oregene shampoo). "It was really a strict, strict macro kind of place." There was a commune in Coconut Grove named the Maya House, and its members were regular workers at Oak Feed Store. Sandy also worked there regularly.

Also in about 1970 Sandy and his two friends started another communal affiliation that they called LJZ Enterprises—Leon, Joel, and Zuni; Sandy's nickname was Zuni. Everything went into one pool and they shared everything 100%—totally. All money from Joel's law salary, all money from Leon's dental practice and investments, all money Sandy earned from the store went into this pool, and each person took whatever they needed. This included purchases of houses, cars, clothing—everything. This lasted for the next 7 years and worked very well. To this day, they are all still close friends.

Oak Feed Co. became increasingly popular. After about one year they moved to a street-level retail store in the same building. Then in late 1971 or early 1972 they moved around the corner to a bigger store at 3030 Grand Avenue—where they stayed for the next 20 years. By this time they were running a real business—in spite of themselves.

Sandy recalls: "Once I got into macrobiotics I was a zealot about it—preaching, teaching, everything." In 1972 he began to give the first macrobiotic cooking classes in the area out of a rented home in Coral Gables, where he and Leon lived. A macrobiotic community began to evolve, with Sandy at its center. Sandy got to know Neal Loeb, who had studied macrobiotics in Boston, Massachusetts, and was Michio Kushi's driver. He was planning to bring Michio to Florida for a seminar, but he "flaked out" and couldn't get it together, so in about 1973-74 Sandy organized the weekend seminar. Michio's students in Boston sent Sandy detailed information about how Michio was to be treated, where he was to stay (hotel or motel only), what he was to eat, his detailed schedule, etc. "They were incredibly protective." The seminar was very successful, with a good turnout at a local church or private school auditorium. Michio stayed at Sandy's house and did individual consultations. Sandy and Michio got along very well, and Sandy gave Michio all they money they collected—in part because he didn't care about the money. Soon he and Michio became lifelong very close friends, and Michio started to give seminars in the Miami area on a regular basis.

In about 1973 LJZ bought a very nice house, communally, in Pinecrest a very nice neighborhood of Miami; there the three friends continued living together for a year. Macrobiotic visitors and friends stayed in the guest house on the property. In 1974 Sandy bought his own house (with a lake in his back yard) on 63rd Avenue in Miami, about 4 miles from Oak Feed Store.

In about 1974 Sandy started the Macrobiotic Foundation of Florida. Its purpose was to spread macrobiotics. Edmund Benson was on the board of directors. The cooking classes continued at Sandy's house in Coral Gables. Anyone passing through Florida who knew macrobiotic cooking was invited to be a guest teacher at the cooking class. Tim Redmond taught the first class on macrobiotic desserts—featuring apple pie. Sandy's repertoire didn't include desserts, except perhaps those made from agar or kuzu. Jay Pinsky, from Philadelphia, Pennsylvania, asked if Sandy had any apple butter, peanut butter, or sesame butter; he didn't. "We still ate basically rice, vegetables, miso soup, and aduki beans. We were as close to a Number 7 diet as you can imagine." Continued. Address: Owner, Oak Feed Store and Restaurant, 4500 S.W. 63 Ave., Miami, Florida 33133. Phone: 305-446-9036.

4053. Pukel, Sandy. 1999. History of interest in macrobiotics, miso, and the Oak Feed Miso Co. Part II. 1975 to Aug. 1979 (Interview). *SoyaScan Notes*. Nov. 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: Over the years Michio Kushi had talked about having a factory that made shoyu (natural Japanese-style soy sauce) in the United States. In about 1975, Sandy decided to do something about Michio's dream. He was increasingly an entrepreneur, but only in the sense that he liked to help make things happen. He still did not see himself as a businessman, in that he had little interest in money except insofar as it was important for making things happen. Oak Feed Co. was now a thriving enterprise. But why? "Because we didn't do it to make money, and because nobody took any money out of the company. So all the earnings were put back into the business. My job was to keep the philosophy going." Sandy's living expenses came from other investments. In the early 1970s, most young people Sandy knew who were interested in macrobiotics were dropouts with no money. He lived in a very nice house in Pinecrest (near Miami) and had the money he needed. In 1976 he began looking at the idea of a shoyu factory more seriously, but he soon realized that the complex equipment and buildings would make it too expensive.

Then John Belleme started coming to the macrobiotic cooking classes and other events at Sandy's house on 63rd Avenue. Though he came on his motorcycle, John had a "straight" job in electron microscopy at the Veterans Administration Hospital in Miami. Soon he was deeply

interested in macrobiotics and wanted to learn more and more. So Sandy suggested that John go to Boston to study macrobiotics with Michio. John did that, moving into a Ken Burns' study house. He stayed for about a year, then went to Mexico with Frank Head, and finally returned to Miami.

He asked Sandy for a job at the Oak Feed Store, and Sandy said "Fine." He was a responsible and knowledgeable person. John soon became the store manager, while also taking macrobiotic cooking classes at Sandy's house, but he did not see his future in a retail food store, thus he wasn't very happy with the job—though he was a very good worker. John was more a creator than a manager, and he and Jan had become sweethearts—great people and good workers. Jan used to make delicious seitan there. One day in about late 1977 John went to Sandy and suggested they do some kind of a project together. One of the ideas that came out of their brainstorming session was starting a miso factory in America.

A new idea was born, and Sandy responded by making John a deal. If John would work in the Oak Feed Store, in retail, for a total of three years (1976-79), Sandy would take care of the money necessary for making a miso factory happen and he would pay John's expenses related to starting the factory, pay for John's trip to Japan to study traditional miso making, and pay for John's share of ownership in the new miso company—\$25,000 in shares. John would be responsible for doing the research, learning how to make miso in Japan, etc. John accepted and began to manage the store.

In the fall of 1978 Sandy and John visited Michio in Boston to discuss the idea; Michio was very supportive, but he wanted the miso company to be in Massachusetts—perhaps on land at Becket or Ashburnham. Sandy didn't like the idea of Massachusetts—too much macrobiotic politics and the weather was too cold. Sandy put money from the Oak Feed Store into a separate account that John used to pay his miso-related expenses. Soon he began taking Japanese language lessons.

In 1977 Sandy started the Oak Feed Restaurant, and at about the same time Leon got married. These two events led to the three partners dividing up the properties of the communal LJZ Enterprises. Sandy ended up as the sole owner of the Oak Feed Store and his friends ended up with other businesses. Sandy took in partners in the restaurant; Michael Henry (a friend), and Wayne Neal and his wife. They invested and owned shares in the restaurant. Sandy got Yozo Masuda to be the chef at the restaurant. For many years Yozo had been the right-hand man of Hiroshi Hayashi at Sanae, an early macrobiotic restaurant in Boston. Sandy brought him and his whole family from Japan, and got him a green card so he could cook at the Oak Feed Restaurant.

1979 (early)—At some point, Sandy began looking for land for the miso company—using specifications related to the climate and temperature that John Belleme had given

him. But he was also looking for land for another reason—the Oak Feed Land Project. This was Sandy's dream of a macrobiotic educational center where various people would build homes and apprentice with John at the miso plant, and where various macrobiotic retreats and workshops and a summer camp with classes could be held on the land. Sandy spent about two months looking at catalogs, talking to realtors, etc.

1979 Feb.—Oak Feed Miso, Inc. is incorporated. By this time two groups have formed and begun to discuss their potential ownership of shares in the miso company: The Oak Feed group and the Erewhon group. It was agreed that the company would be named the Erewhon Miso Company. In the Erewhon group were Michio and Aveline Kushi, Sendai Miso-Shoyu, and maybe Mr. Kazama of Mitoku. In the Oak feed group were Sandy and John Belleme. It was expected that the Japanese would play a very important role in this company; they would assist the Americans in making miso in the United States. Sandy recalls meeting only once with some representative of Sendai Miso-Shoyu, probably at some natural foods trade show. Michio had most of the contact with them. At about this time the first of many of drafts concerning ownership of shares was placed on the table. None of the drafts was ever signed.

1979 April—Barry Evans becomes a major investor in the miso company.

1979 summer—After extensive research, Sandy flies up to North Carolina (Asheville) alone, looks at several pieces of property that a real estate agent has suggested, finds exactly the piece of land and house he had been looking for, makes a deposit or down payment of \$10,000 to \$15,000, agrees to assume the mortgage of the previous owners at the Tryon National Bank, North Carolina, and flies home alone the same evening. The roughly 90-95 acres of land in Rutherfordton cost about \$100,000 to \$120,000. The mortgage payments were \$500/month for 30 years. It was a lovely but very rural piece of property with rolling green hills. The Sears-style prefab 5-bedroom house on the property was basically thrown in free of charge. The land had become available because someone had died recently. With the new land and house, Sandy's Macrobiotic Foundation could do things that were impossible in metropolitan Florida.

1979 Aug. 7—Sandy closes / finalizes the purchase of the land for Oak Feed Miso in Rutherfordton, North Carolina. He and John Belleme both sign the closing documents. Now the new miso company would have to find the money to make the monthly mortgage payments, plus additional monthly payments to two officers of the bank totalling \$23,000. Barry Evans' money was important in making these payments but it was not essential. The miso company definitely would have been able to pay for the land in Rutherfordton and send John and Jan to Japan without the money Barry invested at this time. The investments Barry

made after construction of the factory began in mid-1980 and after Erewhon filed for bankruptcy were more important to the company's survival. Sandy put in the first money; Barry's came later. Sandy told John that if John took care of all the technical matters, Sandy would take care of all the financial matters to make the new company happen. Continued. Address: Owner, Oak Feed Store and Restaurant, 4500 S.W. 63 Ave., Miami, Florida 33133. Phone: 305-446-9036.

4054. Pukel, Sandy. 1999. History of interest in macrobiotics, miso, and the Oak Feed Miso Co. Part III. Aug. 1979 to 1982 (Interview). *SoyaScan Notes*. Nov. 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1979 Aug. 16–A “subscribers consent” agreement is signed at a meeting in Miami. The following people, all or most of whom were present, subscribe to buy shares in Oak Feed Miso, Inc. Sandy Pukel, John Belleme (he invested sweat equity, not money; Sandy put up John's share of the money), Barry Evans, Yozo Masuda (chef in the Oak Feed Restaurant), Edmund Benson (a friend of Sandy's involved in macrobiotics), and Jim Kenney (manager of the Oak Feed Store). All these people knew each other, and all but Barry lived near Coconut Grove. John signed as the secretary. Sandy also has the original by-laws of Oak Feed Miso—more than 10 pages of typewritten boilerplate-type language. They are not dated or signed, but they were almost certainly drafted in 1979. No names or shares are given. Frank Head was never a shareholder as long as Sandy was involved.

1979 Aug. (late)—After the land deal was closed, Joseph and Patricia Carpenter (married, with children, macrobiotic friends of Sandy's from his neighborhood) moved into the main house on the miso company land at Rutherfordton, North Carolina, and lived there, rent free and getting money, throughout the time the Belleme's were in Japan. Joseph was a carpenter and fix-it guy, and he was expected to make improvements to the house and land before the Belleme's returned. Joseph was also hired to be John's assistant and head worker in running the miso company. Joseph “seemed like a hard-working guy” and Patricia was “a sweetheart lady.” Joseph now lives in California and Patricia (who now uses her maiden name, Roberts) lives in Boca Raton, Florida, where she owns an antique store. Her parents live in Lighthouse Point, Florida, and her brother, Brendon Roberts, lives in Boulder, Colorado. Things did not end up on nice terms between them and John. Because they didn't do the work that John had expected of them, he either fired them or kicked them off the land. Sandy doesn't know what they were supposed to do; John would know. The Carpenters then bought land nearby.

1979 Oct.—John Belleme (and his new wife, Jan) leave for Japan. All their expenses are paid from the Oak Feed

account Sandy had established—not from the new corporation.

Michio was supposed to arrange for John's welcome in Japan and find a place for him to learn how to be a miso maker. But the people at Sendai Miso-Shoyu didn't want to share their secrets with John, so John ended up studying with the Onozaki family—kind of by accident. It turned out to be a blessing, because Sendai was too automated for John to learn traditional miso-making there. Moreover, Sendai Miso-Shoyu wanted to send one of their people to the USA to run the new Erewhon miso factory; John would have been his assistant.

1980 June—John and Jan Belleme return from Japan. Not long afterwards, there was an important meeting at Sandy's house in Miami. Now that it was becoming clear that a miso company was actually going to happen, people began to get serious about issues of ownership and money. At the meeting were Michio and Aveline Kushi, Sandy, John Belleme, and Joseph and Patricia Carpenter. Joe Carpenter had no money; he was a handyman who was going to be a worker. Sandy recalls it as a “pretty testy” meeting. Michio looked upon the miso company as “his baby.” His contributions would be “in kind” rather than in money. He would supply the company name: Erewhon Miso Company. Moreover, since he owned Erewhon Trading Co., he stated that the Trading Company would buy all the miso, package it, and distribute it under the Erewhon brand. Barry Evans was not there. In short, Erewhon planned to play an essential role in the new miso company.

After John and Jan returned from Japan, they went right to work building the factory and purchasing equipment. John is a very talented photographer. He took many superb photographs of miso making in Japan then documented the rise of the new miso company on the land in North Carolina.

1981 Sept. 27—Sandy has the “Minutes of an Annual Stockholders Meeting of Oak Feed Miso” (3 pages). It is signed by directors John Belleme, Sanford Pukel, and Barry Evans, all of whom, of course, were in attendance. It refers to the Subscribers Consent Agreement of 16 Aug. 1979 and tells exactly who owns how many shares in the company. With the help of an attorney, Barry got his stock converted to Class A, which enabled him to vote for the first time; he also got on the board of directors. Barry and John together now own the majority of shares. Sandy was, alas, no longer in control. The company needed Barry's money, and his demands were reasonable. The changes seemed inevitable—but it hurt.

In 1981, when it became clear to Michio and Aveline that Erewhon Trading Company was in a financial crisis and needed cash quickly, they appealed to many of their close friends for help. Sandy responded by sending them \$100,000. Nevertheless, on 19 Nov. 1981 Erewhon filed for bankruptcy protection under Chapter 11 of the Federal

Bankruptcy Act. That left Sandy in need of money. Barry Evans invested a considerable sum in Oak Feed Store as part of a complex agreement. For Sandy, the Erewhon bankruptcy couldn't have come at a worse time.

1982 Feb. 26—Sandy Pukel and Barry Evans sign an agreement whereby Sandy gets out of Oak Feed Miso and Barry gets out of Oak Feed Store and Oak Feed Restaurant by an exchange of stock. Barry's financial strength won over, but this left Sandy upset and bitter at Barry. Sandy believes that there was no connection between this event and his lending \$100,000 to Michio. John was torn—caught in the middle. On the one hand, he felt great loyalty and affection for Sandy, and hated to see him out of the new company. On the other hand, he had invested years in the miso company and wanted to see it through to the end. So John continued to work with Barry, and Barry made him an offer he couldn't resist. This conflict strained Sandy and John's relationship for years afterward. About 8-10 years later, Sandy received a beautiful present in the mail of a wooden keg of special miso. It was from John (who had made the miso), accompanied by a nice note as a peace offering, with the hope that the two could renew their friendship.

The idea of the Oak Feed Land Project disappeared when Barry Evans bought out Sandy's interest in the miso company. Sandy basically held a proxy for most of the other investors; when he left, they also left, selling their shares to Barry Evans.

One sidelight: In about 1993-94 Sandy formed a non-profit organization, an offshoot of the Macrobiotic Foundation of Florida, named The Ignoramus Club. Most of the members are people who have been involved with macrobiotics for many years. It had several hundred members who paid \$100 each, including Michio, Herman Aihara, etc. No one had any authority over anyone else. At the meetings, some of which drew 50-100 people to Miami, everyone talked freely about macrobiotics. Resentment and criticisms, as well as gratitude came out. "A lot of people owe a lot to macrobiotics." The Club is no longer active. Address: Owner, Oak Feed Store and Restaurant, 4500 S.W. 63 Ave., Miami, Florida 33133. Phone: 305-446-9036.

4055. Belleme, John. 1999. Update on American Miso Co. (Interview). *SoyaScan Notes*. Nov. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John has worked for years as a consultant for and vice-president of American Miso Co. John is also on the board of directors. Two days a week, he works closely with Greg Gonzales, who has become an excellent maker of koji and miso. Previously Greg had been a dancer from Southern California.

Today their first batch of good corn koji came out. They have been working out the process for six months. He and Greg used it to make a corn miso. Other people who have

used corn in miso have used it in place of the soybeans together with a rice koji. As far as John knows, this is first miso made with corn koji. John also goes to Great Eastern Sun where he is developing new miso products, such as a freeze-dried miso soup—in three flavors.

John thinks the American Miso Company might now be the largest manufacturer of hand-made koji in the world; they produce about 600,000 pounds a year of 5-6 different types of koji which end up in 11 different types of miso. The koji types are: Short-term barley koji, long-term barley koji, mellow barley koji, brown rice koji, white rice koji, corn koji, and soybean koji.

Last year they made soybean miso experimentally for the first time—which was extremely difficult because the carbohydrate content of the soybeans is very low. The trick is to keep the soybean koji from being overrun by bacteria and turning into natto. The soybean miso is now aging.

About a year ago American Miso Co. started selling "miso tamari" in 5 oz and 10 oz bottles. Address: Honto Press, P.O. Box 457, Saluda, North Carolina 28773. Phone: 704-749-9537.

4056. Schultz, Stacey. 1999. Pass the tofu tacos: Soy-based foods are disease fighters, but they can taste pretty weird. *U.S. News and World Report*. Nov. 22. p. 77-78.

• **Summary:** Another typical soy article: Soy is healthy, sales are booming, the stuff tastes awful. During the past year, soyfood sales have increased 35% to \$494 million, largely because of reports of soy's health benefits—many of which are caused by isoflavones. Studies show that older women who consume soyfoods are likely to benefit. In one recent study, post-menopausal women who ate 40 grams of isolated soy protein a day for 12 weeks experienced a 45% decrease in the number of hot flashes.

A sidebar titled "How to fit soy into your diet" gives short descriptions of some "whole soy foods" and the number of grams of protein per serving: Soy milk, whole soybeans (edamame or cooked dry soybeans), miso, textured soy protein, and tofu. A large photo shows many types of prepared soyfoods (not in packages). Contains several factual errors, e.g. soy nuts are high in cholesterol, etc.

4057. Duke, James A. 1999. Isoflavones in kudzu, soybeans, and other plants (Interview). *SoyaScan Notes*. Nov. 25. Conducted by William Shurtleff of Soyfoods Center. [2 ref]

• **Summary:** In a recent search of his FNF (Father Nature's Pharmacy) database, which is now available free of charge at the USDA website, Dr. Duke found that kudzu ("the plant that ate Alabama") is *the* richest known source of daidzein, a key isoflavone, which could be used to treat osteoporosis. Ipriflavone, a synthetic compound widely used for osteoporosis in Europe, turns into daidzein in the gut. Dr.

Duke has kudzu growing on his hillside in Maryland—which his neighbors don't appreciate. "I think if we could find yet another use for kudzu, we might harvest it for estrogenic isoflavones instead of spraying it with estrogenic pesticides. That's been a theme of mine for five years. It also rich in genistein." Dr. Duke and his coworker Peter Calhoun recently looked at 75 legumes in the FNF database for their content of genistein plus daidzein. *Psoralea* is the richest source of daidzein—50 times richer than the soybean—though it is not normally eaten; yet it is used in Indian and Chinese medicine. The soybean is roughly in the middle in terms of total genistein plus daidzein. The statements that the soybean is "the richest source of isoflavones" or "a unique source of genistein, are simply not true.

Nowadays kudzu's scientific name is most widely given as *Pueraria montana* (formerly *Pueraria lobata*). Shortly he will be analyzing an Asian species of *Pueraria* that is also rich in isoflavones.

Fermentation can raise the level of isoflavones. If an alfalfa sprout is inoculated with or attacked by a fungus, it's genistein content will rise 100-fold. The attack makes the living sprout defend itself by producing or eliciting fungicidal compounds (primarily isoflavones) that protect the plant. This response of a plant producing protective / defensive compounds of various sorts is called "fungal elicitation." Most of the genistein data in his FNF database was based on this "fungal elicitation." A stressed plant naturally produces defensive compounds—not just isoflavones. Many legumes do not have a high genistein content until they are "hit with a fungus." Dr. Duke thinks that Asians might get more estrogenic isoflavones from sprouted legumes (such as mung bean or soybean sprouts) than from tofu or miso.

Dr. Duke's favorite soy product is miso; he invariably orders miso soup when he goes to a Japanese restaurant, but he never uses miso at home.

Dr. Duke is considering filing for a patent on use of the daidzein or isoflavones in kudzu to treat osteoporosis. Such a patent might enable him to interest an entrepreneur in battling kudzu productively rather than destructively. Any royalties would revert to an Amazon foundation with which he works.

Jim knows a lactation consultant who firmly believes that longer lactation and breast feeding is one of the best ways of preventing osteoporosis. She thinks that is more important than estrogenic isoflavones in the prevention of osteoporosis. Traditionally, women breast fed longer than they do today. Address: 8210 Murphy Rd., Fulton, Maryland 20759. Phone: 301-498-1175.

4058. Oihankesni, Anpetu. 1999. Life story and work with the South River Miso Co. (Interview). *SoyaScan Notes*. Nov. 29. Followed by a 4-page handwritten letter of Nov.

29. Conducted by William Shurtleff of Soyfoods Center. [1 ref]

• **Summary:** Anpetu (whose name was originally Jeffrey Zellich) was born into a Russian Jewish family and grew up in Philadelphia, Pennsylvania, but later in life, while living with the Lakota Sioux, he was given the name he now uses. He has been involved with macrobiotics since 1973. Before that, in 1971-72, he lived alone in a cabin in the woods in New Brunswick, Canada, gardening and using wild plants. He also lived in a tepee in northern Maine.

In 1973 he went to Boston to study macrobiotics. He lived for a while with Jack Garvey and Jack's first wife. He left to go to Mexico, where he lived for a while with indigenous people (Indians), then in 1974 returned to Boston, where he lived in Jamaica Plain. About 40% of the macrobiotic students in the Boston area at the time were Jewish. He met Hannah Bond through a mutual interest (shared also with Ken Burns) in wild plants. Hannah was older, and came from a Quaker background. She made pickles for Erewhon and was considered to be the best pickle-maker in Boston. He found her to be "the most intellectual woman I had ever met—wonderful." She had formerly been married to a professor of Greek. They went to his cabin in New Brunswick, Canada, she proposed to him, and they were married in 1982—the ceremony took place at the Elwell's land in Conway, Massachusetts. Christian and Gaella had both previously worked at East West Journal, she as an editor and he as an artist, who also illustrated several of Michio Kushi's earlier books. They had also both worked with Alan Chadwick, the legendary teacher of French intensive, biodynamic gardening at the University of California at Santa Cruz.

Anpetu was at the South River Miso Co. in about Oct. 1982 when Thom Leonard came for a month (on contract) to teach the Elwell's how to make miso and use the equipment. Christian and Gaella were married, had a daughter, and owned 64 acres of beautiful land on both sides of the South River. Christian was able to fund the company's start-up with his inheritance; he came from an affluent family and his father had died. He and his brother, Will, initially planned to start the miso company together, but later Will left. At one point the Elwell's approached Michio Kushi to see if he wanted to buy the company. Anpetu and Hannah lived in nearby Conway for 2 years, then on the Elwell's land in a trailer across the river. Another couple, Don and Martha Wheeler, lived upstairs in the miso shop after it was completed. Don and Martha loaned \$10,000 to Christian for the miso company. Anpetu also loaned \$10,000 to the miso company (though no papers were signed), and worked there making miso for 6-9 months; Hannah was not involved with making miso. During that time they published a flyer on miso (dated spring 1983) which Anpetu still has; he designed the logo showing 3 waves in a circle. The waves symbolized South

River and the three stood for the three families who were joining together to create the miso company. He also took quite a few color photos, which he still has. Don and Martha decided to leave first. Then Anpetu's enthusiasm waned and he and Hannah decided to leave.

Anpetu recalls that many big problems took place after this decision. Christian wanted Anpetu and Hannah to leave promptly, and when they would not set a deadline for leaving, Christian took them to court to try to get them evicted. The case went before a local judge in Greenfield; he suggested they work the matter out among themselves, but said that Christian had the basic rights as a landowner. Anpetu and Hannah left one month later, in the fall of 1983. Christian paid him back the \$10,000 without interest over the next ten years. Anpetu and Hannah separated after being married for 7 years.

Today Anpetu lives a very simple life in Hotchkiss/Cedaredge, Colorado, where he runs an heirloom seed company named Sourcepoint Organic Seeds and practices Vipassana meditation. His teacher is Goenka, of Burma.

Note: Anpetu contacted Soyfoods Center today to request a review copy of *The Book of Miso* as announced in the latest edition of *River Currents: News from South River Miso Company (Conway, Massachusetts)*. Address: Founder and owner, Sourcepoint Organic Seeds, 1349 2900 Road, Hotchkiss, Colorado 81419. Phone: 970-872-4971.

4059. Buell, Paul D.; Anderson, Eugene N. trans. and ed. 1999. A soup for the Qan: Chinese dietary medicine of the Mongol era as seen in Hu Szu-hui's *Yin-shan Chêng-yao*. London: Kegan Paul International. 715 p. 25 cm. [Eng]*
 • **Summary:** The book of which this is a translation, published in 1330, is about the food and medicine of the Yuan (Mongol) dynasty (A.D. 1279-1368) court in Peking. During this dynasty, China was ruled by Mongols who had invaded China from the north. Contains a good introduction plus one reference to soybeans and tofu, and many references to jiang (though none of them are indexed under chiang, jiang, or sauce)—some of which were probably soybean jiang (for example, see p. 423; Bream gruel with sauce).

Section 3 (p. 515-17) states: "Soybeans are sweetish in flavor and neutral and lack poison. They decrease demon *qi*, control pain, and drive out water. They expel heat of the stomach, bring down blood stasis, and counteract the poisons of various drugs. They are made into tofu. Tofu is cooling and moves the *qi*." Address: 1. Seattle, Washington; 2. Dep. of Anthropology, Univ. of California, Riverside, CA 92521-0418.

4060. GeniSoy Products. 1999. The magic of soy: Healthy cooking with soy protein. Summertown, Tennessee: The Book Publishing Co. 128 p. Index. 23 cm. [18 ref]

• **Summary:** Contents: Introduction—Experience the magic of soy, about GeniSoy, about soy, soy and heart disease, prevention with soy, soy and cancer, soy and osteoporosis, soy and menopause, choosing soy products, make room for soy. Smoothies and shakes. Breakfast. Breads and baked goods. Sauces, gravies, dips, dressings, and spreads. Soups, salads, and sandwich fillings. Entrees. Desserts.

Contains many vegan recipes for using soy protein isolate, named GeniSoy Soy Protein Powder, made by GeniSoy. GeniSoy was founded in 1997 after its parent company (MLO Products) began to manufacture isolated soy protein products for use in institutional research studies. Address: Fairfield, California.

4061. South River Miso Co. 1999. Miso Happy—See You Tamari (T-shirt). South River Farm, Conway, MA 01341.

• **Summary:** This handsome T-shirt, made of 100% pre-shrunk, heavy weight cotton, comes three sizes (medium, large, extra-large), various colors (incl. deep plum, forest green, beige, black, brick red, and denim), and styles (short sleeve or long sleeve). On the front, in large uppercase letters, are the words "Miso Happy." On the back is written "See You Tamari." Below those words are the company logo and, in smaller letter, the words "South River Miso." These t-shirts are illustrated and described in the company's spring 2000 catalog (p. 2).

Talk with Robin of South River. 2000. March 20. This t-shirt was first available in Nov. 1999. An earlier version, first available in April 1998, had writing on the front only. Over the left breast was written "Miso Happy" and near that was the company's former logo. Address: Conway, Massachusetts.

4062. Elwell, Christian. 1999. Chronology of South River Miso Co. Part I. 1946-1979 (Interview). *SoyaScan Notes*. Dec. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** 1946 Dec. 29—Christian is born at Martha's Vineyard, Massachusetts. His father is a vegetable farmer. When Christian is in grade school, he moves with his family to the Boston area and instead of vegetable farming his father opens a florist and nursery business.

1949 Aug. 3—Gaella (pronounced GAY-luh) is born Margaret B. Jett in Richmond, Virginia. Her family lives in Reedville, Virginia, on the Chesapeake Bay—where she grew up. Her father died when Gaella was 3 years old. Her mother, a school teacher in home economics, remarried to Jennings Butler, a professional fisherman with the menhaden fishing fleet of Reedville.

1969 June—Christian graduates from Cornell University (Ithaca, New York) in landscape architecture.

1969 July—Christian enters Peace Corps training in Morrison, Colorado. His group arrives in Teheran [Tehran], Iran, in Sept. 1969. He serves as a park designer for the

municipal office of the Province of Esfahan, the 17th century capital of Persia. During this time, Christian's father dies of pancreatic cancer at age 51. This event, coupled with his immersion in the traditional aesthetic and religious culture of Iran, precipitated a shift in the main stream of his life. He had graduated from Cornell with ambitions of becoming a landscape architect; he was accepted to enroll at the Harvard graduate school of design upon his return from Iran. But he finished his two years of Peace Corps service in Iran "with an altogether new orientation, burning with questions about the meaning and purpose of life."

1973 spring—Christian returns to the United States for a year. He travels (to the French island of Saint-Barthelemy in the Caribbean for several months, then to California in a Volkswagen bus), studies with a portrait artist in Boston for several months, then studies the teachings of Sri Aurobindu at a center in the Catskill Mountains.

1974 spring—Christian travels to India, where he lives in Pondicherry in association with the Sri Aurobindu ashram and Auroville. After becoming ill with hepatitis, he begins to study alternative health care and healing. After a year in Auroville, he then travels west to Scotland.

1974 May-Sept.—While at the Findhorn community in northern Scotland, Christian meets former students of Michio Kushi (teacher of macrobiotics in Boston), reads the book *Healing Ourselves* by Noboru Muramoto (teacher of macrobiotics in California) and puts its teachings to use—successfully.

1974 Dec. 29—Christian (on his 28th birthday) first attends a lecture by Michio Kushi in Boston. The subject: Right Life. He settles into the macrobiotic community in nearby Brookline and starts to work with the East West Foundation (doing everything from chauffeuring Michio around to helping with their magazine layout and design), while starting Whole Life Arts, a company to distribute French flour mills in the USA.

1976 fall—Gaella arrives in Brookline to study macrobiotics. Works at *East West Journal* as secretary to editor Sherman Goldman.

1976 Nov. to 1977 April—Christian and Gaella first meet at a massage class given by Shizuko Yamamoto. They first talk about making miso for a livelihood at an Irish pub in Brookline Village. While living in Ken and Anne Burns' macrobiotic study house (at the same time as John Belleme; they were good friends) in Brookline, they attend a miso-making workshop by Bill Shurtleff and Akiko Aoyagi. Christian wanted to farm and it seemed that making miso in the traditional way (as he had read about it in *The Book of Miso* by Shurtleff & Aoyagi) would fit into the New England farm cycle as a source of work and income during the cold months. In early 1977 they moved from the Burns' study house to the home of Michio and Aveline Kushi across the street.

1977 late summer—Christian and Gaella go to Covelo, California and work with Alan Chadwick, the legendary teacher of French intensive, biodynamic gardening. He had already left the University of Santa Cruz and set up what he called "The Garden Project" in Covelo. Christian becomes an "apprentice gardener" (later poultry manager) and Gaella is the head cook. They stay for about 6 months, until late 1977. Chadwick "blew up one day—just lost it completely." After that the Project fell apart.

1978 Jan.—Christian and Gaella leave Chadwick's garden and go to study with Noboru Muramoto at the Asunaro Institute in Glen Ellen, California. He is offering a one week "Fermented Foods Workshop" with an emphasis on miso-making. They ended up staying until April, making miso with him. That spring they make 1,000 lb of miso and write an article about it titled "Making miso in America," published in *East West Journal* in Sept. 1978. There they first met Thom Leonard, who comes to visit. Thom had already made some miso and tofu in Arkansas. Though they were together for only 2-3 days, they greatly enjoyed talking about their many mutual interests. "It was a really good connection."

1978 Feb.—Article titled "Learn natural architecture: Conversation at Cornerstones" (with Charlie Wing), by Christian (with photos by William Elwell), published in *East West Journal*. The interview took place in the fall of 1977.

1978 April or May—Christian and Gaella return to western Massachusetts, and with Christian's brother, Will, look for land in the Pioneer Valley region—within the larger Connecticut Valley.

1978 July—Review (by Christian) of five books by Rudolf Steiner published in *East West Journal*.

1978 Aug.—With financial help from their mother, Christian and Will purchase 64 acres of undeveloped land in Conway, Massachusetts, for \$50,000 cash. They name the place South River Farm; South River (20-40 feet wide) runs through the property. They buy the land with the intention of homesteading, that is building their own home, farming, leading a life that is as self-sufficient as possible. While living in a small apartment in the village of Conway, they first build a barn and several cabins, and get a pair of draft horses.

1978 Sept. 9—Christian and Gaella are married at the Old Brick Church in Old Deerfield, Mass. They learn that one of Christian's direct maternal ancestors, John Williams, was the first minister of that church in the early 1700s.

1979 March 15—Thom Leonard and Dick Kluding ladle the first batch of miso into their one-ton wooden vats at the Ohio Miso Co. in Monroeville, Ohio. They had begun construction of the shop the previous October.

1979 May 15—The Elwell's first child, Anna Deerfield Elwell ("Anni," a girl), is born. They are still living in their apartment in Conway.

1979 fall—The Elwells move onto the land from their apartment. They live in a 24-foot-long pink and white trailer. Will is already living on the land in a cabin they built next to the barn. Continued. Address: Founder and Owner, South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

4063. Elwell, Christian. 1999. Chronology of South River Miso Co. Part II. 1980-1982 (Interview). *SoyaScan Notes*. Dec. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1980 Jan.—The Elwells receive a letter from Thom Leonard informing them that the Ohio Miso Co. is for sale.

1980 spring—The Elwells get a \$3,000 grant from the U.S. Department of Energy, Appropriate Technology small grants program—to build a rammed earth house on their property. Fred Hubbard, originally from Cape Cod, hears about this building project through his sister, who was a relative of Christian's, and offers to participate. Unmarried, he arrives in the early summer of 1980 and lives in a tent on the Elwell's land.

1980 May—The Elwells purchase the Ohio Miso Co. for \$10,000 cash from Richard Kluding.

1980 summer and fall—Christian tries to “back out of the miso business.” He feels overwhelmed by all the work that would be required. His brother, Will, who had just met his wife to be, is not sure he wants to be involved in the “miso making adventure.” He decided that he would move off the land in the summer of 1981. Christian approaches Michio Kushi, who owned Erewhon, and talks about Erewhon buying the Ohio Miso company. Michio shows a sincere interest in buying the company and in going to Ohio to look at the equipment and miso—but that never happened. A year later, in Nov. 1981, Erewhon filed for Chapter 11 bankruptcy.

1980 Nov.—With the walls of the rammed earth building finished, Christian and Fred Hubbard drive to Monroeville, Ohio, where they “stuffed the entire Ohio Miso company, all the equipment and 13 tons of miso, into the back of a huge semi truck trailer which a trucking company had delivered.” Each vat contains about 2,400 lb of miso. They empty all of the miso into 5-gallon buckets, then put the intact wooden vats into the truck, then put the 5-gallon buckets (still filled with miso) into the vats. It took 10-14 days to fill the truck. Christian and Fred drive back to South River Farm and a week later the trucking company delivers the trailer one day before a light snow storm. Christian and Fred, with help from neighbor Don Herzig and his tractor, unload the entire contents and store it in their barn—which was across the river.

1980 Dec.—Christian sends a form letter to Ohio Miso Company's former customers that begins: “Dear Friends, old and new: The Ohio Miso Company has changed

ownership. As of November, 1980, the Elwell family has purchased and moved the equipment and present stock of miso to South River Farm in Conway, Massachusetts... Eventually we want to follow a full cycle by growing the grains and beans on our own farmland... We plan to have our new shop ready for the fall season of 1981...”

1981 winter (Feb/March)—Christian sells Ohio Miso out of the barn, loading it onto a horse-drawn sled, pulling it over a logging road through the woods (the river was impassable) to the road and then on to a UPS terminal in Springfield. One of their best customers is Western Mass. Co-ops—which later became Northeast Cooperatives.

1981 June—The Elwells and partners lay the foundation of their new miso shop—1,220 square feet—and begin building a timber frame (post-and-beam) miso shop on their land. The frame is made of big, heavy timbers which are joined together with wooden pegs—no nails. This is an old English and New England method of construction. Christian had planned to construct a less expensive cinder-block building until he met master timber framer Jerry Sawma, who lives in Conway. Christian and Fred work with Jerry all that summer and fall, helping him frame the building and put the shingles on the roof. Fred and Christian take over from there, putting on the walls, etc. They had not finish by winter, so they covered it with plastic sheeting to keep out the snow.

1981 Nov. 29—Christian writes an “Historical sketch” of the South River Miso Co. on its handsome new letterhead: “There, a new shop of traditional timber-frame construction, featuring a wood-fired masonry cooking stove was completed in 1981. Production capacity is 40,000 to 120,000 pounds of miso per year. Barley miso is the standard variety offered. Others include Brown Rice, Corn, and Black Soybean miso.”

1982 Jan. 1—South River Miso Co. is incorporated.

1982 Feb. to spring—Christian was now thinking of running the miso company with two other families on a community basis; they would contribute money, labor, and community/social spirit. Christian's brother, Will, had left in the summer of 1981. Christian invites the other families to come and live on the land and work in the miso company. One couple, from the macrobiotic community in Boston, was Anpetu Oihankeshni and Hannah Bond; they were not married when they arrived but they had a wedding ceremony on the land. The other couple was Don and Marcia Wheeler, who were from families that had lived nearby in the Pioneer Valley for generations. These two couples invest \$30,000 to finish the miso shop and get the company running.

1982 spring—Christian and Fred finish building the miso shop, assisted by Don Wheeler and Anpetu. The total cost of the building was about \$80,000, including Jerry's labor expenses but not including Christian's and Fred's time. Jim Sadler later drew a nice illustration of the 5-part building

from a photograph. The main center part, which has two stories, is where the miso is made; a living space is in the loft upstairs. The koji room protrudes out toward the front. To the right of the main part is the entryway to the shop where the shipping is now done. To the right of the entryway is a 36-foot-long storage building, where the miso vats are stored. Each vat, made of recycled virgin cypress, holds about 7,500 lb of miso. To the left of the main building, under a roof that slopes downward, is more of the miso shop plus storage for smaller miso barrels. To the far left is a firewood storage shed.

1982 Oct. 25—With the miso shop just finished Christian, Gaella, Don Wheeler, and Thom Leonard hold a dedication ceremony then begin to make the first miso (actually barley koji for a 2-year barley miso) at South River Miso Co.—according to the “Production Log” which still exists. Thom arrived (from Baldwin Hill Bakery, which is a 45-minute drive away in Phillipston, Mass.) about a week before this day and stayed for about 3 weeks afterward. Part of the agreement in the purchase of Ohio Miso was that Thom would come to Conway to help them get started and teach them as much as he could about miso-making. It was a friendly and informal arrangement. Christian had to keep telling Thom to wait because it took longer than expected to finish building the miso shop; he was very patient and understanding. The organic barley and soybeans used in the first batches of miso were from Living Farms in Tracy, Minnesota. From 1980-82 Thom had taught miso-making classes in Boston. Earlier in 1982 Christian attended one of Thom’s classes at Baldwin Hill Bakery. As of December 1999 Thom has a very nice bakery in Salinas, Kansas, and he is very happy—part of a nice community. The first miso at South River is put into recycled oak whiskey barrels, purchased from Ohio Miso Co. Muramoto also used such barrels and Thom may have gotten the idea from him. The barrels had been burned on the inside so the charcoal would improve the flavor of the whiskey as it aged; the charcoal had to be scraped off before the barrels could be used for miso. Small batches went into the smaller whiskey barrels; larger batches went into cypress wood vats. Christian recalled in 1999: “Thom told me during the first week, as we were washing and soaking soybeans, ‘Miso making is about creating order. That is the main thing to keep in mind here in the shop: to create and maintain order.’ This was his way, in the spirit of Zen food craft, of breaking through the glamour and mystique of miso making.”

Gradually the men used the two horses and cart to move the miso barrels and vats from the barn, across the river, and into the new storage building that was part of the miso shop. By that time Christian had sold most of the miso made in Ohio.

1982 winter—Anpetu and Hannah live above the shop that winter; the Elwells live across the river—before there was a bridge over it. Christian would walk through the ice

cold water early each morning (until the river froze) to get the fires started each morning. Continued. Address: Founder and Owner, South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

4064. Elwell, Christian. 1999. Chronology of South River Miso Co. Part III. 1983-1999 (Interview). *SoyaScan Notes*. Dec. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1983 spring—The miso company sends out a very interesting and poetic hand-lettered, dated leaflet and price list. The front panel, with a logo of three waves in a circle, announces the availability of three kinds of miso: Mellow Barley (6 weeks), Mellow Brown Rice (6 weeks), and Mellow Flint Corn (8 weeks). “South River Farm is the coming together of three families seeking common livelihood.” A pie chart shows the company’s costs.

1983 summer—The first in-depth story about the miso company, with five good photos, appears in *Soyfoods* magazine. The article states that the company (whose name is incorrectly given as “South River Farm Miso Company”) is owned by three families, and the names of the six owners are given. Actually, however, Christian and Gaella were (and have always been) the company’s only legal owners.

1983 fall—The community idea fails after one miso season (1982-83). The Wheelers leave first. Anpetu and Hannah leave in the fall of 1983; Anpetu writes a sad poem about falling leaves as they part. It takes the Elwells 10 years to repay the money the other two families had invested.

1983 Sept.—Christian goes to Charlie Kendall, who lives nearby, and asks if he can supply Charlie with rice koji for the amazake he makes. Charlie had been buying all his rice koji, dried and in bulk, from Miyako Oriental Foods in California. Christian offered to match Miyako’s price and make the koji from organic rice. Christian was already making rice koji for his red miso and he needed more customers. After making many trial batches and building a koji dryer, Christian begins supplying Charlie with 900 pounds (three 300-lb batches) of koji at a time. Also that second miso season (1983-84) the first apprentice, Sonia Schloeman, works at the miso shop; Christian needs help and Sonia needs a place to stay. He pays her a salary and she stays in the loft above the shop. After Sonia leaves, the Elwells move into the loft above the shop. The second intern was Dan Hornack, who came all the way from Aspen, Colorado. From then on the arrangement was room (in the cabins across the river) and board plus a small stipend in exchange for the apprenticeship. Other apprentices who worked in the shop over the years have included (in chronological order) Rich Sweitzer and Susan Gribbon (later to marry), Michelle Gemme (Montreal, Canada), Don Phillips, Michael Dessen, Tim Langdon, John and Mary

Granger, Caroline Wurts, Maggie Smith, Andrew Goodman, Tolly Gibbons (New Zealand), Anne Walsh Sullivan, Bobby (age 18 and white, from South Africa), Sean LePoutre, Maria Low, Kamil Bersky (a medical doctor from the Czech Republic), and Stephen Jannetta. Stephen worked at the shop for two seasons (Oct. 1990 to May 1991, and Sept. 1993 to May 1994), then helped others (Soyalab, and La Fonte della Vita) to start commercial miso production in Italy. His brother, Phil Jannetta, worked for Mitoku in Tokyo. Most apprentices stayed for one full miso season. Gaella cooked for everyone.

1983 Oct. 17—Isaiah, the Elwell's second child is born.

1983 Nov.—The company runs its first ad (1/3 page vertical) in *East West Journal*. The theme: "Wisely given miso gives its own wisdom." An illustration at the bottom shows the miso shop buildings. A logo at the top shows three waves in a circle.

1985—Starting this year, a group of students from the Kushi Institute at Becket, Massachusetts (which is about 1½ hours drive away) comes to visit to miso shop—even though Christian has had no personal connection with the macrobiotic movement for many years. Over the years, the number of groups has increased to 3-4 a year. In the early years, Christian would give a slide show and talk on miso-making. Now they usually come on a weekend and take a tour of the shop when it is not in production, and Christian will share with them what he has learned about miso.

1989-90—The Elwells, with the help of Fred Hubbard, design and begin building a timber-frame home located behind the miso shop—about 12 feet away from it. For the previous 5 years they had lived in the loft above the miso shop. Fred eventually built his own home in Conway, where he now resides as a carpenter and builder.

1991-92—The Elwells stop taking apprentices and start with paid workers. There was a difficult period of transition as Christian began to tire of working in the shop. Workers include Larry Glanz, a former student who worked with Muramoto-sensei and Stephen Jannetta.

1995 Aug.—Christian seriously considers selling his miso company to Barry Evans, owner of American Miso Co. and Great Eastern Sun in North Carolina. He had taken training to become a Waldorf School teacher. But this would require the Elwells to give up their land, and although it was quite isolated, they did not want to leave it.

1995 fall—Yukio Doyama begins to work at the miso company, a happy, hard-working man who enjoys making miso. At the same time, Steve Freiman comes to live above the miso shop and work with Yukio. Christian was now freed up for an extended time from day to day production and packing work; he began taking a more supervisory role and handled most of the office work and shipping. Andy Mathey followed in Steve Freiman's position, working with Yukio.

1996-97—This fiscal year the miso business is computerized. In late 1997 Christian decides not to sell the miso company, and to invest much more energy, time and resources in it—"to make it come alive again" after a period of hibernation. "When we clear up things inwardly, this is reflected by outward things." Quickly, all sorts of good new things begin to happen.

1998 Feb.—The first issue of *River Currents: News from South River Miso Company* is published. This attractive newsletter contains a catalog and order form, plus news about miso and the company.

1997-98 fall and winter—Three young people come to live at South River Farm to cultivate the land—and to work on forming a community. Arthur Lerner comes first, then his partner, Emily Kellert, and soon after, David Fisher. That winter these three also work part time in the miso shop. Robin Cole, a friend of many years, arrives in early spring of 1998 and creates the position of office manager/administrative assistant.

June 1998—The Elwells and coworkers finalize a mission statement for the miso company after three months of weekly meetings. It is published in the winter (Dec.) 1998 issue of *River Currents*.

1999 Sept.—The apprenticeship program is reinstated; Maria Rossi is the first to fill the position.

1999 Dec. 16—Christian says that the miso company, about to enter its 21st year or adulthood, is taking on a life of its own. Gaella was never a regular miso maker in the shop. In the early years she was a full-time mother and cooked hundreds of meals for builders and then miso apprentices. Her role has always been one of moral support. This year she does work in the shop two afternoons a week on the packing crew. The many new people are contributing to the growth of the miso company as a "learning organization" (see *Fifth Discipline*, by Peter Senge).

South River Farm is now moving in the direction of being home to self-sustaining farmstead—"as the place in which South River Miso is planted." David Fisher has built a pole barn, gotten draft horses, pays a modest lease, and sells his organic produce. Address: Founder and Owner, South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

4065. Yoshihara, Lulu. 1999. Re: Update on Shin-Mei-Do Miso Company. Letter to William Shurtleff at Soyfoods Center, Dec. 17. 1 p. Handwritten, with signature.

• **Summary:** Last May, Lulu and Yoshi went to visit their miso mentors at Maruman Miso Company in Iida City, Nagano prefecture, Japan. Their factory was completely rebuilt. They also have a very attractive booklet describing research on the health benefits of miso—all in Japanese. Lulu is now in her third year of studies at the University of Victoria, working towards a degree in Pacific and Asian studies, with a concentration in Japanese. Their eldest son,

Hikari, is at the University of California at San Francisco doing a PhD in molecular biology.

Yoshi continues to make miso the way he always has, slow and steady. Gradually Shin-Mei-Do has more Japanese customers seeking out their miso, but the health food stores are their mainstay. The company's new website is Shinmeidomiso.com.

Their friend Jerry Lewycky is "getting into miso in a big way. He should be very successful. Sincerely, Susan Marie (aka Lulu) Yoshihara."

Talk with Yasuo (nickname "Yoshi") Yoshihara. 2000. Jan. 13. Lulu's maiden name is Susan Marie Pritt. Jerry Lewycky (pronounced le-WIK-ee) used to run a wholesale company in Toronto that used to distribute Yasuo's miso. He sold his company, studied miso making with Yasuo for about a week, then started to make miso last summer in Claremont (near Toronto), Ontario. He wants to run a small company that makes miso in the traditional way. Yasuo does not consider Jerry a competitor. Address: Shin-Mei-Do Miso Co., 3906 Wren Rd., Denman Island, BC, Canada, V0R 1T0. Phone: 250-335-0253.

4066. Skiff, James. 1999. New Japanese law concerning labeling of foods made with genetically engineered ingredients (Interview). *SoyaScan Notes*. Dec. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Jim is aware of this Japanese law, which was passed in Oct. 1999 but does not take effect until 1 April 2001. Jim Echle, head of the American Soybean Association office in Tokyo, told Jim about the law; Echle is extremely receptive to the needs of his Japanese customers, such as tofu makers. ASA is also getting more involved with issues involving identity preserved (IP) soybeans; they are organizing an IP conference on Jan. 17 in St. Louis, Missouri.

Skiff then faxes Shurtleff a provisional translation of the labeling guidelines, in the form of a 1-page table. The translation was done by ASA-Tokyo and sent to Skiff by Jim Echle. There are three columns: (1) Classification of food: A. Not equivalent to conventional foods with regard to composition, nutrients, or intended use. B. Equivalent to conventional foods, but modified DNA or protein produced therefrom remains after the manufacturing process. C. Equivalent to conventional foods, but modified DNA or protein produced therefrom is removed or decomposed and no longer exists in the in the final food. (2) Examples of the three types of foods: A. High oleic acid soybean oil. B. Tofu and tofu products, soybean sprouts, natto, soymilk, miso, soybean flour, roasted soybeans, corn, popcorn, potatoes, etc. C. Soy sauce, soybean oil, high fructose corn syrup. (3) Method of labeling: "Soybean (genetically modified),..." Address: US Soy, 2808 Thomason Dr., Mattoon, Illinois 61938. Phone: 217-235-1020.

4067. Kerlin, Katherine. 1999. Soy baby blues: Can we trust alternatives to milk-based formulas? *E Magazine*. Nov/Dec. p. 42-43.

• **Summary:** Babies handle the phytoestrogens in soy-based infant formula differently than adults. Half the phytoestrogens in adult bodies are freed into the bloodstream to bind to estrogen receptors, but in infant bodies less than 5% are available to bind to receptors. It is not clear how the remaining phytoestrogens affect infants.

On 1996 Dr. Kenneth Setchell studied five leading brands of soy-based infant formula. He found they contained the phytoestrogen levels equivalent to several contraceptive pills each day, about 6 to 11 times the amount needed to alter the menstrual cycle.

According to Dr. Naomi Baumslag, professor of pediatrics at Georgetown University Medical School [Washington, DC], infants consuming soy-based formula are 2-3 times more likely to develop thyroid disease than if they were cow's milk formula or breast milk.

Another concern is the genetically engineered soybeans used in infant formula. "But before you throw out your miso soup and Tofutti ice cream, remember that soy has many positive benefits." Address: Journalism student at Univ. of Missouri and intern at E Magazine.

4068. Key, T.J.; Sharp, G.B.; Appleby, P.N.; Beral, V.; Goodman, M.T.; Soda, M.; Mabuchi, K. 1999. Soya foods and breast cancer risk: a prospective study in Hiroshima and Nagasaki, Japan. *British J. of Cancer* 81(7):1248-56. Dec. *

• **Summary:** The association between soya foods and breast cancer risk was investigated in a prospective study of 34,759 women in Hiroshima and Nagasaki, Japan. Women completed dietary questionnaires in 1969-1970 and/or in 1979-1981 and were followed for incident breast cancer until 1993. For miso soup, relative risks were 1.03 (0.81-1.31) for consumption two to four times per week and 0.87 (0.68-1.12) for consumption five or more times per week, relative to consumption once a week or less. Thus, women who consumed miso soup five or more times a week were 13% less likely to get breast cancer than those who consumed it once a week or less. The reason for this protective effect is not known.

4069. *River Currents: News from South River Miso Company (Conway, Massachusetts)*. 1999. Meet Yukio Doyama. Winter. p. 2. Dec.

• **Summary:** Yukio was born in Tokyo, Japan, in 1949. This fall marks his fifth consecutive season as a miso maker at South River. "This kind and energetic man has brought a great deal of stability and continuity to our company. If you are grateful for its existence, you can be sure he has a lot to do with it." A photo shows Yukio. A sidebar shows a small photo of Maria Rossi, who is now an apprentice at the company.

Other photos in this issue show: (1) The miso shop and the Elwell's house in the winter, decked with snow at evening. (2) Six steps in the miso-making process. (4) Six jars of different types of miso.

4070. Ang, Catharina Yung-Kang Wang; Liu, KeShun; Huang, Yao-Wen. 1999. *Asian foods: Science & technology*. Lancaster, Pennsylvania: Technomic Publishing Co. 546 p. See p. 468. Illust. 24 cm. *

• **Summary:** Page 234: In Korea, meats are often flavored with *denjang*, a fermented soybean paste. *Gochu jang*, is a very hot fermented chili paste. Tofu is called *tofu*.

4071. Bladholm, Linda. 1999. *The Asian grocery store demystified: A food lover's guide to all the best ingredients*. Los Angeles, California: Renaissance Books. 234 p. Foreword by Jonathan Eismann. Illust. Index. 23 x 13 cm. Series: A Take it With You Guide.

• **Summary:** An original, well-researched and well-written book—though some of the terminology (such as “beancurd”) is outdated. Soyfood products include: Beancurd noodles (p. 38). Kinako (p. 47). Soy sauce, mushroom soy sauce, kecap manis (p. 53). Hoisin sauce (p. 54).

Chapter 10, titled “Soybean products” (p. 93-99) includes: Black bean sauce, dried soybeans, tempeh, beancurd (pressed beancurd, deep-fried beancurd, savory grilled beancurd {yaki-tofu}, freeze-dried beancurd {koyadofu}, bean curd sheets {yuba}), fermented beans (preserved black beans {tau see}, bean sauce, toen-jang, chili/hot bean sauce, fermented beancurd), okara, edamame, soybean sprouts, soy milk.

Note: This is the earliest English-language document seen (March 2009) that uses the word “toen-jang” (or “toen jang”) to refer to Korean-style soybean jang (miso).

Concerning preserved black beans: “Also called salted or fermented black beans or ‘tau see,’ this is made by steaming small black soybeans, then fermenting them with salt and spices. Used in a variety of dishes to add a pleasant rich aroma and salty taste... Crush or mash beans slightly to release more flavor or mix with garlic, fresh ginger, or chilies. Available in small glass jars, cans, and plastic bags. They should feel soft and not be dried out... Look for Pearl River Bridge brand labeled ‘Yang Jiang Preserved Beans’ in a 1-pound yellow canister, and Koon Chun Sauce Factory, Double Parrot, and Zu Miao Trademark brands all in 8-ounce bags.” Note: This is the earliest English-language document seen (Oct. 2008) that uses the term “tau see” to refer to Chinese-style soy nuggets (preserved black beans).

Concerning bean sauce: “Varieties of this Asian staple include yellow bean sauce, brown bean sauce, bean paste (tau jeong), or sweet bean condiment. All are made from yellow or black soybeans, fermented with salt and in the sweet Northern Chinese type, with sugar-sweetened crushed yellow [soy] beans. Two forms are found: whole beans in a

thick sauce and bean paste, which is mashed, ground or pureed beans. The whole bean type has a rounder flavor and adds texture, while the pastes are very salty and should be used sparingly... The yellow bean paste is tau cheo... Sold in glass jars and cans. Look for Koon Chun Sauce Factory, Kon Yick Wah Kee bean sauce, Amoy, or Yeo's.

Chapter 18, titled “Japanese food products” (p. 168-81) includes: Tsukemono (pickled in miso), miso paste, shiromiso, akamiso, mamemiso, natto, miso soup, noodle dipping sauce base (memmi), tamari sauce, teriyaki sauce, tonkatsu sauce.

Interesting non-soy products include: Sesame paste (p. 57). Satay sauce (with peanuts), gado-gado-dressing (p. 58). Peanut oil (p. 64). Sesame oil (p. 65). Amaranth (vegetable, p. 72). Winged beans (p. 76). Pickled wheat gluten (p. 108). Sesame seeds, peanuts, roasted peanuts (p. 118). Red/azuki beans, agar-agar (p. 121). Wheat gluten (p. 127). Sesame candy, peanut roll (p. 136). Sesame seed and peanut cookies (p. 137). Sweet red bean paste (azuki *an*, p. 139). Coix seed (Job's tears, p. 165). Japanese seaweed and kelp (p. 169-70). Umeboshi (p. 171). Fu (dried wheat gluten cakes), mochi (p. 177). Address: Writer, designer, illustrator and photographer, Miami Beach, Florida.

4072. Davidson, Alan. 1999. *The Oxford companion to food*. New York, NY and Oxford, England: Oxford University Press. xviii + 892 p. Illust. by Soun Vannithone. Index. 29 cm. [1500+* ref]

• **Summary:** The 2,650 alphabetical entries in this excellent encyclopedia and cornucopia represent 20 years of Davidson's work. The 175 illustrations by Laotian artist Soun Vannithone are superb. There are 39 longer entries about staple foods such as rice, noodles, and apples. A comprehensive bibliography provides access to further information. The book does not contain recipes.

Soy-related entries include: Bean sprouts (p. 64). Black beans, fermented (*chi*, p. 79). Kecap (Indonesian soy sauce, made “basically from soya beans and palm sugar only.” “The word ‘kecap’ has passed into the English language as catchup or catsup and then as Ketchup, which now means something quite different.” p. 429). Ketchup (“probably via the Malay word *kechap*, now spelled *kecap*, which means soy sauce. The word was brought back to Europe by Dutch traders who also brought the oriental sauce itself. The sauce has changed far more than has the word, although the name has appeared in a large number of variations such as catchup and catsup.” Discusses tomato ketchup, mushroom ketchup, and ketchup made from oysters, mussels, walnuts, etc., p. 430-31). Koji (p. 435). Lecithin (p. 447). Miso (p. 509). Natto (p. 530). Soybean (p. 739). Soy milk (p. 739-40). Soy sauce (p. 740). Tempe (or tempeh, p. 788). Tofu (p. 798-99). Yuba (p. 860-61).

Also discusses: Alfalfa (p. 10). Almond (p. 12-13, incl. “almond milk”). Amaranth (p. 13). American cookbooks,

history (p. 15-17). Azuki beans (p. 44-45). Barley, barley breads, and barley sugar (p. 58-60). Beef-BSE (mad cow disease, p. 68). Chia (p. 166). Cowpea (p. 230-31). Chufa (p. 185). English cookery books, history (p. 276-80). Five grains of China (p. 305). Gluten (p. 341). Groundnuts (or peanuts, p. 356-57). Hemp (p. 377-78). Hydrogenation (p. 391). Japanese culinary terms (p. 415-17). Kudzu (p. 437). Linseed (p. 454-55). Lupin (p. 463). Margarine (p. 478-79). Mung bean (p. 518). Nori (p. 534). Noodles of China (p. 537, incl. "Gan si {soya bean noodles}" and "Fen si {also fen-szu} {mung bean vermicelli})." Oncom (p. 553-54). Quark (p. 644). Quinoa (p. 645). Seaweeds (incl. hijiki, kombu/konbu, nori, wakame, etc., p. 712). Sesame (p. 713). Shortening (p. 721-22). Sprouts (no listing). Tahini (p. 779). Toast (p. 797, incl. Melba toast). Ume and umeboshi (p. 817). Winged bean (p. 849). A brief biography and nice portrait photo of Alan Davidson, a man of extraordinary knowledge in the world of food, appear on the rear dust jacket.

Note: The paperback edition of this book (2002) is titled *The Penguin companion to food*. Address: World's End, Chelsea, London, England.

4073. Hagler, Louise. 1999. Meatless burgers: Over 50 quick and easy recipes for America's favorite food. Summertown, Tennessee: Book Publishing Co. 94 p. Illust. Index. 23 cm.

• **Summary:** A vegetarian cookbook. Contents: Introduction. Glossary of ingredients. Bean & grain burgers. Soyfood burgers: Tofu, tempeh, textured soy protein & soybeans. Vegetable burgers. Burgers with an ethnic flair. Accompaniments. Buns. Side dishes. Nondairy shakes. Address: Summertown, Tennessee.

4074. Hanamaruki Foods Inc. 1999. International cooking with miso (Leaflet). Nagano Prefecture, Japan. 1 p. Front and back. 30 cm. [Jap]

• **Summary:** The front of this color brochure is in English and the back is in Japanese. On each side are four recipes: Miso soup with nameko mushrooms and tofu bean curd. Tonjiru. Eggplant and pork fried in miso. Miso-flavored bouillabaisse. Address: Hirade 1560, Tatsuno-cho, Kamiinagun, Nagano-ken 399-0422 Japan. Phone: 0266-41-1321.

4075. Jue, Joyce. 1999. Asian flavors. Alexandria, Virginia: Time-Life Books; Menlo Park, California: Oxmoor House. 111 p. Illust. (photos by Richard Eskite, some color). 26 cm. Series: Williams-Sonoma Lifestyles. *

• **Summary:** Joyce Jue, who created the recipes, was born in 1947.

4076. Jûyô dôko chôsa hôkokusho: Shiyokuse-1998-Misosei [Research report on consumption trends: Saltiness characteristics-1998-Essence of miso] 1999. Tokyo:

Chushô Kigyô Jigyôdan Chôsa Kokusai-bu Chôsa-ka. 277 p. 30 cm. [Jap]*
Address: Japan.

4077. Klingel, Brigitta. 1999. Gesundheit fuer die Zellen-Soja-Lezithin [Health for the cells-Soya lecithin]. Munich, Germany: Suedwest Verlag GmbH. 96 p. Illust. (color photos). Subject index. Recipe index. 21 cm. [9 ref. Ger]
• **Summary:** A popular introduction to lecithin, with basic information about other soyfoods and vegetarian recipes. Contents: Lecithin-The multitalented. Soya lecithin. Help for the heart. Lecithin lowers blood cholesterol. Mental and bodily top fitness. Beauty thanks to lecithin. Soyfood products: Dry soybeans, soymilk, yuba, okara, tofu, tempeh, miso, soy sauce, soy sprouts. Recipes with lecithin. Address: Germany.

4078. Miso [Miso]. 1999. Tokyo: Shibata Shoten. 109 p. Illust. (some color). 24 cm. Series: Shibata Books. [10+ ref. Jap]*
Address: Japan.

4079. Miyoshi, Motoharu, 1999. Kore de wakaruru honmono mizu shio miso shôyu: mô damasarenai nani ga honmono nanoka sono kijun o zubarî to shimeshita [This books enables you to understand the real water salt, miso and shoyu: No more being fooled. What is the real thing? This book shows the nature of real things very directly and truthfully]. Tokyo: Tsukiji Shokan. 122 p. 19 cm. [Jap]*
Address: Japan.

4080. Moosewood Collective. 1999. Moosewood Restaurant daily special: More than 275 recipes for soups, stews, salads & extras. New York: Random House; Clarkson N. Potter. 384 p. *

4081. Murakami, Ryû. 1999. Miso soup [Miso soup]. Translated from the Japanese by Corinne Atlan. Arles, France: Editions Philippe Picquier. 237 p. 21 cm. [Fre]*
• **Summary:** A novel. The author was born in 1952.

4082. Okura Boeki-cho (Ministry of Finance, Division of Trade). 1999. Miso yûshutsu tsûkan jisseki-Heisei 10 nen [Japan miso exports worldwide in 1998]. Tokyo, Japan. 1 p. [1 ref. Jap]

• **Summary:** This 1-page table, written in Japanese, gives the exports of miso to various countries, in calendar year 1998, by region. We will list them here in descending order of volume by region-in kilograms. Asia: Taiwan 349,591. Hong Kong 332,325. Korea 232,115. Singapore 120,681. Thailand 100,459. Philippines 44,605. Malaysia 40,129. Indonesia 26,585. China 23,024.

Middle East: United Arab Emirates (*Arabu*) 9,895. Israel 4,887. Kuwait 1,256.

Europe (Western and Eastern): Netherlands 115,703. Germany 102,724. England 74,231. France 45,971. Sweden 40,170. Italy 20,283. Belgium 17,932. Austria 13,370. Spain 6,118. Denmark 4,090. Canary Islands (Spain) 2,000. Russia 1,715. Finland 1,310. Switzerland 450.

North America: United States: 2,297,893. Canada 242,240.

Latin America: Argentina 12,589. Brazil 12,338. Costa Rica 400.

Africa: South Africa 2,678.

Oceania: Australia 164,601. Guam 31,553. New Zealand 27,621. Mariana Islands 6,578 (of which the largest is Guam). Palau Islands 650. Note: This is the earliest document seen (July 2008) concerning soybean products (miso) in Palau; soybeans as such have not yet been reported.

Total exports. 4,531,300 kg. Total amount of miso made in Japan in 1998: 548,750,000 kg. Percent of miso made that is exported: 0.82%. Address: Japan.

4083. Zenkoku Miso Kogyo Kyodo Kumiai Rengokai (Japanese National Miso Association). 1999. *Okazu miso gokuraku zukan* [Illustrated heavenly miso side dishes] Tokyo: Shoshinsha. 115 p. 21 cm. Series: *Cooking & Home Made; Asobitsutuski*. [Jap]*
Address: Japan.

4084. Deane, Donna. 2000. Get more soy in your life: Doctors say soy is good for you. So come on, get started. *Los Angeles Times*. Jan. 12. p. H1, H3. Food section.
• **Summary:** Discusses tofu, miso, edamame, soy sprouts, and roasted soybeans, with recipes for each. *Edamame*, or soybeans in the shell, are becoming popular, partly because they are fun to eat, tasty, and rich in protein. They are showing up in Asian restaurants and appetizer menus, and can be found in specialty and health food stores, and in the produce section of some supermarkets and farmers markets. A photo shows edamame. Address: Times Test Kitchen Director.

4085. Jannetta, Stephen. 2000. Re: Making miso at South River Miso Co. in Massachusetts, and at Soyalab and La Fonte della Vita in Italy. Letter to William Shurtleff at Soyfoods Center, Jan. 12—in reply to inquiry. 2 p. Typed, with signature on letterhead.
• **Summary:** Stephen worked with Christian Elwell at South River Miso Co. in Conway, Massachusetts, for two seasons: (1) Oct. 1990 to May 1991, and (2) Sept. 1993 to May 1994. After the first season he traveled to Italy.

The first miso that he produced in Italy was for Soyalab (located near Florence) during a period between February and May of 1992. This was basically experimental. They made about 500 kg of shiro miso and about 1,500 kg of barley miso. The shiro miso was packaged [in 350 gm glass

jars] and distributed under the Soyalab label in the spring of 1992.

Soyalab was purchased by La Fonte della Vita (located near Cuneo, Italy) in 1994 and Stephen went there in October of that year after his second season at South River Miso Co. He began production the third week of November and finished the last week of April 1995. He had to start from scratch [since the equipment from Soyalab was jury-rigged and small]. The equipment had to be designed and fabricated—everything from a large-capacity stainless steel steamer to the miso fermentation vats and koji crib. Some things had to be improvised. For instance, they had a small, free-standing movable “office,” about 7 by 11 feet, which Stephen insulated with foam board and used as a koji incubation room.

“In total [at La Fonte della Vita] we produced approximately 13,000 kg of barley miso and 2,100 kg of rice miso using organic soybeans and grains, and sea salt. All the miso produced at both companies was made from organic soybeans and grains. Also at about this time the 1,500 kg of barley miso that was produced at Soyalab in 1992 was packaged and distributed, I believe, under the Soyalab label.”

Stephen encloses 24 color prints, each 4 by 6 inches, all taken at La Fonte Della Vita (60 miles southwest of Torino) in 1995. These include: (1) Exterior view of the factory. (2-3) Stainless steel steamer and mixer used to combine koji and sea salt. (4) Wooden koji crib on wheels next to grain steamer. (5) Koji cooling tables (waist height). (6) Koji crib by koji incubation room with wooden trays inside. (7) Stephen harvesting koji from one tray. He is wearing a hair net, plastic gloves, surgical mask (he developed allergies, perhaps to the mold spores), and white robe. (8) Close-up of a chunk of koji held in one hand. (9-11) Barley koji in a wooden tray—at 3 stages of development. (12-13) Stephen foot treading raw miso. (14) Using a forklift to transport raw miso to aging vat. (15-18) Stephen shoveling raw miso into vat—4 views. (19) Stephen standing next to first vat, filled with 4,200 kg of barley miso. The top of the vat is at eye level. (20-21) Moving the third vat into place using a forklift. The two vats behind it are filled with miso and weighted with concrete blocks. (22) Looking down into an empty wooden vat. (23) Domenico, a maintenance man and co-worker, waving, with vats in the background. (24) A small vat used for 2,100 kg of rice miso.

Talk with Stephen Jannetta. 2000. Jan. 20. Soyalab was founded by Matteo Iacovelli. Then Marco Lamonica arrived, bought the company, and ran it for 2-3 years. He got some encouragement, ideas, and help from his friend Martin/Marty Halsey, an American who was active with macrobiotics and lived for a while in Italy; Marty also worked for quite a while with the macrobiotic institute in Switzerland [and founded and ran Soy Joy in Nyon, where he made tofu {from 1982} and miso {from 1983}]. Stephen

does not know who Marcello Panchetti was; he may have provided financing for the company. Address: 349 W. Woods Dr., Lititz, Pennsylvania 17543. Phone: 717-626-2049.

4086. Photographs taken at South River Miso Co. 2000. Conway, Massachusetts.

• **Summary:** These three color photographs (each 5 by 5 inches) were sent to Soyfoods Center on 13 Jan. 2000 by Christian Elwell. All three have appeared (in black and white) in past issues of South River Miso Co. newsletters and brochures. They show: (1) The miso shop and the Elwell's house in the winter, decked with snow at evening; white smoke rises from four chimneys. Superb photo—by Will Elwell! (2) Christian Elwell, standing by a wooden door wearing a blue bandana head-cover, rimless glasses, and a white apron. On the wall is a small color framed painting of the Madonna and child. These first two are from: A gift from the gods (Brochure; March 1988).

(3) A view from the east in the fall showing the miso shop and home surrounded trees and bushes. The sumac bushes in the foreground are brilliant red. From: *River Currents* newsletter (Winter 1998, December). Address: Conway, Massachusetts.

4087. Lewycky, Jerry. 2000. Starting a new miso company in Canada (Interview). *SoyaScan Notes*. Feb. 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Jerry (whose last name is pronounced luh-WIK-ee) learned how to make miso from Yasuo Yoshihara. He started making miso in April 1999 and now has about 20,000 lb “brewing” in vats, each of which contains about 7,000 lb of raw miso. He has two vats full of 2-year barley miso and one vat full of 2-year brown rice miso. These will be ready for sale in the fall of 2000. He would also like to make a short-term white miso. He has not yet decided the name of his company, but he is considering “Miso Tradition.” Jerry also has another miso teacher—Don DeBona. He visited Don several times in North Carolina—after he was no longer employed by American Miso Co.—and Don visited Jerry once in Claremont, Canada; he has been very helpful. Don still lives in his house right beside the miso factory in Rutherfordton, and is now working as a forest ranger for the Forest Service in North Carolina, but he has expressed an interest in making miso again, perhaps with Jerry. Jerry has traveled to Japan several times when he was co-owner of Timbuktu Natural Foods. He sold the company for a good price to a guy who bought it hoping to make a lot of money; he ruined the company. Jerry plans to sell his miso in glass jars. He believes he can take over much of the Canadian miso market now owned by South River Miso Co., because their miso is very expensive in Canada. Address: R.R. #4-2090, Claremont, ON L1Y 1A1, Canada. Phone: 905-649-1988.

4088. Purvis, Kathleen. 2000. Say soy! New foods and drinks keep sprouting from these magic beans. *Post-Dispatch* (St. Louis, Missouri). Feb. 14.

• **Summary:** Perhaps the tastiest form of soy is edamame. These green soybeans, boiled, salted, and served chilled, are the “latest craze in the chi-chi [“chic”] cocktail set.” In Japan they are served as snacks with beer or sake.

In the six months before June 1999, sales of soyfoods have grown 34.4%, according to data from SPINS. Sue Havala notes that soymilk is now available at mainstream food stores / supermarkets. A full-page color photo shows bright green edamame, with the pods both opened and closed. Contains four recipes and a glossary of the following: Green soybeans, soymilk, soy flour, soy nuts, canned soybeans, soynut butter, miso, tofu, tempeh, soy sauce. Address: Knight Ridder Newspapers.

4089. Ono, Tadashi; Bittman, Mark. 2000. The chef: A glossy coat of miso adds flavor to a steak. *New York Times*. Feb. 16. p. F5 (L), col. 1.

• **Summary:** “During the last few years, fish marinated in miso has become a popular dish in restaurants all over town.” Contains a recipe for Beef with miso-chili glaze. Address: 1. Chef, Sono Restaurant, Manhattan, New York.

4090. Jessop, Doug; Mullin, John. 2000. How their Canadian miso won a prize in the Japanese miso contest (Interview). *SoyaScan Notes*. Feb. 28. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Canada has been working for many years to develop food-grade soybeans that are especially well suited for making Japanese soyfoods, such as miso. This year Doug and John entered their miso in the Japanese national contest and won two Special Participation awards. Doug explains: They started by making miso using three Canadian soybean varieties: Harovinton (released in 1989), AC Onrei (released in 1997; “AC” stands for Agriculture Canada), and AC 756 (a double lipoxigenase null variety). They made miso from each of these three soybean varieties and sent it for evaluation to the Nagano Research Institute. NRI said that, of these three, the miso made from the AC Onrei variety was the best, so they concentrated on making miso from that soybean for competition. AC Onrei is a very large-seeded, long-season, white hilum, buff colored soybean, one of whose parents is Enrei—a large-seeded Japanese variety. Most of the miso they entered was red miso; some of it was rough (unground) and some was finished/fine (smooth/ground). They entered their miso in two different contests: The All-Japan content and the Nagano contest, and they won an award for each. This was surprising because AC Onrei was not bred as a miso-type soybean; it has a high protein content and was originally developed as a soymilk and tofu bean. For miso soybeans, the Japanese always look

for high sucrose—over 7%; AC Onrei has 6.8%. They also look for total free sugars, of which AC Onrei contains about 10.5-11% (about average). Even though about half the sugars are probably bound up in pectins or cellulose and have no effect on the miso flavor, they still like to know the total sugar content.

Entering and winning this contest was a new step forward for the Canadian soybean folks. “It’s really something special.” Doug has been taking Japanese language lessons. The miso group of which John is the project leader is now starting to log in soybean variables on a database, which has fields for sucrose, total free sugars, color, etc. For miso soybeans (including red miso or long-term soybean miso), the Japanese prefer a yellow color to a whiter color—which the tofu and soymilk makers look for.

John explains that he is a food scientist, not a soybean breeder. We talked about 6 years ago when he was starting to work on miso, and he ordered a search on miso from the SoyaScan database. The breeders are the key to the process; at Harrow they breed mostly food-type or food-grade soybeans rather than commodity-type or oilseed-types—which are bred mostly at Ottawa and Guelph.

John’s miso group at Harrow has developed a close working relationship with the Food Research Institute in Nagano; they now work directly with one another. About two years ago, Mr. Fujimori, a miso maker with whom they have developed strong ties over the years, was in Canada on one of his trips. John gave him (for the first time) some homemade miso that his group had produced. He sniffed it and looked at it and said “This isn’t too bad.” He took it back to Japan, where it was evaluated and the results were sent to John—with Mr. Fujimori’s interpretation. The conclusion was: “It’s okay but... don’t give up your day job.” John wrote back asking how his group could improve the miso. That was they key! Mr. Fujimori came to Harrow again with another person, gave John’s group a lot of technical information, suggested that he use that information to make more miso—and to enter the miso in the annual Japanese miso contest! Mr. Fujimori provided the koji and John got a microbiologist involved. John’s group now made miso from three different soybeans (see above) and the scientists and judges at the FRI in Japan “were quite surprised.” They said “This isn’t bad.” They chose the best one. So John’s group made larger batches and sent them to Japan in October 1999 for entry in the annual contest. In November John went to Japan to be present at the contest—although nobody can observe the judging. He learned that this was the first miso ever entered by foreigners in the Japanese contest. He also learned that the Canadian miso was not being judged with or against the Japanese miso. They were judging it separately in a special category—of which it was the only entry. Both awards for an “E” for effort and for reaching a high standard. “Miso is kind of a religion in Japan and it for an upstart like us to come in

might not go down too well. But we found it interesting that they used our presence there for publicity—in a big way.” John also discovered that the koji in all miso entries *must* be made from Japanese rice—even though a lot of Thai rice is used in making commercial miso in Japan. “Our real mission there was to raise the profile of Canadian-grown soybeans and to increase exports of Canadian soybeans. We want to breed soybeans that are very well suited for making miso in Japan. We are not interested in making miso to sell to Japan. However there is a good possibility of developing a domestic market for miso in Canada.”

John is also deeply involved in trying to understand “stone seeds” or hard-seeded soybeans that do not absorb water well. Part of the problem seems to be related to weather/environmental conditions during the growing season. John hopes to try to understand the problem at the genetic level. “We now have a very heavy experimental stone-seed line.”

John enjoys miso at home and he has served miso soup at the research station on several occasions. Last week he had it served at the Rotary Club. In each case, everybody liked it. “Fermented foods add such a variety of textures and flavors that people enjoy.” Address: 1. Food Processing Technologist; 2. Food Scientist: Both: Agriculture and Agri-Food Canada, Greenhouse and Processing Crops Research Centre (GPCRC), Highway 18 East, Harrow, ON N0R 1G0, Canada. Phone: 519-738-2251.

4091. *Ontario Soybean Growers Newsletter*. 2000. Japanese miso awards presented. Feb. p. 3.

• **Summary:** “Agriculture and Agri-Food Canada scientists at the Greenhouse and Processing Crops Research Centre (GPCRC) in Harrow recently received two Special Participation Awards for the first foreign entries in miso competitions in Nagano and Tokyo, Japan... Japan requires approximately 160,000 tonnes of soybeans annually to produce miso, some of which comes from Canada.

“The miso production test program at the federal research centre at Harrow began in March 1998 to support the centre’s soybean breeding program and to evaluate the suitability of Canadian soybeans for making miso.”

“Dr. John Mullin, the miso project leader, said it was a great honour to receive the awards, which recognize the effort and progress that the Canadian researchers have made in making miso. Dr. Mullin traveled to Japan to submit the miso for competition and was on hand to accept the awards.

“The soybean breeding program at the GPCRC is known throughout the world for its research on food-grade soybeans. Harovinton was the first food-grade soybean variety developed in Canada for the Japanese tofu industry, and helped pave the way in establishing Canadian food-grade soybeans as a premium quality product in Asia.”

A photo shows Dr. Jonn Mullin and Food Processing Technologist Doug Jessop, each holding a framed plaque

(written in Japanese). On a table in front of them are samples of their award-winning miso. Address: Box 1199, Chatham, ONT, Canada N7M 5L8. Phone: 519-352-7730.

4092. McMahon, Mae. 2000. History of the American Miso Company property (Interview). *SoyaScan Notes*. March 27. Conducted by William Shurtleff of Soyfoods Center. [3 ref]
 • **Summary:** In Sept. 1975 Robert Warren Deakin and his wife, Karen Ann, purchased two tracts [pieces] of land (48.3 acres and 44.08 acres = 92.38 acres total) in Green Hill township, Rutherford County, from Grover K. Carver and his wife Lyla H. To do so, they borrowed \$89,325.50 from the Tryon Federal Savings and Loan Assoc. on 19 Sept. 1975. This is recorded as a deed of trust (a loan made with land as collateral) of that date found in book 223, page 411.

Then on 26 Jan. 1979, Robert W. Deakin and his wife deeded [sold] the same two tracts of land to Lawrence L. Bridges and E. Milton Singletary. The deed is recorded in Deed Book 401 on page 146, Rutherford County Register. Recorded Jan. 31.

On 5 Feb. 1979 Bridges and Singletary got a deed of trust (borrowed money against the land), recorded in deed of trust book 262 on p. 695. Apparently Bridges and Singletary assumed a deed of trust (agreed to take over the land payments and pay the balance due) that Robert Deakin had taken out from Tryon Federal Savings, plus they gave him \$8,000. That loan of \$8,000 was paid off on 13 Aug. 1979.

Then on 7 Aug. 1979 the names of Oak Feed Miso, Sandy Pukel, or any Belleme are first mentioned on any document we can find. On that date Lawrence L. Bridges and E. Milton Singletary deeded the two parcels of land totaling 92.38 acres to Oak Feed Miso. This deed is recorded in book 405 on page 727. At this time Oak Feed Miso assumed the deed of trust to Tryon Federal Savings (see book 223, p. 411) and also paid \$10,000 (as shown by a real estate excise stamp at the bottom of the deed). Note: In North Carolina, houses located on land are not usually mentioned on the land deeds.

On 19 May 1986 some 7.05 acres of the property were sold.

On 4 Dec. 1992 the deed of trust was paid off, i.e., the land was completely paid for.

On 1 Sept. 1995 some 19.11 acres were sold.

As of today (27 May 2000) American Miso Co. owns 66.97 acres. Address: Rutherford County records room, Rutherfordton, North Carolina. Phone: 828-287-6195.

4093. Bittman, Mark. 2000. Faster than you can say soup: The minimalist. *New York Times*. March 29. p. F3, or p. B12 (National ed.).

• **Summary:** “It would be hard to find a more powerfully complex natural convenience food than miso.” Miso, which is more intense than soy sauce, but not saltier, can be used

to make dressings and sauces, or toppings for tofu. “But miso’s most amazing feat is turning a cup of hot water into soup in about 30 seconds.” Contains a recipe for “Nearly instant miso soup,” with tofu, carrots and scallions.

4094. **Product Name:** Sesame Miso Dressing.
Manufacturer’s Name: Follow Your Heart Natural Foods Market and Vegetarian Restaurant (Marketer-Distributor).
Manufacturer’s Address: California. Phone: 1-800-40-Salad.

Date of Introduction: 2000. March.

Ingredients: -

Wt/Vol., Packaging, Price: -

How Stored: -

Nutrition: -

New Product–Documentation: Sell sheet sent by Patricia Smith from Natural Products Expo, Anaheim. 2000. March. “Follow Your Heart–Fresh & Natural Dressings.” Glossy, color, both sides. They opened for business in Southern California in 1970.

4095. **Product Name:** Japanese Miso Dressing, Sesame Soy Dressing, Teriyaki Sauce.

Manufacturer’s Name: Red Shell Foods Inc. (Marketer-Distributor).

Manufacturer’s Address: 825 Baldwin Park Blvd., City of Industry, CA 91746. Phone: 1-800-40-Salad.

Date of Introduction: 2000. March.

Ingredients: Miso dressing: Soy bean oil, rice vinegar, soy bean paste (soy beans, rice, salt), white wine vinegar, sugar, etc.

Wt/Vol., Packaging, Price: -

How Stored: -

Nutrition: -

New Product–Documentation: Sell sheet sent by Patricia Smith from Natural Products Expo, Anaheim. 2000. March.

4096. Stephens, Roger; Stephens, Jane Ade. ed. and comp. 2000. Soyfoods guide 2000: Helpful tips and information for using soyfoods. Indianapolis, Indiana: Stevens & Associates, Inc. Distributed by the Soy Protein Partners. 24 p. Illust. No index. 28 cm. [23 ref]

• **Summary:** This guide is available only on a limited basis to dietitians and health professionals. Contents: Health: Add soy to diet to reduce heart disease (FDA recommends 25 grams of soy protein a day to reduce blood cholesterol levels), sample day soy meal planner (easy ways to add 25 grams of soy protein). Daily soyfood guide pyramid. Soy and your health–Scientists are learning about soy’s health benefits: Isoflavones, heart disease, menopause & osteoporosis, cancer, allergies, diabetes & kidney disease, fat. Soyfood Descriptions: Meet the bean: Green vegetable soybeans (edamame), hydrolyzed vegetable protein (HVP), infant formulas, soy-based, lecithin, meat alternatives (meat

analogs), miso, natto, nondairy soy frozen desserts, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour (50% protein), soy grits, soy protein concentrate, soy protein isolate (isolated soy protein, 90% protein), soy protein, textured (flour or concentrate), soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk, soy beverages, soynut butter, soynuts, soybean oil & products, sprouts, soy, tamari (see soy sauce), tempeh, Teriyaki sauce (see soy sauce), tofu & tofu products, whipped toppings, soy-based, yuba. Helpful charts: Soyfood substitutions, soyfood isoflavone content. Soyfoods web site. Soyfood composition. Recipes using: Meat alternatives, textured soy protein, whole soybeans, soy flour, soynut butter, soymilk, tofu. Address: 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

4097. Jonas, Steven; Gordon, Sandra J. 2000. 30 secrets of the world's healthiest cuisines: Global eating tips and recipes from China, France, Japan, the Mediterranean, Africa, and Scandinavia. New York, Chichester, Weinheim, Brisbane, Singapore, Toronto: John Wiley & Sons, Inc. ix + 261 p. Index. 24 cm. [80* ref]

• **Summary:** This book contains numerous recipes for beef, pork, lamb, chicken, shrimp, salmon, and other meats. Soy-related recipes and topics include: Isoflavones (p. 77, 85-86). Miso (p. 83-84, 86, 186). Soy sauce (p. 36, 51-52, 85, 138). Soyfoods (p. 37, 77, 103, 137). Soyfoods in Japan (p. 83-86). Tofu (p. 83-86, 137). Tofu recipes (150, 173, 182, 185, 188). Vegetarian eating (p. 44-45, 106), Vegetarian recipes (p. 181-97).

Dr. Steven Jonas is a veteran triathlete, a certified professional ski instructor, and a longtime author of books on healthy eating and exercise (he has written 8 books of his own). Address: 1. Prof. of Preventive Medicine, State Univ. of New York, Stony Brook; 2. Freelance health and nutrition writer, Weston, Connecticut.

4098. Madison, Deborah. 2000. This can't be tofu! 75 recipes to cook something you never thought you would—and love every bite. New York, NY: Broadway Books. xi + 132 p. Illust. Index. 21 x 21 cm. [14 ref]

• **Summary:** Contents: Acknowledgments. Anecdote. Introduction. Yikes, its tofu! Types of tofu. Techniques for using tofu. Simple, basic tofu. Appetizers: tofu up front. Salads, sandwiches, and sauces. Soups. Stir-fries and sautés. Curries and braises. Pasta and noodles. Tofu for breakfast: "sausage" and eggs. Smoothies and shakes. Accompaniments. Inspired reading.

Also published as a Bantam Doubleday Dell trade paperback. Address: Santa Fe, New Mexico.

4099. South River Miso Co. Inc. 2000. The little book of miso: Recipes from South River. South River Farm, Conway, MA 01341. 24 p. 22 cm. [5 ref]

• **Summary:** This 24-page booklet is illustrated by Gaella Elwell. Contents: What is miso? The art of making miso soup. Recipes: Soups and stews, pasta and grain dishes, miso porridge & grain milk, dressings, dips and spreads, miso with vegetable & bean dishes. South River miso varieties. Suggested reading (5 books). South River products. Mission statement. Acknowledgments. Photos show: South River Miso Co. in the snow. The Elwell's daughter. Jars of miso. Address: South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

4100. Spiller, Cheryl Solomon. 2000. Fermented food: In the natural kitchen. *Vegetarian Times*. April. p. 147.

• **Summary:** A table gives basic information about four fermented foods, including miso. Look for: Unpasteurized miso, sold in the refrigerated section. Nutrients of note: Isoflavones (genistein and daidzein). A color photo shows red miso in a small white bowl.

4101. Spiller, Cheryl Solomon. 2000. Fermented food. *Natural Health* 30(3):147. April. *

4102. *Vegetarian Times*. 2000. Glossary. April. p. 119.

• **Summary:** Five of the seven entries are for soyfoods: Hoisin sauce, edamame, miso, tempeh, and tofu. The pronunciation of each is given.

4103. Pukel, Sandy. 2000. Why were Patricia and Joseph Carpenter kicked off the miso company land in Rutherfordton, North Carolina, and denied their share of ownership in the company? (Interview). *SoyaScan Notes*. May 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Sandy has just finished talking with John Belleme on the phone to compare their memories of this unpleasant incident. Their memories were exactly the same. "John remembered even more things that the Carpenters didn't do than I remembered." "If they were upset or felt they were owed money, why did they wait 20 years to tell me about it? That's pretty bizarre."

It was very clear to everyone else why they were kicked off the land. The miso company bought the land. Joseph was hired as a carpenter-handy man and paid a salary to build the factory there and to oversee things. They had their kid in private school, and they lived rent-free. "We paid for everything. John got back and nothing was done. They lived the life of Riley [a carefree, comfortable way of living] for a year."

Sandy says that his job was not at all to tell them what to do. Before he left for Japan, John gave them specific instructions for specific projects. It was very clear, and John is very meticulous. Anything he didn't tell them before he left, he certainly would have communicated to them from Japan. "When John got home, he totally freaked out. He

absolutely had a heart attack. He couldn't believe it. They had done nothing. They knew very clearly what they were supposed to do and they didn't do it. No ifs, and, or buts about it." This put the miso company 6-12 months behind schedule. Moreover, "they got paid a serious salary to do it—and they lived rent-free, in a beautiful set-up there."

Question: "Why do you think Joseph didn't do the required work?" Sandy's answer: "I guess he wasn't motivated or he wasn't capable. I don't really know why. I haven't seen him in many, many years. He's a nice guy but I think he needed more direction." Patricia wanted to be part of the miso company more than Joseph did. "She's very outgoing and aggressive, and maybe she oversold him. He was more of a laid back Hippy carpenter." Sandy made John Belleme a deal that if he went to Japan, learned how to make miso in the traditional way, then came back and made miso for the new company, Sandy would give him \$25,000 in stock. He did what was expected, and got what he was promised. Actually John got his \$25,000 in stock even before he left for Japan, because there was no question that he was going to do what he said he would do. Address: Owner, Oak Feed Store and Restaurant, 4500 S.W. 63 Ave., Miami, Florida 33133. Phone: 305-446-9036.

4104. Roberts, Patricia. 2000. History of interest in macrobiotics. Living on the Oak Feed Miso Co. land in Rutherfordton, North Carolina from 1979 to 1980. Part I (Interview). *SoyaScan Notes*. May 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** 1972—Patricia meets Joseph Carpenter (a native of California) in Oregon on a farm where she went to do yoga; she was very involved with yoga and meditation. Joseph is a very friendly and personable fellow, and he has an "incredible memory. Most people are in awe of his brain." They went together to Tucson, Arizona, to pick oranges. She was living on oranges and bananas, had lost much of her memory, and was very spaced out and emotional. They went into a place named The Granary, where they met Jack Garvey, who brought them into the macrobiotic community. She first met Michio Kushi in Tucson, when he came there to lecture.

1973 Sept. 15—Patricia and Joseph Carpenter are married in Arkansas. They were invited to Arkansas to do a little farming by some friends who had some property there. Their friends were deeply involved with Stephen Gaskin and The Farm in Summertown, Tennessee. They arrived with all of their macrobiotic "judgments" and that led to conflicts. They built a little house on the land in Arkansas, and Thom Leonard came to visit them there in 1973. He took care of their house for the winter when the Carpenters went to visit Patricia's parents in Florida.

1973 Nov. 11—Their first child, Yana, a girl, is born in Arkansas. They leave to go to "Snowflake," the first macrobiotic conference in Arizona. It was held on property

near a Hopi reservation that a group of people in the macrobiotic community, including Michio, purchased.

1974—Patricia goes to a macrobiotic conference in Miami and meets Sandy Pukel for the first time. She becomes friends with Sandy and his wife, and saw Michio for the second time.

1975 fall—Patricia arrives (with her daughter, Yana) in Brookline, Massachusetts, and lives in the macrobiotic study house run by Ken and Ann Burns. After about 3 months she moves to another study house. Joseph arrives later, in about 1976, and lives in the study house run by Jack and Barbara Garvey, on the same street as the Burns' house. Joseph Carpenter was very close to Jack Garvey. They both have a close relationship with Michio and Aveline Kushi. For Patricia, who had a Catholic upbringing, Michio was a spiritual teacher. John Belleme arrived in Brookline about mid-1976 and lived in the Burns' study house; it was at about this time that Patricia first met John—though they never lived in the same study house. Joseph designed and built an addition to the Kushi's home at 62 Buckminster Road; it was for Aveline—the bathroom of her dreams on the second floor. One day Aveline came to see Patricia in her apartment. She liked a chopping block table that Joseph had built for Patricia. Joseph is an excellent carpenter. He did much of the finish carpentry on the original Erewhon retail store on Newbury St. in Brookline, including the wooden bins for grains and beans.

1977 Christmas—Patricia and Joseph go to Florida for Christmas, one of many trips they took there. Patricia's parents and many of her friends live in Florida; she loves to visit. In early 1978 Joseph worked as a carpenter for several months in Sandy Pukel's Oak Feed Restaurant in Coconut Grove, Florida. He had gotten to know Sandy because Patricia and Sandy were close friends. During this time Sandy came to realize that Joseph was a skilled carpenter.

1979 Feb. 12—Patricia's second child, Benjamin, is born in Brookline. At about this time Patricia's sister, Christine, moved up to Boston to be near Patricia. In the spring of 1979 Patricia went to Florida to visit her parents and show them her new baby. Sandy flew Joseph down to talk business. Sandy had now decided that he wanted the Carpenters to become part owners of the company—so he offered them a deal, which, as near as Patricia can remember, was as follows. He asked them to live on the land the miso company planned to purchase while the Bellemes were in Japan learning how to make miso. If they would live and work the land, become a presence in the community, and then become owners of and workers for the company, Sandy offered to pay their expenses and give them \$25,000 worth of company shares for each year they stayed and worked on the land—including the first year, of course. But this agreement was verbal; nothing was put in writing. Back in those days, Patricia, recalls, people were less businesslike than they are today.

Looking back, Patricia believes that she and Joseph failed in their negotiation of this deal. Joseph is an artist, and he is much better at self expression than at negotiating agreements. Sandy is very good at negotiating.

1979 May—On Memorial Day weekend, at the end of May, after four years in Brookline (near Boston), the Carpenters leave and move to Florida for the summer, to be near Sandy, to work out the details of beginning the miso company. In leaving Boston, they were giving up a lot, including many friends (“We were very plugged in. My sister, Christine, was quite upset that we were leaving”) and Joseph’s good carpentry job. But they believed that Sandy’s deal made the move worthwhile.

Patricia flew to Florida with her two young children. At Sandy’s request, Joseph drove their van so that he could go to Hendersonville to meet with several real estate agents. The miso company property had not yet been decided on or purchased. The realtors took Joseph to visit several areas on the isothermal belt, but they didn’t find the property at that time. The isothermal belt means “never too hot, never too cold.” But it freezes and snows a little during the winter.

Patricia recalls that they bought the property from Bob Deakin. Joseph knew Bob Deakin. Bob was driving with his wife and daughter at about that time, on a holiday, to chimney rock. A truck was coming toward Bob’s car and suddenly a bee flew into the cab of the truck. When the truck driver started to swat the bee, his truck swerved across the road and killed Bob Deakin’s daughter. Bob kindly refrained from suing the truck driver or truck company, and somehow, because of the accident (or perhaps because of big hospital bills) he lost his property—which the miso company later purchased.

In Florida, Patricia and Joseph rented a place for the summer on Highland Beach near Boca Raton. They had visits with Sandy and learned more about his plans for the miso company. That summer, Michio came down and did a seminar, which they attended. Michio wanted the land to be used as a summer camp and a place to garden; he also wanted to build a dam and lake. John and Jan Belleme were preparing to go to Japan. Continued. Address: Grass Valley, California.

4105. Roberts, Patricia. 2000. History of interest in macrobiotics. Living on the Oak Feed Miso Co. land in Rutherfordton, North Carolina from 1979 to 1980. Part II (Interview). *SoyaScan Notes*. May 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: 1979 Aug. 1—A special election is held on alcoholic beverage control in the town of Rutherfordton, North Carolina. Called the ABC Referendum, it would decide whether alcoholic beverages in containers could be sold in special “ABC Stores” and whether off-premises sales of malt liquor (mostly beer) would be permitted. Note: Before that election, a person had

to go to South Carolina to buy such beverages. To this day, all cities in Rutherford County except Rutherfordton and Lake Lure are “dry”—one cannot buy alcoholic beverages there. Throughout the county one cannot buy any alcoholic beverages (except wine) by the drink or glass. No sales of any alcoholic beverages are allowed on Sundays.

1979 Aug. (late)—The Carpenters and their two children arrive (in separate vehicles) in Rutherfordton from Florida and move onto the miso company land. Patricia remembers the date clearly because people in town were buying beer to celebrate the implementation of the ABC Referendum. The Carpenters were the first people to live on the land after it had been purchased by Oak Feed Miso.

Two months later, in Oct. 1979 John and Jan Belleme leave for Japan. Patricia recalls that the Bellemes stopped by the land briefly on their way to Japan and left some things in the house. Patricia recalls that there was no discussion at this time about the work that Joseph was supposed to do during the coming year. There was no list of things Joseph was supposed to do. John never asked: “Is everything clear? Do you have any questions?” “We were all in our twenties and we all had a dream. Nobody knew exactly how it was going to happen, but we had a very nice relationship with John at the time. We were close friends.” It is also important to remember that Sandy was in charge of the miso company, not John.

During the time Patricia and Joseph lived on the land, they were very happy. Patricia recalls: “It was a wonderful time for us.” Joseph worked hard every day, out on the land, while they were there. He cut down trees and cleared lots of land, for the miso factory and warehouse, for planting the soybeans, and for their own home. Then he spent days rototilling and planted many acres of soybeans on the land he had prepared. He worked with local soil and agricultural departments in preparation for a dam that was to be built on the property. He also worked with the Farm Bureau and the water department—to get the basic groundwork done for the miso company. But he didn’t do any carpentry at all when he was on the land, because he was waiting for John Belleme to send the plans, measurements, kinds of wood, where to build, the orientation of the buildings (*Feng-shui*), etc. Patricia recalls no communication with the Bellemes after they were in Japan. Joseph was in regular communication with Sandy Pukel in Florida. Sandy would say “Hang on” but never sent the needed information.

In exchange for their work, the Carpenters got use of the house for free of charge plus the electricity and food expenses. Patricia taught cooking weekly classes to local people, and about 40 typical Americans came to class after class. Michio and Aveline Kushi came once to visit while the Carpenters were there; Patricia remembers his black suits, his cigarettes, and the fact that he liked her rice.

“Joseph is a very laid-back guy. He’s an incredible artist. He’s not threatening. He always follows through with

things. He has a very unique constitution and spirit. He doesn't talk about other people; he's not a schmoozer."

1980 June—John and Jan Belleme return from Japan. Patricia recalls that "When John and Jan came back from Japan, they were very, very different people." John had been rigid in Boston, but now he was much more rigid. After several weeks of sharing their house with the Bellemes, the Carpenters are told to leave the land. Patricia thinks it was John Belleme who actually told them this, but she is quite sure that it was Sandy who made the decision. She recalls that Sandy phoned Joseph several times after the Bellemes returned to discuss problems. For example, the Carpenters had a new truck that was owned by the miso company but that was registered in Joseph's name. Patricia recalls that a settlement deal was made: "When you turn over all the legal papers, then we'll give you the money we promised you. They gave us \$1,000, then they promised us an immediate \$8,000 more upon receipt of the truck title." Patricia is sure that the amount promised was \$8,000 but she does not know how that number was arrived at.

To this day, neither Patricia nor Joseph know why they were told to leave. She and Joseph were left in Rutherfordton without anything to do, and with two young children. Patricia was pregnant with their third child. They borrowed money from Patricia's father and bought a beautiful 50-acre farm in Rutherfordton. They had lived (uncomfortably) in the same house with the Bellemes for more than a month. Patricia recalls: "Losing the miso company was a disaster for Joseph. He never wanted to talk about it again. I think he never really got over it."

Not long thereafter, Jan Belleme come to visit Patricia and Joseph. She brought a basket of vegetables that the Carpenters had planted in the garden on the miso company land. As she arrived, Patricia clearly remembers thinking that she was bringing the money they were owed. "It was always expected."

1980 Nov. 23—The Carpenters' third child, Patrick, was born at that farm. After the birth, Patricia was thin and weak. Jack Garvey came to visit and directed her to eat differently. "It saved my life."

Patricia has nothing but good memories of the time she and Joseph lived on the miso company land. "Joseph was a very happy, healthy, and active man, with a lot of good energy, while we were living on that land." But she has bad memories from the time they were kicked off the land and not paid the money they were owed. Joseph also has very bad feelings and memories about the latter events. Joseph has an incredible memory for facts and details. Patricia notes that she doesn't hold onto things, but there was something about the way their agreement with the miso company ended that has been the only thing in her life that she has sadness about. She has tried to work it out, but she still feels badly about it. She still does not understand why

John Belleme asked Joseph to leave the land. Continued. Address: Grass Valley, California.

4106. Roberts, Patricia. 2000. History of interest in macrobiotics. Living on the Oak Feed Miso Co. land in Rutherfordton, North Carolina from 1979 to 1980. Part III (Interview). *SoyaScan Notes*. May 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** 1983 Feb.—Patricia leaves Joseph and moves away from North Carolina, to California.

1983—In California, she lived for eight years in Marin County, where she was a disciple of Bubba / Da Free John, an American-born spiritual teacher who had a community at Clear Lake. These were the best years of her life. Da Free John lived for a while on an island in Fiji and now he lives on one of the San Juan islands off the coast of Seattle, Washington. 1993—Patricia moved back to Boca Raton, Florida, to be near her family; there she ran an antique shop for 7 years. After returning to Florida, Patricia really wanted to call Sandy—but she couldn't; it was just too difficult.

1997 Nov. (late)—Patricia accidentally bumps into Sandy at a Heat basketball game in Florida. Sandy phoned her later that night, because he was so excited to see her again. asked why she had not called him—he had always really loved her. She said, "Because I have been so angry with you all these years." He said, "What about?" He did not know, so she told him a little bit about why she was still upset—but she did not hold anything over his head. He got it. On many nights thereafter they talked on the phone for hours. But they did not get together until early 1998, when they started dating. At her birthday dinner, on 28 March 1998, Sandy told her (she remembers this very clearly, as he sat across the table) that he had called John Belleme and that John had said Patricia was right—that Patricia and Joseph had been asked to leave, that they had been "screwed" (i.e. treated very unfairly), and still had not been paid the money they were owed. It wasn't clean. Patricia was happy to hear that John's recollection was the same as hers. Patricia and Sandy got involved with one another again, and Patricia recalls clearly that Sandy said something like "Stick with me, baby, and I'll be sure you get the money back." Again she believed he would rectify the unfair situation. Sandy said he was shocked at how much John remembered about how Patricia and Joseph had been treated unfairly.

Patricia again ended her relationship with Sandy on a bad note." He is the only person with whom she still has a bad relationship.

For the last eight years Patricia has lived in Boca Raton, where she ran an antique shop. Recently she moved to Grass Valley, California, to be near her children.

Sometimes Patricia sits down with her journal and reviews her whole life; she feels as if events fall into decades, and how quickly time passes. She continues to have a strong interest in meditation, yoga, and

vegetarianism. She no longer practices macrobiotics, but she has been strongly influenced by it and she loves brown rice and some other macrobiotic foods. She is now feeling an urge to start teaching cooking classes again; she enjoys it very much and is very good at it. Address: Grass Valley, California.

4107. Elwell, Christian. 2000. Using barley to make miso (Interview). *SoyaScan Notes*. May 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Naked barley (called *hadaka mugi* in Japanese) is like wheat in that the outermost husk can be easily removed, whereas this husk tends to adhere to the bran layer of regular barley. However naked barley has a rubbery skin around the endosperm which the koji cannot penetrate. Of course, the consistency of this skin is different among varieties, yet none of the ones that Christian has tested have made good koji. Apparently naked barley was the more primitive and typical grain in some indigenous cultures. Tibetans grow naked barley and grind it to make their *tsampa* or barley cereal.

Before it can be used to make koji for barley miso, regular barley must be pearled; naked barley need not be pearled before it is eaten. Barley is sold after having been pearled to different degrees, meaning that different amounts of the bran layer have been removed. Pot barley (also called “hulled barley”), which Christian uses to make barley miso, has most or all of the outer husk removed but it is hardly pearled at all, so all or most of the bran layers remain around the endosperm.

Mugi-cha (Japanese barley tea) is made from barley from which the husk has not been removed. Address: Founder and Owner, South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

4108. Jacobi, Dana. 2000. The joy of soy: 75 delicious ways to enjoy nature’s miracle food. Roseville, California: Prima Publishing. xii + 244 p. May. Illust. Index. 22 cm. Series: The natural kitchen. [16 ref]

• **Summary:** This is basically a reprint of Dana’s 1996 book titled *Soy! 75 Delicious Ways to Enjoy Nature’s Miracle Food*, also published by Prima Publishing. It contains no new text and no new recipes; a few small errors have been corrected and the design of both covers and the title page is new. Address: Food writer, New York, NY.

4109. Kato, Hiroko. 2000. How to eat at a Japanese restaurant the vegan way. *Vegetarian Journal* (Baltimore, Maryland). May/June. p. 20-23.

• **Summary:** Describes how to avoid fish and bonito extract and flakes. Traditional Japanese vegan cuisine, called *shojin ryori*, was created by Zen Buddhists; it is very easy to enjoy beautiful and delicious Japanese vegan dishes at such

restaurants. Sushi can include *natto maki*, *yuba maki*, or *inari-zushi* (rice wrapped in season aburage). Tofu dishes may include *yu-dofu*, *hiya yakko*, *tofu dengaku*, *agedashi-dofu*, and *goma-dofu* (made of sesame seeds; no soy). Other dishes: Edamame, miso soup, vegetable tempura, or *gyoza*.

4110. Lear, Jane Daniels. 2000. Kitchen notebook: Behind the scenes with *Gourmet’s* cooks. *Gourmet* 60(5):255-58, 261. May.

• **Summary:** The title page announces that in this article you will learn “How to work soy into your everyday culinary repertoire.” The full-page section titled “Toying with soy” (p. 256) observes that there has recently been an “explosion of soy.” It’s no longer limited to natural foods stores and Asian markets. In a typical grocery store or supermarket, you’ll find tubs of tofu in the produce section, soy milk next to the cow’s milk in the dairy case, and *edamame* soybeans in the frozen foods section.

“Well, the stuff is good for you.” So Americans are learning how to cook with it and make it delicious—as many people in East Asia have long known how to do. Focuses on four foods: Edamame (“better than beer nuts”), miso, tofu, and Chinese fermented black beans (actually salted, fermented black soybeans, sold in Asian markets and sometimes labeled “Preserved beans”). A large photo shows these four foods; the edamame are in a metal Japanese-style strainer.

“Perhaps the most irresistible, and nutritious, cocktail nibble going these days is edamame—young, tender soybeans usually eaten straight from the pod. (Gently suck the beans into your mouth, and when serving them, don’t forget to provide a bowl for the pods.)”

One recipe is given: Kemp Minifie’s panfried tofu with Chinese black bean sauce (with “2 tablespoons Chinese fermented black beans”—which is standard fare at her Sunday night suppers. “Her ten-year-old daughter loves it so much that she’s requested it as her birthday meal for several years”).

Note: This is the earliest English-language document seen (Oct. 2008) that uses the term “Chinese fermented black beans” to refer to Chinese-style soy nuggets.

4111. Vought, Liz. 2000. The celebration table: Casual cooking. *Gourmet* 60(5):234-39. May.

• **Summary:** Soy-related recipes include: Miso marinated salmon with citrus and shiitakes (p. 236). Haricot verd, edamame, and purple potato salad (p. 226; calls for 1 lb frozen or fresh *edamame* (soybeans) in the pod).

4112. Carpenter, Joseph. 2000. Living in Boston and on the Oak Feed Miso Co. land in Rutherfordton, North Carolina from 1979 to 1980. Part I (Interview). *SoyaScan Notes*. June 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Joseph was born on 5 Aug. 1948 in Oakland, California, at Providence Hospital. He lived with his family in Berkeley until he was age 10; his father, who was a carpenter by trade, died in 1954, when he was still a boy. He and his mother then moved to nearby El Sobrante (by the back gate of De Anza High School—where he graduated from high school). He attended Contra Costa Junior College for two years, moved up to Sonoma State for a year, then dropped out. At age 19-20 (1967-68), he took off to see the world. As a young man, he became a skilled carpenter, learning by doing. Several of the men he worked with were good teachers.

A hippie during the 1960s, he met Patricia Roberts who was born in March 1947 in Queens, New York, and grew up in Rockaway Beach in Queens. Her father was a New York City police officer and detective for 20-25 years. Her parents retired to Florida in the late 1960s or early 1970s. When the kids were at home, they lived in a nice big home at Whitehouse Point; after the kids were gone, they moved to Deerfield Beach. Soon after meeting Patricia, Joseph stopped using psychedelics drugs and alcohol. They picked apples together in Hood River, Oregon, and lived in an old picker's camp. Having been overweight, he lost about 80 pounds in less than 6 months—and felt great. He and Patricia and a girl friend of hers migrated to Tucson, Arizona, where they were planning to pick oranges for the winter. While looking for a place to stay, they came across a macrobiotic bakery, The Granary, run by Jack Garvey. That was their first introduction to macrobiotics. Because of their largely raw food diet, they were somewhat resistant at first, but soon became friends and students of Jack's. In 1973 Joseph and Patricia were married in Arkansas.

1977 Feb.—Joseph arrives in Boston from Northern California; he is very sure of this date. He met Charlie Kendall (a maker of traditional natto, amazake, and mochi), who had just bought a house in Brookline by the railroad tracks; Joseph helped him extensively remodel that building. Charlie's wife, Yoko, was Aveline's sister. Joseph soon became friends with Bill Painter, who was a house painter by trade and also had a small shop in the basement of the Kushi's house. Before long Joseph was working as a carpenter with Bill Eggloff, building a handsome grain bin for Erewhon's retail store on Newbury Street. Using red oak and Plexiglas, they worked on it in the basement, which had a garage door that opened onto the alley behind the store. Bill, who lived on Cape Cod, stopped working for Erewhon when the bin was finished. But the store needed more fixtures, so Joseph made a bid, signed a contract, then installed new check-out stands, new shelves, and units to hold the crocks of bulk tamari, barley malt, etc. Joseph had a family to support, and carpentry was his livelihood, so he was paid for all work he did in the Boston area. Later, over 4-day weekend, he worked to tear out old bathrooms and office spaces to open up the cramped front of the Erewhon

store. He also did some work on a new Erewhon store in Brookline. After Erewhon moved out of their old 4-story brick warehouse, he worked on the huge modern warehouse that Erewhon moved into. The Kushi's house on 62 Buckminster Road had been the headmaster's house for a private school. Upstairs there was an institutional bathroom. Aveline asked Joseph to remodel it to make a private bathroom—with lots of tile. After about a year of working for the macrobiotic community (always for pay), Joseph got "burned out" and went to work for a regular contractor unconnected to macrobiotics.

1977 Christmas—Joseph and Patricia go to Florida for Christmas, one of many trips they took there. In early 1978 Joseph worked as a carpenter for several months in Sandy Pukel's Oak Feed Restaurant in Coconut Grove, Florida. He had gotten to know Sandy because his wife, Patricia, and Sandy were close friends; they had first met when they both went to a seminar Michio Kushi gave in Coconut Grove. After the restaurant opened, in about May 1978, Joseph and Patricia took a vacation to Jamaica. During the summer and fall of 1978 Sandy came to Boston several times. Each time he and Patricia and Joseph went out to dinner together. Sandy mentioned that he was thinking of starting a miso company and asked if they might be interested in getting involved. They expressed interest, but no definite plans or offers were made.

1979 Feb.—Joseph's second child, Benjamin, is born in Boston to his wife Patricia. The Carpenters took many trips to Florida, especially during the winter, to visit Patricia's parents. In about March 1979, over a long weekend, when Patricia and their two children were vacationing in Florida (visiting her parents), Sandy Pukel paid for Joseph to fly from Boston to South Florida for a meeting to discuss the part that the Carpenters might have in the development of the new miso company. Sandy knew Joseph's skills as a carpenter. Joseph recalls that the meeting was at Edmund Benson's house. Sandy said that he wanted Patricia and Joseph to become part of the miso company. In exchange for their labor, they would be given a share of the business ownership worth \$25,000. Joseph does not recall whether they would receive the \$25,000 once or each year that they worked—but he definitely recalls the \$25,000 offer. Joseph recalls that the talk at this first meeting was very general in terms of what kind of carpentry or construction work he would do for the company.

1979 May (late)—Joseph leaves Boston in his van, headed for North Carolina—after handing over their house to the next renters. On the way, following Sandy's instructions, he stops in Hendersonville, North Carolina, for about a week to check out some real estate. With real estate agents that Sandy Pukel and/or Edmund Benson had found, Joseph looks at property the agents thought might be appropriate for the miso company in the Asheville area and in Rutherford County. As far as he knows, Joseph was the first

person to actively look for land for the miso company. They found several properties that Joseph considered borderline, so Sandy (and probably John Belleme and Edmund) flew up from Florida and they all visited these sites together. Finding nothing that was suitable, they left. Joseph continued on to Florida in his van to be with Patricia and their children. Sandy continued to work with local realtors until he found a suitable piece of property. Joseph is quite sure that just before they finally purchased the land in Rutherfordton, Sandy, Michio and he (and perhaps a few other people) all went to see the property at the same time. They walked over the roughly 100 acres of land and through the beautiful house.

During the summer of 1979 Joseph and Patricia met with Sandy and Edmund several times to discuss their living on the miso company land while John and Jan Belleme were away studying miso-making in Japan. Though nothing was put into writing, Joseph and Patricia both recall clearly that their daily expenses would be taken care of, they would work on the land, and, at the end, they would own a part of this new business. They were not given any specific list of tasks or duties they were expected to accomplish. Continued. Address: 10655 Lakeshore Dr., Clear Lake, California 95422. Phone: 707-994-3218.

4113. Carpenter, Joseph. 2000. Living in Boston and on the Oak Feed Miso Co. land in Rutherfordton, North Carolina from 1979 to 1980. Part II (Interview). *SoyaScan Notes*. June 2. Conducted by William Shurtleff of Soyfoods Center. • **Summary:** Continued: 1979 Aug. (late)—Joseph leaves from the Boca Raton area of Florida in his van, pulling a U-Haul trailer filled with mattresses and furniture, and drives to the miso company land in Rutherfordton, North Carolina. Patricia's parents drove her up a day or two later. The first day that Joseph got to Rutherfordton was the first day that anyone could legally buy alcohol. It was the day the provision from the vote on Aug. 1 took effect. He distinctly remembers stopping at a service station in Rutherfordton; they were selling beer and everybody was talking about it. Before this, although liquor could not be sold legally in the area, there was plenty of bootlegging. One local bootlegger earned enough money to send his three sons through college. Or one could drive 45 minutes to Chesney, South Carolina, to buy alcohol legally. When someone was drunk and staggering a bit, they were said to have a "Chesney lean."

Joseph began his work of settling in by cleaning the house, mowing the lawn, and generally cleaning up. After a month or so John and Jan Belleme arrived on their way to Japan. John was driving his BMW motorcycle and Jan was driving their old beat-up Volkswagen. Joseph took the VW into Charlotte to trade it in for a truck to use on the land; it broke down in the used-car lot. John and Jan dropped off some of their personal possessions, and stayed for a week or

more before they continued on across the USA on the motorcycle to California, then Japan. Joseph is very sure that while John Belleme was on the land, he never gave Joseph a specific or even a general list of work he wanted to have accomplished while he was gone. It wasn't even clear yet where the miso factory was to be located. "Everything was up in the air." Also, John was working for Sandy—just like Joseph was.

After the Bellemes left, Joseph began by painting the entire inside of the house. Most of the land was unimproved pasture with tall weeds. He arranged for a tractor and a brush-hog to keep the weeds down, both to reduce fire danger and to make the land look nicer. He started a big garden (on a nice flat area down by the paved road where the miso factory was eventually constructed), but found out later that a previous owner, Bob Deakin, had grown so much corn there that the soil had been exhausted. So his first garden failed. Later he built up the soil using a Troy-Bilt rototiller.

He cut firewood, cleaned up and burned the slash (the tangle of brush and tree tops from "Nigger Pines" that had been cut and sold for pulpwood), dealt with the kudzu, etc. He laid the groundwork for a pond and dam on the property by contacting local agencies, gathering information, and sending it to Sandy. He and Patricia were in touch with Sandy by phone and letter. The few requests for work from Sandy (mostly laying the groundwork), Joseph completed promptly. For example, he collected and sent samples of wood and wooden pipes to John in Japan. He did not do any carpentry or construction work because no such work had been authorized by Sandy. Joseph recalls: "The owners of the miso company knew what they wanted to do, but they didn't yet know *how* they were going to accomplish it, or what form it was going to take. "It was kind of vague, with few details. There was not a lot of direction, so it was a struggle to keep busy; there's nothing worse than just doing nothing."

A letter or two was exchanged with the Bellemes in Japan, but none of these contained any discussion of work for Joseph to do. Rather the Bellemes described their Spartan existence.

Joseph put in a good day's work every day—weather permitting. In exchange, he had the house to live in, all expenses paid—such as utilities, food, gasoline, home insurance, and even schooling for their eldest daughter, Yana. He thinks that he and Patricia probably also got a minimal salary so they would have some personal money—but not enough to open a personal bank account and make deposits. At one time the company bank account (at a bank in Rutherfordton, on Main Street, on a corner), replenished once a month by a check from Florida, got so low that Joseph had to go out and find a paying job.

While the Carpenters were living on the land, they practiced a healthy macrobiotic diet, with Patricia as the

cook. They were not strict, so they consumed a little chicken now and then.

They purchased their home insurance from Bob Deakin, a very nice man who worked for the North Carolina Farm Bureau Insurance Co. They soon learned from Bob that he had formerly owned this same piece of land—it was his dream place—with several creeks and hills, and a beautiful home on top of the hill, big kitchen with custom cabinets, three bedrooms downstairs, huge master bedroom upstairs with a sauna, two car garage. Joseph heard the fateful story from other people local town. One day Bob and his family was driving into town. A truck driver in a big semi [semitrailer] was swatting at a bee that had gotten into the cab. He hit Bob's vehicle head-on, killing one of his daughters and seriously injuring Bob. For some reason, either there wasn't insurance or he wouldn't sue the truck driver (he refused to profit from his daughter's death), Bob (who couldn't work) eventually lost his treasured piece of land. He sold it in 1975 to Lawrence Bridges and E. Milton Singletary. Continued. Address: 10655 Lakeshore Dr., Clear Lake, California 95422. Phone: 707-994-3218.

4114. Carpenter, Joseph. 2000. Living in Boston and on the Oak Feed Miso Co. land in Rutherfordton, North Carolina from 1979 to 1980. Part III (Interview). *SoyaScan Notes*. June 2. Conducted by William Shurtleff of Soyfoods Center. • **Summary:** 1980 spring—The Bellemes return to North Carolina from Japan. Joseph recalls there was almost “immediate antagonism. They were so *yang*, tight, salty and wound up. Maybe we had gotten used to operating on the Southern vibe. It was a clash—bad vibes from the beginning.” Patricia had come to consider the place as her home and now it had to be shared. Joseph does not recall any specific areas of conflict, and he is certain that John had no specific complaints and never said anything such as “Why haven't you done this or that?” Joseph had done everything that he had been asked to do, and he had no power to initiate any construction projects. It was understood that all those decisions would be made after John and Jan returned from Japan.

The Carpenters and Bellemes lived on the land for a month or two together. It was unpleasant, but Joseph does not recall any specific complaints by the Bellemes. Patricia is a good housekeeper, so the house was very neat and clean. Question: Did you decide to leave on your own or were you asked to leave? Joseph's answer: “We were definitely asked to leave. We didn't want to go.” The Carpenters had expected to be actively involved in founding the business, and to soon have a separate home of their own on the land. John Belleme was the one who asked them to leave, but it may well have been a decision that Sandy made—maybe with some input from John. Joseph recalls hearing of some kind of “financial shenanigans involving Sandy.” He never knew exactly what the problem was, but

he felt he had lost his support from Sandy—for whom he was working. Maybe someone decided to just have a construction company come in, pour a slab, and erect a metal building—instead of taking the time to construct a hand-made building. Both Joseph and Patricia feel that they were treated unfairly in that they believed they had some compensation coming that they never received—either a portion of the business or monetary compensation. They had lived and worked there for almost a year—basically for room, board, and expenses (including about \$1,000 for Yana, age 7, attending a local private Christian school)—with the clear understanding that a portion of the business would be theirs.

Soon Joseph began looking for a new place to live. They found a piece of land with two homes on it just outside the Rutherfordton city limits.

1980 Nov. 23—Their third child, Patrick, was born at that farm. After that, Joseph began to receive acupuncture treatments from Jack Garvey. Joseph renovated the second home and rented it out, but after Patricia left in early 1983 the tenant was murdered (by her ex-boyfriend) in the home, so he couldn't rent it out any more.

Joseph felt bad about what happened during the time he worked for the miso company, but after several years he let go of it. Life goes on, and he had new problems to deal with. Not much was to be gained by dwelling on the past.

In about 1991 or 1992, while listening to the Dean O'Dell show on KGO radio at work, he first heard the diagnosis of a sleep disorder that had started several years after he left the miso company land—sleep apnea. It means you frequently stop breathing when you are sleeping. The result is that you never get into deep REM sleep, so no matter how much you sleep, you're always tired. Joseph would often fall asleep during the day, and as soon as he got home from work. He feels that was a real problem in the later years of his marriage. He has been able to treat the problem by putting a small medical air compressor (a CNAP = Constant Nasal Air Pressure) as part of a mask over his face when he sleeps at night. This machine activates when he stops breathing at night. When he found out what the problem was, he was so glad. He had to pester the regular doctors before they would give him sleep tests, which led to a diagnosis and the machine.

Note: On 2 July 2000 William Shurtleff called John Belleme, told him that he had interviewed the Carpenters, and asked John if he would like to tell his side of the story. His response: “I'm not going to say a word about it.” He did say that he felt it was “outrageous” for Shurtleff to discuss matters of personal feeling and conflicts in a company history—especially feelings that could hurt people who are still around; the history should be limited to facts about the company. Address: 10655 Lakeshore Dr., Clear Lake, California 95422. Phone: 707-994-3218.

4115. Gonzales, Greg. 2000. Making miso and koji for American Miso Co. Inc. Part I (Interview). *SoyaScan Notes*. June 20-21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Greg was born in July 1959 in Torrance, near Los Angeles, California, in a middle-class Mexican-American Catholic family. Both his parents were born in the Los Angeles area and Greg grew up in that area. After graduating from high school at age 18-19 he became a professional dancer. In 1987 he went to Japan for 6 months to work as a dancer at a tourist hotel in a small, isolated Japanese town. He liked Japanese culture very much. During this time he wrote short stories, and decided it was time for a change of careers. After returning to the USA, he lived in Los Angeles, found several easy jobs, and went to L.A. Community College for a year to pursue his interest in writing. At that time, in 1989, he met Barry Evans who was living to Los Angeles. They met through a mutual friend, spent a lot of time together during the next year, and became good friends. Barry took a federal holiday and Greg moved to Sonoma County in northern California. There he met a woman named Manon Fancher who became his partner; she already had a child named Keith Fancher. Together they moved to a small lumber town in Plumas County, in the Sierra Nevada mountains, about 70 miles north of Lake Tahoe. Greg worked for the U.S. Forest Service on a timber salvage marketing crew and taught dance on the side. On 12 Aug. 1992 they had a baby boy named Devin.

One day, in 1995, after they had lived in mountains for about two years, Barry Evans called, said he lived and owned several businesses in and around Asheville, North Carolina, and offered Greg a job working at the miso factory; Don DeBona would be his boss. Greg said he would like to think about it, discuss it with Manon, and visit the company before making a final decision. He had enjoyed miso previously, but did not know how it was made. He liked Japanese food and culture, knew nothing about macrobiotics, and was not sure how he would like living in rural North Carolina. So Barry flew him out to North Carolina. Before his interview with Don DeBona, Greg read *The Book of Miso* to better prepare himself. He accepted the offer. He and Manon tied up loose ends in Plumas County, then drove with their kids across the country to North Carolina.

Arriving in Feb. 1995, Greg worked at Great Eastern Sun for about 8 weeks, then went to work with Don DeBona at American Miso Co. (AMC). Don had had trouble keeping workers; they were attracted by the romance of miso and making macrobiotic foods, but couldn't take the hard work or the rural environment.

Greg worked for Don for about 2½ years. When Don left the company, Greg had plenty of experience making miso but he had never made koji by himself. Greg recalls: "I suddenly found myself with the reins in my hands. There

was a lot of responsibility, and I felt tense at first." He had steamed and inoculated the rice, dug it, put it in the trays, put the trays in the koji room, etc., but he had never stayed with the koji during the night or had to make decisions about adjusting its temperature. Making koji is an art, based on being sensitive to the properties of the koji; it cannot be learned from a book. It takes a long time to "learn how to make koji happy. Newcomers always want to go by what the thermometer says, but it doesn't work that way."

About a month after Greg took over, Barry hired John Belleme, one day a week, to look carefully at the koji Greg had made the day before, and to give him tips on how to improve. John is still active in this role, which is working out very nicely for both John and Greg. "John loves this place."

Greg makes koji at least once a week; Wednesday is koji night, so Greg will be with the koji until midnight. He will check its progress every 60 to 90 minutes, depending on the season and outdoor temperature. A little after midnight, he goes to his cabin on the miso company land and sleeps until a little before 4:00 the next morning. Then he returns to the miso plant, checks the koji again, and starts cooking the soybeans. Because of the fermentation process, koji generates its own heat, and it creates increasingly more heat as it matures, and its mycelium expands and binds the rice into a cake. Each time Greg makes koji it is different, and different types of adjustments must be made. There are no thermostats in the koji room. All temperature adjustments are made by either opening or closing the koji room door or the vents in the ceiling. If the ceiling vents are opened too much, the heat will rise out but so will the humidity. Thus, the balance of opening the door vs. the ceiling vents is important in adjusting the koji room humidity. To add humidity, Greg may wet the floor of the room and close the room. He never uses a heater to heat the koji room, in part because it dries out the air. When inoculating the rice, Greg will use less inoculant in the summer than in the winter.

This koji is really made in the traditional way—all natural, nothing artificial. Most companies automate their process as their volume expands, but AMC has decided not to do that. Yuko Okada of Muso and Mr. Kazama of Mitoku (both Japanese natural food companies) told Barry Evans that they thought AMC was the largest maker of traditional koji in the world. The company makes about 300,000 lb/year of miso. Don DeBona increased the number of miso vats from 10 to about 45. Continued. Address: 4225 Maple Creek Rd., Rutherfordton, North Carolina 28139. Phone: 828-287-2940.

4116. Gonzales, Greg. 2000. Making miso and koji for American Miso Co. Inc. Part II (Interview). *SoyaScan Notes*. June 20-21. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** To enter the original koji room, one had to step up a foot or so from floor level. The koji table was built into the room, and was thus immovable. The original koji room is now used for cold storage of miso tamari from the top of the vats (they bottle and sell it) and for tubs of bulk miso. The company now has two new and larger koji rooms. The floor of each is level with the floor of the building and the door is larger; thus, it is now possible to roll the koji table and racks of koji trays in and out of the room. Two koji tables can fit side by side in one new koji room. Don DeBona had the idea of putting the koji table and racks on wheels. He called it “Reinventing the wheel.” Each koji room has about the same floor area as the old one, but the ceiling is 8 feet high rather than 6 feet. The floor of the new rooms is insulated wood (rather than cement) to prevent loss of heat and humidity.

After the rice is steamed, it is put into the hopper of a machine where three things happen: Metal fingers break up any clumps, a water-cooled jacket cools it, and a small blower blows spores of koji starter over it. It comes out onto a low table, whence it is shoveled (using a stainless steel shovel) into the koji crib atop the stainless steel table. The koji crib is about 18 inches deep and is lined with organic linen cloths before the cooked rice is put in. The inoculated rice, on the table, is then wheeled into the koji room.

“The hotter it is, the harder it is to make koji,” notes Greg. So on very hot days, Greg will spread the grain by hand on the low table to cool it faster and more; then he will inoculate it by hand, and work the inoculant in evenly with his hands.

When the koji in the crib is ready, the crib (on its table) is wheeled out of the koji room. The koji is then scooped onto koji trays using a one *shô* measure. Greg does not stack the koji trays in different ways to conserve or release heat; rather he puts them on rolling racks. Once a koji tray is placed on a rack, it stays in that place on the rack until the koji is ready. When a rack is full, it is wheeled back into the koji room. This saves labor and enables Greg to make much more koji.

Greg makes miso in a three day cycle. He steams the rice on Monday, puts it in trays on Tuesday, and makes the miso on Wednesday. For most of the year, this cycle is repeated twice a week. Making miso twice a week is hard work. During the busiest times of year, the company employs about eleven people—including Greg; five in production and six in packing. Many of the packers are local women who like the miso company work better than that offered by the local mills, because there is less stress, and they can set their own hours as long as the work gets done. Greg is the general manager, in charge of these workers. He really appreciates this challenging opportunity. So far this year, Greg and his coworkers have made 119,250 lb of finished koji.

Most consumers use miso to make soups. They use more miso in the winter than in the summer. So by the beginning of summer, the vats are usually full. By October or November enough vats have been emptied of their miso, that it is time to start making more miso to refill them.

Concerning this work, Greg reflects: “I love it. I don’t mind hard work. It offers its own reward. I feel connected to everyone who went before me—part of a lineage. Also, you can’t be phony with the koji, or pretend, or get arrogant with it. If you don’t look at it carefully, and feel and smell it, then you’ll make a mistake. It’s dynamic, and it keeps you honest that way. This is an honorable thing to do, and I feel privileged to have found myself in the same wacky way that everything else happened here—to be the baby sitter for a while.”

When not making miso, Greg continues to write short stories and poetry. When he learned that Erewhon was connected with this miso company during its formative years, he joked: “That makes perfect sense. ‘Erewhon’ spelled backwards is ‘nowhere,’ and this place is out in the middle of nowhere.” Recently Louise Hagler of The Farm in Tennessee visited the American Miso Co. for three days. She is writing a miso cookbook, which will contain a brief description of koji and how it is made into miso.

Greg’s son, Devin, is now age 8, and his stepson, Keith Fancher (who is into computers and math) is age 16. Manon cares for the kids at home. They are considering home schooling for next year. Both of Greg’s parents are still alive. They have found that the corporate world is not a nurturing place. So they have come to respect his choice to follow his own path, and the fact that he is now general manager.

Talk with Barry Evans, owner of American Miso Co. 2000. June 29. Greg Gonzales’ right hand man in making (and tending) koji and miso is his brother, Dave Gonzales. Two black guys and a Honduran immigrant also make koji and miso with them. The father of Greg’s partner, Manon Fancher, is Hampton Fancher, who is a screen writer; he wrote the script for the well-known movie *Blade Runner*. Address: 4225 Maple Creek Rd., Rutherfordton, North Carolina 28139. Phone: 828-287-2940.

4117. *SoyaScan Notes*. 2000. One disaster after another leads to success: Brief history of American Miso Company (Overview). June 20. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** This story, with its many strange twists and turns, might be called “One disaster or failure after another leads to success” or “The perfection of imperfection.”

1977 Aug. 2—It was a disaster for Bob and Karen Deakin of Rutherfordton, North Carolina, when a bee flew into the cabin of a big truck near their home. As the driver tried to swat it, his truck swerved across the road and smashed into

a car driven by Bob Deakin, killing Bob's daughter (age 12½) and severely injuring Bob and his young son.

1979 Jan. 26—It was a second disaster for Bob and Karen Deakin when they were forced to give up the home they had built and the 92 acres of land they dearly loved in Rutherfordton because they could not make the mortgage payments. With Bob still injured from the car crash, the family had no steady income. The land was sold to Oak Feed Miso Co. on 7 Aug. 1979.

1979 Oct.—It was a disaster for John Belleme when he arrived in Japan to study miso and nobody knew who he was or why he was there. The arrangements that were supposed to have been made were never made.

1979 Oct.—It was a small disaster for Mr. Kazama of Mitoku when John Belleme handcuffed himself to Mr. Kazama's desk and said he would not leave until Mr. Kazama had located a miso master with whom John could learn the traditional art of making Japanese miso.

1979 Oct.—It was a disaster for miso master Takamichi Onozaki, of Yaita, Japan, when two foreigners arrived, without invitation, saying they wanted him to teach them how to make miso. He told them he was sorry, but they could not stay. They stayed in his house, under the same roof, for 6-8 months as they worked hard and learned how to make miso.

1979 Nov. 18—Barry Evans is in a disastrous bicycle accident, breaking 5 vertebrae and 9 ribs. After a 14-hour operation, he spends 6 months on his back in the hospital and 1 year in a full-body cast.

1980 June—It was a disaster for Joseph and Patricia Carpenter, who had lived on the miso company land for the past ten months and expected to be owners of the miso company, when they were told to leave and, in their opinion, not told why.

1981 Nov. 10—It was a disaster for Michio and Aveline Kushi when their company, Erewhon, is forced to file for Chapter 11 bankruptcy protection because of debts totaling \$4.3 million. The Kushis also had to give up their dream of starting a miso company (named Erewhon Miso Co.) in America. It was also a disaster for the miso company which could no longer count on Erewhon to distribute its products.

1982 Jan. 31—It was a disaster for Sandy Pukel when he has to give up his stake in Oak Feed Miso, Inc. It was his "baby" and he, more than anyone else, was responsible for bringing it to this stage. Equally sad was the fact that his good relationship with John Belleme was strained for the rest of the 1980s; they didn't talk for years after this event.

1982 Jan.—It was a small disaster for Mr. Onozaki when John Belleme begged him to come to America from Japan to check John's koji-making. He didn't want to go. He spoke no English, had never been outside of Japan, and had a business to run at home. Yet he went to help a friend in need.

1983 Oct. 1—It was a disaster when John and Jan Belleme feel they must sell all of their ownership in the American Miso Co. (900 shares) to Barry Evans. They had devoted most of the last 4-5 years working to create and build this company.

1992 Jan.—It was a disaster for Barry Evans when he is forced to take a "federal vacation" in Santa Barbara, California, for 2½ years.

2000 July 4—American Miso Co. is the largest and most successful Caucasian-run miso manufacturer in the Western world. Who is and was responsible for this success? Most of the people named above.

Note: Some of the most interesting (juiciest) stories about this company remain untold, for reasons that cannot be disclosed at this time.

4118. Schaller, Lorenz K. 2000. Husked or covered barley vs. naked or hull-less barley (Interview). *SoyaScan Notes*. June 23. Preceded by a letter dated June 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The following is based on an article that Lorenz wrote in *The Cerealists*, Issue No. 1 (1989, p. 10-11, published by Kusa Research Foundation). All the different types of barley belong to the species *Hordeum vulgare*. This species is divided into two major groups: (1) Husked or covered barley, and (2) naked or hull-less barley. These two groups are not indicated as part of the scientific name, just as winter and spring wheat are not. However, if a scientist wants to indicate the naked form, he can write... var. *nudum*. Husked or covered barley, which has a husk "cemented" to the seed, is common in the West, where it is used for brewing and livestock feed. Naked or hull-less barley, of which the husk is easily removed (like the husk of wheat or rice) is more common in Asia (in Japan it is called *hadaka mugi*; *hadaka* = naked), especially in countries where barley is used as a food. Naked barley is the type generally used to make miso. "Naked barley closely resembles the free-threshing wheats, the naked grain sitting loosely in the spikelet between the lemma and palea, which show no adherence to the grain" (M.P. Charles. 1984. "Introductory remarks on the cereals." p. 29).

A mature barley plant bears a head or spike composed of individual spikelets. Each spikelet has glumes which completely enclose the seed in an envelope of fibrous husks.

The removal of the outer skins of the kernel is called "pearling." "Pearl barley" refers to barley that has been polished to remove the husk and outer bran layers. It is a word like "white rice." Husked or covered barley is more often pearled than naked barley. More than 99% of the barley available for food in modern developed countries is pearl barley. Scientists have found that naked barley is rich in beta glucones, phytochemicals that reduce "bad" cholesterol.

“Barley is the cereal most frequently mentioned in early Sanskrit records. It was introduced into India in ancient times and was probably the principal food grain during the Vedic Period (1600 B.C.–6000 B.C.)” “Barley, a sister crop of wheat, is the staple food of much of India’s poor. In India, barley has been a poor man’s crop, chiefly grown by small and marginal farmers in economically distressed areas.” In the early 1980s, greatly improved hullless barley cultivars were developed by a brilliant Indian barley breeder, Dr. Mahabal Ram.

“Caryopsis” is a morphological term, correctly applied only to the dried seeds of grasses. It’s meaning is identical to “seed” or “grain.”

The sunken black line running the length of a seed / kernel of barley (called *fundoshi* or “loincloth” in Japanese) is called the “crease” or, more precisely the “ventral groove” or “ventral crease” in English. “These terms are of immense utility to paleobotanists, persons who specialize in identifying ancient botanical remains, as they are sifting through archaeological debris and making attempts to identify plant part remains.”

When Americans eat barley, they do so mainly in soups and stews. Address: Founder & Director, The Kusa Seed Research Foundation, P.O. Box 761, Ojai, California 93024. Phone: 805-646-0772.

4119. Troy, John. 2000. Update on Wizard’s Cauldron and work with miso (Interview). *SoyaScan Notes*. June 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John’s original organization was the Lindenself Foundation, a nonprofit organization involved with Eastern spirituality. The linden tree symbolized the heart. Out of this grew Linden’s Elfworks, then Elf Works, Ltd., whose first product was a candy bar named Wizard Baldour’s Power Pac introduced in 1976, and containing ginseng. Elf Works, Ltd. was created outside of the nonprofit corporation, and it existed only briefly (1981-1984).

In about 1980, John was first introduced to miso by Joel Dee of Edward & Sons who was introducing his Miso Cup, a dehydrated miso soup. Troy’s next product was Wizard Baldour’s Hot Stuff (in regular or blazing intensities); it was the company’s first big success. It contained miso from the day it was launched. Troy first bought this miso from Erewhon (a fairly dark salty rice/red miso), but when Erewhon filed for Chapter 11 bankruptcy in Nov. 1981, Troy started buying his miso from Barry Evans of American Miso Co. It was John Belleme and Barry Evans who really got Troy interested in and involved with miso—before American Miso Co. had any miso for sale, but after their miso plant had been constructed. Troy can’t remember how, where, or when he met Barry Evans. Belleme told him about going to Japan and apprenticing with Mr. Onozaki. Later Barry Evans introduced Troy to John Fogg in Charlotte. Troy later worked closely with Fogg; “at first I thought he

was arrogant and fussy, but he ended up being a tremendous influence in my life, and taught me so much about marketing... To this day I still draw on the wisdom of John Fogg.”

Troy now makes almost 100 different products for the natural food trade. Most of these contain miso and/or soy sauce. All of his business is private labeling, so he develops and manufactures products, which other companies market. Across the street from his office is a modern, high speed blending, bottling, labeling plant, with plenty of cold storage. He manufactures and bottles every product he develops. His company, The Wizard’s Cauldron, Ltd., run small by a small team of leaders, now does about \$2 million a year in annual sales. His products are now almost totally organic—200 ingredients. John has just a handful of customers. The biggest is Whole Foods Markets; he makes all the salad dressings and sauces sold under the Whole Foods label. Second biggest is Joel Dee of Edward & Sons. Troy makes four brands for Joel Dee: Premier Japan, The Wizard’s, Troy’s, and Rain Forest Organic. Joel’s company owns the “Wizard” brand, which Troy gave him in 1987 as part of his “recovery plan” after American Natural Foods went down the tubes. Joel said, “You make it, I’ll sell it.” At about the same time, they also both developed the Premier Japan brand and line, which is still doing extremely well. In about 1995 John developed “The Wizard’s Worcestershire Sauce,” a vegetarian sauce, for Joel Dee. It is now selling better than Hot Stuff. Ponzu is the Japanese equivalent of Worcestershire sauce; they use bonito instead of anchovies. But ponzu originated first, so “Worcestershire sauce is a Western ‘knock-off’ of ponzu.” The Ginger Tamari is still a wonderful product that is doing very well.

Troy’s third largest customer is Albert’s Organics, America’s largest organic produce distributor, for whom he makes a line of fresh, refrigerated organic dressings. Albert’s Organics recently merged with UNFI (United Natural Foods, Inc., the collection of distributors that was Stow Mills, Cornucopia, Rainbow, Mountain People’s Warehouse, etc.). UNFI is now a big publicly-owned company. Troy’s favorite product developed for Albert’s is Mellie’s Miso Mustard Dressing, launched in 1998 with a mild miso from American Miso Co. Albert’s daughter is named Mellie.

John is now developing a line of dressings under the Moosewood Restaurant brand for the people who own that restaurant. John’s favorite is the Miso Ginger Salad Dressing. A few days ago he closed a deal with Robert Tepper (formerly of The Farm, in Summertown, Tennessee) to market his Simply Delicious brand of dressings. Robert now has his own company named Sunrise Management, which is a brand management company; Simply Delicious will be the first brand he owns. Robert worked for Natural Nectar, then Blue Sky, then Annie’s (which he left in early 2000 to start his own company).

John's main work is still developing new products and naming his creations—the work he enjoys most of all things. “It's really fun.” Blessed are those who find a way to do what they love most in life. Address: The Wizard's Cauldron, 8411 Hwy. NC 86 N, Cedar Grove, North Carolina 27231. Phone: 919-732-5294.

4120. Troy, John. 2000. Update on the Macrobiotic Company of America and Bruce Macdonald (Interview). *SoyaScan Notes*. June 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bruce was recently kicked out of the company (MCOA), Norio Kushi is now running it, but Muso owns most of it. Bruce has filed a lawsuit against MCOA. Barry Evans and Norio are trying to work together, since Barry would like to slowly get out of the distribution business (he owns Great Eastern Sun) and move towards building branded products.

A few days ago John heard that Mr. Kazama had decided not to sell any more of his Mitoku products to MCOA. Rather, he will help Bruce start a new company in Asheville, and Mitoku will sell to Bruce.

John heard from Norio a few days ago that MCOA wants to come out with a line brandnamed “Kushi Organic” to take the place of Mitoku. They want John to develop a line of miso-based sauces, dressings, etc. for them. “Kushi” is now a registered trademark, owned by Michio Kushi, who is willing to assign it to his son, Norio. Address: The Wizard's Cauldron, 8411 Hwy. NC 86 N, Cedar Grove, North Carolina 27231. Phone: 919-732-5294.

4121. Evans, Barry. 2000. A visit with Mr. Onozaki in Japan: The story of the guests who decided to stay (Interview). *SoyaScan Notes*. June 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In 1984 Barry and John Belleme both traveled to Japan where they visited Mr. Takamichi Onozaki, with whom John and Jan Belleme had spent seven strenuous months studying miso-making in late 1979 and early 1980. Barry visited Mr. Onozaki again last month in Japan. At about age 70, he was still his same energetic self, very active and healthy and full of vitality, and his daughter and son-in-law were still there living 10 feet away (in Japanese fashion) and working hard making miso. Barry recalls: “He is a wonderful person. When we pulled up, got out of the car, and I saw him there, I broke down and started weeping. I hadn't seen him in 15 years. I think of him as the father of our miso company and I feel the same great affection and respect toward him that I do to my own father. It was very special.” Mr. Onozaki then told Barry a story he had never heard before.

When the Belleme's showed up at his house, unannounced, in 1979, it was a disaster for him. He didn't want them to stay at all. He went out for a while, but when

he came back he found to his dismay that they had moved all their baggage into the room of his daughter who was away at college, and made themselves at home. They begged him to let them stay overnight, so he relented and said okay, but only for one night. The next day they persuaded him to let them stay for one more night. The whole time they were there, he tried to get rid of them, over and over again—but they bamboozled him at every turn. They talked him into letting them stay for one week, then for one month, then for one more month, then for three months, then for two months more. At every juncture, they had to fight their way to stay the extra time. They would cry and moan. Of course, by end of their stay, television crews were coming up to cover the amazing story of Americans who had come to Japan to learn how to make miso.

But as he told the story it was clear that he was now quite proud of the fact that his disciples had started what is today the largest Caucasian-run miso factory in the Western world.

He then told Barry about how John seemed to have lost some confidence in his koji-making ability during the first season. John asked Mr. Onozaki if he would come to the United States and check that he was making the koji correctly. Mr. Onozaki said that he refused to come the first 3-4 times that John asked him. He had never been outside Japan before, and he has never left it since. He didn't want to go—at all. He didn't speak any English. How would he find his way? He had an active business to run at home. But John just kept insisting that he had to come. Mr. Onozaki said that eventually he remembered an old Japanese saying: “When a friend says he really needs your help, you've got to try to help!” So he felt that he just had to go, though he did so “kicking and screaming.” Several months later, he sent his daughter and son-in-law in his place.

On the 1984 trip to Japan, after visiting Mr. Onozaki in northern Japan, John and Barry visited the Muso Company (*Muso Shokuhin*) in Osaka (south-central Japan), then the Fujiwara Brewing Company in Hiroshima (a manufacturer of equipment for making beer, soy sauce, miso, etc.; Barry was considering making shoyu in North Carolina), then the company that makes sweet white miso for Muso in Fukuoka (on Kyushu, Japan's southernmost island).

On a 1983 trip with Robbie Swinnerton of Mitoku (John Belleme was not along) Barry visited Sendai Miso-Shoyu Co. in northern Japan. Address: Owner, American Miso Co., Inc. and Great Eastern Sun, Asheville, North Carolina 28806. Phone: 704-252-3090.

4122. American Miso Co.; Tax Dep. of Rutherford County, North Carolina 2000. Maps of American Miso Co. land and buildings. Rutherfordton, North Carolina. 7 p.

• **Summary:** These seven maps were sent by Greg Gonzales of American Miso Co. (AMC). The information on dates of sale and where those land deeds were recorded was

provided by Mae McMahan of the Rutherford County records room (Phone: 828-287-6195).

Map 1 (which is part of the larger Map 571, Block 1 of the Rutherford County Tax Dept.) shows the land owned or formerly owned by AMC—consisting of three lots. Lot 33 (tract 1), 66.97 acres, was purchased on 7 Aug. 1979 by Oak Feed Miso Inc. from Lawrence L. Bridges and E. Milton Singletary (Deed Book 405, p. 727). Lot 33-A (tract 2), 7.5 acres, was purchased on 9 March 1981 by John Belleme from American Miso Co. (Deed Book 422, p. 228). John sold this lot on 19 May 1986 to Jack Benny Lovelace (Deed Book 486, p. 335), and Mr. Lovelace now lives on that land. And lot 33-B, 19.11 acres, was purchased on 1 Sept. 1995 by Donald J. DeBona from American Miso Co. (Deed Book 656, p. 368). The total area of the three parcels is 93.58 acres. The amount purchased by American Miso Co. on 7 Aug. 1979 was 92.38 acres.

The main lot, 33, the only one presently owned by American Miso Co., is basically a rectangle, about 2.75 times as wide as it is high, with its long sides running east-west. A boundary line running north-south down the middle shows that it once consisted of two separate lots. It is bounded on the southeast corner by Maple Creek Road, and on a long, diagonal northeast corner by a boundary line. Parallel to this line, and a little southwest of it runs a stream which flows from northwest to southeast into Maple Creek, located just east of and parallel to Maple Creek Road. Between the stream and the northeast boundary is a 5-acre pasture that belongs to the company. Lot 33-A, the smallest lot, is in the northwest corner of Lot 33; it was purchased from Barry Evans by John Belleme, who built the foundation of a house on it; he later sold it to a Mr. Lovelace, who finished building the house and now lives in it. Lot 33-B, located just east of center of Lot 33, contains the large house which, with the lot, is now owned by Don DeBona. He lives there and is the American representative for an Australian import-export; he works out of his home. This is the house where Joseph and Patricia Carpenter, then John and Jan Belleme once lived.

Map 2 (drawn by Greg) is an improved version of Map 1 showing, the correct location of the stream, of the dirt road leading to the cabin where Greg stays on koji nights, of the four miso-company buildings, the two paved asphalt areas by the entranceway (for parking and where large trucks can back in and unload onto loading docks) and the well house. All water used in making miso comes from this well, which has very pure water, but is still tested regularly for purity. A lot of kudzu grows on the property.

Map 3 shows the outlines (incl. correct size and spacing) of the four American Miso Company buildings.

Map 4 shows building A, located furthest south on the property and nearest the entranceway. It contains the rice milling machine, pallets of rice, break room, and office.

Map 5 shows building B, one of the two largest buildings, in which are located the new and old koji rooms, water tank, boiler, steamers, soybean cooker, soybean cooling table, 12 miso vats and two short-term storage areas.

Map 6 shows building C, which is attached to building B, and is the packing room; it contains the incubation room, tables, miso auger and cooler.

Map 7 shows building, the other large building, which is located furthest north on the property. In it are many miso vats and pallets of soybeans, plus a cooler for refrigerating short-term miso before it is shipped. A road runs next to the four buildings along their southwest side, then curves onto lot 33-B and ends at Don DeBona's house. The miso company consists of four buildings.

4123. Stewart, Martha. 2000. Edamamé. Television broadcast. Tuesday, June 13. Martha Stewart's Living program.

• **Summary:** The first segment of this TV program is titled "Edamamé" (3 minutes, 20 seconds). Martha Stewart, one of the most famous women in America today and a leading authority on entertaining and cooking, begins by holding a package of Trader Joe's precooked, frozen edamamé and saying: "If you see edamamé in the freezer section of your grocery store, buy a package and try it. It's really fantastic. I'm always looking for healthy, easy-to-prepare snacks that are also nutritious—and these are just the answer." Inside the fuzzy green pods are soybeans. Soy sauce, miso, and tofu are among the many other yummy foods made from soybeans.

Martha demonstrates how to cook the soybeans, following the instructions on the package, by boiling them in heavily salted water for about 5 minutes. Have a bowl of iced water nearby in the sink. "Soybeans like this are packed full of vitamins, nutrients, and unsaturated fats—the kinds of fats that break down cholesterol in your body. As such, I suggest that you try 'em as a snack." Lift the edamamé out with a strainer, then lower the strainer into the iced water. Leave until cool, but not too long, lest they become soggy. Drain in the strainer, then while they are still a little bit damp, sprinkle them generously with natural sea salt—the kind with irregular crystals. Then they are ready to eat. "You just squeeze on the pod, and the little soybean pops out. Mmmm. Really good." "Keep a supply of this edamamé in your freezer, and the next time guests stop by or your children come home from school, you'll be prepared with a really healthy and delicious snack."

Talk with Tak Kimura. 2000. July 11. To prepare precooked, frozen edamamé: After the green pods are picked from the soybean plants, they are rushed to the packaging plant, blasted with steam (to clean the surface of the pods), immediately blanched in boiling water for 4-5 minutes (to help them keep their bright green color and

good flavor and texture), then quickly frozen and packaged. A large percentage of the edamamé consumed in Japan today are sold frozen like this, so that they can be enjoyed year-round. This new frozen trend started in about 1990; before that Japanese enjoyed edamamé as a seasonal food, fresh during the summer only. Nowadays quite a few companies even freeze the fresh edamamé during the summer, because they find that dealing with fresh foods is a nuisance.

Note: Martha Stewart has been able to turn her own lifestyle into a major industry. A successful model during the late 1950s and early 1960s, she was even more successful as a Wall Street stockbroker, and again very successful in a catering business she started. In 1982 she wrote a best-selling book titled *Entertaining*. Her ideas about gracious living have had a major influence. Address: Westport, Connecticut.

4124. Wollner, Joel. 2000. Mr. Kitani of Yamaki Co. in Japan has a huge new shoyu and miso factory that uses 100% organically grown ingredients (Interview). *SoyaScan Notes*. July 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In June 2000, on a trip to Japan and China, Joel (together with translator and guide Yoshi Nanabayashi) visited Mr. Tomio Kitani, owner of Yamaki Jôzô K.K. in Saitama prefecture, Japan. He is about age 60 and very healthy and vital. Several years ago he moved from the nearby town into the mountains, where he built a huge new factory where he makes miso, shoyu, tofu (fresh and instant), and pickles. The company's address is (written Japanese-style): Saitama prefecture, Kodama-gun, Kamiizumi Mura, Oaza Shimo, Akuhara 955. Phone: 0274-52-7000. Fax: 0274-52-7001. Plant manager: Morikawa Kazuhiko. The nearest railroad stop is Kodama station.

The company has about 80 huge shoyu vats filled with moromi. Most of his miso is short-term—1 to 3 months. His koji rooms are fully automated. Yamaki Co. is extremely important in the world of organic miso and shoyu in Japan. Joel thinks they make more of these products than Sendai Miso Shoyu, and may be the biggest such manufacturer in Japan. He also bottles and sells water from a spring he owns. His company is flourishing, and growing very rapidly. Some 90-95% of his market is in Japan; the rest is miso and shoyu exported to the USA. He is the 4th of 5th generation owner, and he hopes his son will take over from him within the next ten years or so. The main ingredient he uses is soybeans, but all of his ingredients are organically grown in Japan by MOA (Mokichi Okada International Association), a quasi-religious, quasi-cooperative organic farmers organization and movement. MOA is one of the pioneering and most important organic organizations in Japan.

Joel first visited Yamaki in 1985 when he, Bob Kennedy, and Herman Aihara were setting up Ohsawa America (after Kennedy had sold Chico-San to Heinz). Joel later brought in Martin Roth—who is now married, lives in Berkeley, and is head of a marketing company with Kristin Brun (who lives in El Cerrito). Ohsawa America, which traded with Ohsawa Japan, no longer exists. Address: 76 Florida Ave., Berkeley, California 94707. Phone: 510-524-4420.

4125. Wollner, Joel. 2000. Macrobiotics in America today (Interview). *SoyaScan Notes*. July 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Joel, who has been deeply involved with macrobiotics for more than 30 years, observes that in America today, “the macrobiotic movement is much smaller and less vital at its core” than it was, say, 10 years ago. “But its influence has spread enormously.” Joel can see the profound influence of macrobiotics throughout the natural foods and organic foods industries, even in the words and phrases that people use, or in basic concepts about organics—such as the number of years for transitions. Many people in these two industries today are unaware of these deep influences. Erewhon was more successful at forming an industry than at forming a viable company.

Barry Evans, owner of American Miso Co. and Great Eastern Sun, two companies that for years have had macrobiotic customers as their base, adds: “If only there were a macrobiotic community still in existence. It’s pretty well gone, but there are some remnants left.” Address: 76 Florida Ave., Berkeley, California 94707. Phone: 510-524-4420.

4126. *SoyaScan Notes*. 2000. Chronology of Erewhon Miso Co., Oak Feed Miso, Inc. and American Miso Company (Overview). July 6. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** These three companies are actually the same company whose name changed. This chronology is based largely on dated documents. Undocumented dates are usually followed by question mark. Notice the many unusual twists and turns in the story.

1977 Aug. 2—A bee flies into the cabin of a big truck near Rutherfordton, North Carolina. As the driver tries to swat it, his truck swerves across the road, smashing into a car driven by Bob Deakin, killing Bob’s daughter (age 12½) and severely injuring Bob and his young son.

1978 Dec.—Sandy Pukel, Michio Kushi, and John Belleme get together in Boston to discuss the miso factory. They agree on quite a few points. All three are deeply interested in macrobiotics.

1979 Jan. 26—The bank (Tryon Federal Savings and Loan) forecloses on Bob and Karen Deakin’s mortgage. Still injured from the car accident, he is unable to make his land payments. The land goes on the market.

1979 Feb. 28–Oak Feed Miso, Inc. is incorporated in Florida. The initial directors and officers are Sandy Pukel and John Belleme. 1979 Feb?–A contract is drafted by David Young (though never signed) showing what percentage of the proposed Erewhon Miso Co. will be owned by the Erewhon group (comprised of Sendai Miso-Shoyu Co., Michio and Aveline Kushi, and maybe Mitoku / Mr. Kazama) and by the Oak Feed Group (comprised of Sandy Pukel and John Belleme). The Erewhon group was to have the majority ownership, and Japanese companies and individuals were expected to play a major role in the new company.

1979 March–Joseph Carpenter looks for land in Rutherford County, North Carolina. Talks with several insurance agents.

1979 spring–Members of the Oak Feed and Erewhon groups meet in North Carolina in the first attempt to locate a site for the miso plant. In attendance are Michio and Aveline Kushi, Sandy Pukel, John Belleme, Frank Head, and Junsei Yamazaki and his wife (both from California).

1979 April–Barry Evans makes his first investment in the miso company, \$50,000.

1979 June?–Sandy Pukel travels to North Carolina and makes the down-payment on a piece of land in Rutherfordton. The roughly 92 acres cost about \$110,000 to \$120,000.

1979 Aug. 7–Oak Feed Miso, Inc. finalizes the purchase on the 92 acres of land by assuming the second mortgage and paying an additional \$11,500 each to Lawrence L. Bridges and E. Milton Singletary. Sandy Pukel (president) and John Belleme (secretary) sign the land deed and deed of trust.

1979 Aug. 16–Subscribers Consent Agreement executed.

1979 Aug. (late)–Joseph and Patricia Carpenter arrive in Rutherfordton from Florida to live and work on the miso company land.

1979 Oct.–John and Jan Belleme leave for Japan to begin an apprenticeship with a miso master. They stop by the land in North Carolina to visit briefly with the Carpenters, then also visit Thom Leonard at Ohio Miso Co. Arriving in Japan in late October, they visit Mr. Kazama in Tokyo then travel north with him to Yaita, where they study miso-making with the Onozaki family—which makes only dark rice miso. A good, long letter from Jan describing their experiences is published in 1980 in the book *Macrobiotic Cooking for Everyone*, by Edward and Wendy Esko.

1979 Nov. 18–Barry Evans is in a very serious bicycle accident.

1980 April–A detailed letter by John, about his miso apprenticeship with the Onozaki family in Yaita, Japan, is published in *GOMF News*, a small macrobiotic magazine from Oroville, California.

1980 June–John and Jan Belleme return to the USA from Japan. That summer John located the remaining miso equipment in New Jersey and ordered wooden vats from the Arrow Tank Co. in Buffalo, New York.

1980 fall–John and Jan go on the Erewhon payroll.

1980 Sept. 29–Work has just begun at Rutherfordton in leveling the site for miso factory, which is going to be a metal Butler building. By late 1980 John and Jan begin to make their first experimental batches of one-year rice miso, at their home, in the sauna.

1981 early–The project stalls for lack of funds. John starts writing articles about his trip to Japan. One goal is to convince Barry not to abandon the project.

1981 Jan.–“The Master of Hoops,” John’s first article, is published in *East West Journal*.

1981 March 9–John Belleme is deeded 7.5 acres of land by American Miso Co. in the northwest corner of the AMC property; later he starts to build a house there.

1981 April–“The Miso Master’s Apprentice,” John’s second article, is published in *East West Journal*.

1981 July–“The Miso Master With a Big Heart: Making Miso in a Japanese Village,” John’s third article, published in *Soyfoods* magazine. Contains many good photos of miso making in Japan.

1981 July–The beautiful and joyous opening ceremony for the Erewhon Miso Co. is held at Rutherfordton, North Carolina. Those present include Michio and Aveline Kushi, John and Jan Belleme, Sandy Pukel, Barry Evans. It is a moving experience for all. But behind the scenes, Erewhon’s financial is rapidly deteriorating—due largely to too rapid expansion.

1981 Aug.–John and Jan Belleme begin full-time large-scale production of one-year Onozaki-style red (rice) miso at their plant in Rutherfordton.

1981 Sept. 27–The annual meeting of the Oak Feed Miso Co. is held at Rutherfordton, North Carolina. Barry Evans is appointed acting chairman. Shares in company are owned as follows: Barry Evans 1,400, Sandy Pukel 1,400, John Belleme 900, Yozo Masuda 100, Edmund Benson 100, and James Kenney 50. All stock is converted to one kind, Class A, which is voting stock. Thus, for the first time, Barry gets the right to vote and becomes a member of the board of directors.

1981 Aug.–John and Jan Belleme begin fulltime, large-scale production of miso and koji at their new plant in Rutherfordton, North Carolina. Fourteen months have passed since they returned from Japan. Twelve more months must pass before this miso is ready to sell.

1981 Nov. 10–Erewhon files for bankruptcy protection under Chapter 11 of the Federal Bankruptcy Act because of debts totaling \$4.3 million. At his time, Aveline Kushi is the sole owner of Erewhon. Thus, the miso company can no longer count on Erewhon to distribute its products. Apparent disaster!

1981 Dec.—Barry Evans establishes Great Eastern Sun (GES) in Asheville, North Carolina, in part to package and market the miso made by AMC. Mitoku, almost destroyed by Erewhon's collapse, and eager to rebuild, agrees to export Japanese natural foods to GES.

1982 Jan. 4—Barry Evans sends out a letter announcing the opening of The American Miso Company in North Carolina. The company now has a new name (it was officially changed on 5 May 1982). Barry also announces that Linden's Elf Works (Rougemont, North Carolina), run by John Troy, has been appointed as AMC's sole marketing and distribution agent. Note: This arrangement was very short-lived; Elf Works never distributed any of AMC's miso. Great Eastern Sun did all the distribution.

1982 Jan.—Mr. Takamichi Onozaki comes to America from Japan to see how well his students had learned his lessons. He stays and helps make koji and miso for 2-3 weeks, until he is fully satisfied that all is well.

1982 Jan. 31—Barry Evans and Sandy Pukel agree to a swap of stock, such that Barry gets all of Sandy's stock in the miso company and Sandy gets all of Barry's stock in Oak Feed Store and Restaurant. After this, Sandy is no longer involved with the miso company. Barry and John Belleme now own all the company's shares, and Barry owns a large majority.

1982 April—Great Eastern Sun makes its first sale, of products imported from Mitoku in Japan to a natural foods store in the USA.

1982 April—Mr. Onozaki's his adopted son, Haruo, and eldest daughter, Kaoru (Haruo's wife), arrive in Rutherfordton and spend 3 months sharing the Belleme's home, helping Jan who is pregnant, and helping to make miso. The Bellemes' son, Justin, is born on May 24.

1982 July—The first detailed article about American Miso Co. and its method of making miso (with many fine photos) is published in *Soyfoods* magazine: "American Miso makes a Big Move Down South," by Richard Leviton, who visited the company in April. The company "has struck a careful balance between the traditional approach (as in making koji, which requires skill and personal attention) and labor-saving mechanization (as with bean washing, soaking, cooking, mixing, and moving)."

1982 Sept.—The first miso made by AMC is sold by Great Eastern Sun. It is one-year, Onozaki-style red miso, sold in bulk only in 4 lb, 15 lb, and 40 lb tubs.

1983 Oct. 1—John and Jan Belleme sell all their ownership in the American Miso Co. (900 shares) to Barry Evans for \$30,000. However, John continues to work making miso for AMC. Throughout the past year he has been experimenting with making mellow white and mellow barley misos. Great Eastern Sun is now selling about 50,000 lb/year of white miso from other sources.

1984 fall—AMC miso first starts to be sold in one-pound plastic coffee bags (each with a pressure release valve),

refrigerated. A full-page ad showing the bag appears in the Jan. 1985 issue of *East West Journal*. Previously, all their miso had been sold in bulk.

1985 Feb.—Don DeBona leaves his job as general manager at Great Eastern Sun and begins to work at American Miso Co., learning the process from John Belleme.

1985 April?—AMC introduces three varieties of relatively sweet, light-colored, short-term misos: Mellow White Miso, Mellow Barley Miso, and Amakuchi Mugi Miso—a shock to traditional macrobiotic followers. These light misos were sold in the plastic bags. As of July 2000, half the company's sales come of such short-term types of light miso.

1985 Dec.—Don DeBona takes over management of the company. John Belleme leaves. It was a difficult transition.

1985 Dec. 31—AMC has its first profitable year, earning \$22,000 in calendar year 1985.

1986 early—AMC miso starts to be sold in one-pound plastic cups/tubs, refrigerated. The plastic bags are phased out.

1987 fall—AMC miso starts to be sold in 8-oz plastic cups.

1988 Feb.?—New koji room designed and built by Don DeBona. Constructed at floor level with a large door and high ceiling, it enables the koji crib and racks of koji trays to be wheeled in and out. Before, all the koji had to be carried in and out by hand.

1992 Jan.—Barry Evans is required to take a "federal vacation" in Santa Barbara, California, for 2½ years. He hands the management of American Miso Co. and Great Eastern Sun over to Don DeBona.

1992—American Miso Co. builds a second factory as large as the first.

1993—American Miso Co, now has 41 huge wooden (mostly cedar) miso vats, each of which holds over 4 tons of miso. Starting with only eight vats, they added six in 1986, seven in 1989, five in 1991, and fifteen more in 1993. Also in 1993 AMC begins to export its miso to Europe, where it is distributed by Lima throughout the continent.

1995 April—Greg Gonzales starts work at American Miso Co. learning the process from Don DeBona.

1995—AMC uses up the last of tax loss carryforwards; total past financial losses go to zero.

1997 March—Greg Gonzales takes over management of the company after Don DeBona leaves.

4127. Gorman, Christine. 2000. Heart throbs. *Time*. July 10.
 • **Summary:** How does a person know that they are having a heart attack? A viselike pressure in the chest is the most common symptom. But recognizing the less common signs of a heart attack could save your life. You should be especially suspicious of any "heartburn" that gets worse if you walk around or otherwise do mild exercise.

One heart attack patient ordered “miso soup to treat what she thought was indigestion.” Fortunately her daughter noticed her ashen complexion and slurred speech, then rushed her to a hospital.

4128. Belleme, Jan. 2000. Work with American Miso Co. (Interview). *SoyaScan Notes*. July 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** After she and John had been living at the Onozaki’s home in Japan for about a month, a letter came from Mr. Kazama (of Mitoku) saying that Mr. Onozaki did not want to teach them any more about making koji—so they would have to leave any day now. This was disastrous news for them. Then, without an explanation, Mr. Onozaki changed his mind, and they ended up staying for 7 months.

After John and Jan returned from their apprenticeship with Mr. Onozaki in Japan, Jan worked side by side with John making koji and miso. In 1981, when she was pregnant, she had to increasingly take it easy. She worked up until the 7th month of her pregnancy; their son, Justin, was born on 24 May 1982. Address: P.O. Box 457, Saluda, North Carolina 28773.

4129. **Product Name:** [Tofu Mayonnaise, Miso].

Foreign Name: Tofunesa, Miso.

Manufacturer’s Name: Organica-ecotienda.

Manufacturer’s Address: Xicotencatl 653-18, Col. Centro, Veracruz, VER 91700, Mexico. Phone: 29-31-30-83.

Date of Introduction: 2000. July.

New Product–Documentation: Letter and form filled out by Pat Hayward. 2000. Aug. 25. This company is managed by Pat Hayward and Claudia Gutierrez. In July 2000 they introduced Tofunesa and are now making about 4 kg/month. “My first ever miso was packaged yesterday and although it’s not perfect yet, I was very excited that it turned out so well. It served to straighten out some kinks in the process (e.g., the problem here is not keeping the koji hot but how to keep it cool. Room temperature is about 31-34° C so I had to use my hair drier on cold blow to lower the temperature of the bundle). That batch was Red Miso, and now I’m set for the first trial of Mellow White. Will keep you posted!”

They are now developing shoyu, which they hope to start selling in Sept. 2000.

4130. Shurtleff, William; Aoyagi, Akiko. comps. 2000. *Miso and soybean chiang—Bibliography and sourcebook, first century B.C. to 2000: Detailed information on 2,619 published documents (extensively annotated bibliography), 343 commercial miso products, 304 original interviews (many full text) and overviews, 372 unpublished archival documents.* Lafayette, California: Soyfoods Center. 1026 p.

Subject/geographical index. Author/company index.

Extensively annotated. Printed July 10. 28 cm. [3198 ref]

• **Summary:** Miso, or “fermented soybean paste,” is one of East Asia’s most important soyfoods. Miso is an all-purpose high-protein seasoning, which has no counterpart among Western food or seasonings. Made from soybeans, rice or barley, and salt, its smooth or chunky texture resembles that of soft peanut butter. It comes in a wide range of warm, earthy colors ranging from light yellows to rusty reds, rich chocolate browns, or loamy blacks. Each miso has its own distinctive flavor and aroma, which for the darker, more traditional varieties is savory, and sometimes almost meaty, while for the lighter-colored types is subtly sweet and delicately refreshing. Miso’s range of flavors and colors, textures and aromas, is at least as varied as that of the world’s fine wines or cheeses.

Today miso is made by a small number of companies in the United States, Canada, Europe, and (as miso or miso products) is widely available at supermarkets, natural- and health food stores, and Asian stores.

This book contains the first detailed history of each of America’s pioneer miso manufacturers.

This is the most comprehensive book ever published about miso and/or soybean chiang. It has been compiled one record at a time, over a period of 25 years, in an attempt to document the history of this subject. Its scope includes all known information about these two seasonings, worldwide, from the first century B.C. to the present. It is also the single most current and useful source of information on this subject available today, since 86% of all references (and most of the current ones) contain a summary/abstract averaging 229 words in length.

This is one of more than 40 bibliographies on soybeans and soyfoods being compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyfoods Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features: 63 different document types, both published and unpublished, every known publication on the subject in every language—including 2,368 in English, 618 in Japanese, 120 in German, 105 in French, etc. Extensive translations of many of the Japanese and European works. 304 original Soyfood Center interviews and overviews never before published. Thus, it is a powerful tool for understanding the development of this subject from its earliest beginnings to the present, worldwide.

The bibliographic references in this book include 2,169 published documents and 372 unpublished archival documents. Each contains (in addition to the typical author, date, title, volume and pages information) the author’s address, number of references cited, original title of all non-English language publications together with an English translation of the title, month and issue of publication, and the first author’s first name (if given).

This book also includes details on 343 commercial miso products, including the product name, date of introduction, manufacturer's name, address and phone number, and (in many cases) ingredients, weight, packaging and price, storage requirements, nutritional composition, and a description of the label. Sources of additional information on each product (such as advertisements, articles, patents, etc.) are also given.

Details on how to make best use of this book, a complete subject/geographical index, an author/company index, a language index, and a bibliometric analysis of the composition of the book (by decade, document type, language, leading periodicals or patents, leading countries, states, and related subjects, plus a histogram by year) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

4131. Shurtleff, William; Aoyagi, Akiko. comps. 2000. Marketing miso and miso products: Labels, ads, posters & other graphics. Lafayette, California: Soyfoods Center. 158 leaves. July. Illust. (some color). No index. 28 cm. Series: Marketing soyfoods.

• **Summary:** This book is a collection of 85 color and 73 black-and-white photocopies of materials ranging in date from 1971 to 1999. The books in this series, each a unique collection of graphic materials, are designed for a number of purposes: (1) To serve as a source of ideas, ingredients, inspiration, legal specifications, and basic guidelines for companies in the process of developing their own products, designing their own graphic materials, and conceiving their own marketing strategies. (2) To document the tremendous diversity of soyfoods products and the way that each is presented and marketed. (3) By arranging the materials in chronological sequence, to help document the development and history of new product categories and soyfood types, and with them the rise of the soyfoods industry and market in the Western World. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4132. Asimov, Eric. 2000. \$25 and under: Going beyond sushi, on an unlikely street. *New York Times*. Aug. 30. p. F9.

• **Summary:** This is a review of the Japanese restaurant Miyagi (220 West 13th St., Greenwich Village—a largely residential area on the west side of downtown {southern} Manhattan in New York City). One of the writer's favorite dishes was "greens tossed with delicate soy milk skins [yuba] in a mustard-and-miso dressing (\$4.25). The dish is so bright and winning that only on closer examination can you tell that the greens are broccoli rape."

4133. Elliott, Julia. 2000. Simply soy: Nature's own antidote. Clifton, Virginia: Pocol Press. xiv + 112 p. Aug. Index. 22 cm. [37 ref]

• **Summary:** Contents: Prologue. The problem: Menopause—a natural event, causes... and effects, my own changing. The solution: The soybean—a little bean with a big history, soy—nature's own alternative, the benefits of soy. The program: Soy food products, cooking with soy, soy recipes, cooking with tofu, tofu recipes. Guideposts for the journey: Warning, risks, and wisdoms, vitamins, minerals, and water, herbal alternatives, meditation, massage, and acupuncture. Epilogue. Appendices: Readings and resources (women's health resources, books about menopause, menopause web sites, books about soy and tofu, general information sources, soy product sources, soybean web sites), source notes, bibliography. About the author. Address: 10 Guyton St., Kingston, New York 12401. Phone: 914-338-6368.

4134. *SoyaScan Notes*. 2000. Status of the soybean in the USA and worldwide as of Sept. 2000: A few basic facts and statistics (Overview). Sept. 6. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The soybean is by far the world's most important oilseed or legume: World production in 1998 in million metric tons was: Soybeans 134.06. Cottonseed 33.52. Rapeseed 31.33. Peanut 26.37. Sunflowerseed 23.50. Total of the top 5 oilseeds: 249.14, with soybeans accounting for more than half of the total (54.0%).

The United States is by far the world's largest producer of soybeans, producing almost as much as all other countries combined! Leading world soybean producing countries in 1998-199 in million metric tons were: United States 75.028 (and 28.6 million acres). Brazil 31.000. Argentina 18.300. China 13.800. India 6.000. Paraguay 3.100. Canada 2.737.

Top four soybean producing states (million bushels) in the USA in 1998: Iowa 501. Illinois 468. Michigan 285. Indiana 235.

Value of the U.S. soybean crop in 1998: \$14.6 billion. Of the Indiana soybean crop: \$1.25 billion.

How are U.S. soybeans utilized? About 35.6% of the crop is exported as whole soybeans, 60% is crushed to make soy oil (by far the most widely used vegetable oil in America today) and soybean meal (which is fed to livestock, poultry, and aquaculture animals), about 3% is transformed from whole soybeans into various soyfoods such as tofu, soymilk, miso, etc., and the rest is used as seed to plant next year's crop. Of the crushed soybeans, about 9% goes into industrial uses (non-food, non-feed) such as soy ink, soy diesel, etc.

How is soybean oil utilized in the USA? 96.2% is used for food and 3.8% is used for industrial (nonfood) uses. Of the total food uses: Cooking and salad oils 48.7%. Shortening 37.3%. Margarine 12.9%. Other 0.5%. Of the total industrial uses: Fatty acids, soap and feed 56.94%. Resins and plastics 18.14%. Inks 17.03%. Paints and varnishes 6.31%, Biodiesel 1.42%.

A good source of current soybean statistics is the ASA (American Soybean Association) website: www.unitedsoybean.org/soystats2000.

4135. Hagler, Louise. 2000. Soja: Wandelbarste Bohne der Welt. Eine 'coole' Proteinquelle [Soya: The most versatile bean in the world. A 'cool' source of protein]. Aitrag, Germany: Windpferd. 140 p. Illust. Index. 18 cm. [Ger]
• Summary: Foreword by Peter Golbitz. Foreword by Louise Hagler. Introduction by Dr. Mark and Virginia Messina. Basic soyfoods. Feeding babies and children soyfoods. Breakfast, brunch & bread. Whole soybeans. Sauces, spreads, dips & dressings. Soup & salad. Main dishes. Desserts. Drinks & yogurt.

No dairy products or eggs are used; honey is called for in some recipes. Address: The Farm, Summertown, Tennessee.

4136. Mangels, Reed. 2000. Nutrition hotline: The phytate component of soy products. *Vegetarian Journal (Baltimore, Maryland)* 19(5):2. Sept/Oct.

• Summary: "Phytates interfere with the absorption of minerals, but do not completely prevent us from absorbing minerals like calcium and iron. The presence of phytates is not a good reason for avoiding soy products. Whole grains and other dried beans also contain phytates."

"Fermented soy products, including tempeh and miso, have a lower phytate content so that zinc from these foods is better absorbed than from unfermented soy products like tofu and soymilk." Address: PhD, R.D., Baltimore, Maryland.

4137. **Product Name:** Cold Mountain Kyoto White Miso, Kyoto Red Miso, Mellow Red Miso (Made with Organic Soybeans; GMO Free).

Manufacturer's Name: Miyako Oriental Foods, Inc.

Manufacturer's Address: 4287 Puente Ave., Baldwin Park, CA 91706. Phone: (877) 786-MISO (6476).

Date of Introduction: 2000. September.

Ingredients: Filtered water, rice, organic whole soy beans, sea salt, koji starter.

Wt/Vol., Packaging, Price: 14 oz (397 gm) plastic tub. Retail for \$4.19 (2002/10, Lafayette, California).

How Stored: Refrigerated.

New Product–Documentation: Product with Label purchased at Open Sesame in Lafayette, California. 2001. Oct. 5 inches diameter at top, 2.75 inches high. Blue, black, tan, and light green on white. On the lid are recipes for: Miso soup. Miso salad dressing. Ingredients and product name are given in both English and French. "60% less sodium than regular miso."

Talk with Joe Arai at Miyako. 2002. Aug. 29. These three products were first sold in Sept. 2000. The containers for all Cold Mountain misos were redesigned and the

number of products in this line doubled to 6 from 3. This coming September, Miyako will expand into the building next door.

4138. Hirota, Akira; Taki, S.; Abe, N.; Yano, M.; Kawaii, S. 2000. Antioxidative activity and antiproliferative activity toward cancer cell lines of 8-hydroxyisoflavones from soybean miso. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 218-219. [4 ref]
 Address: 1-3. School of Food and Nutritional Science, Univ. of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan; 4-5. National Inst. of Fruit Tree Science, Okitsu-naka, Shimizu 424-0204, Japan.

4139. Ishigami, Takashi. 2000. Contract grow and IP [identity preserved] handling systems for the Japanese food soybean market. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 117-120.

• Summary: Japan is the world's largest soybean importer. Of the 4.9 million tonnes (metric tons) imported, about one million tons (actually 960,000 tonnes or 19.6%, called "food soybeans") are used for making tofu, miso, natto, soysauce, etc. The rest are crushed to make soybean oil and meal.

A table (p. 118) shows the quantity of soybeans obtained from various sources to make each of the major Japanese soyfoods in 1998, 1999, and 2000. In the year 2000, some 512,000 tonnes were used to make tofu, 168,000 tonnes for miso, 125,000 tonnes for natto, 40,000 tonnes to make soy protein and products, 30,000 tonnes to make soysauce (from whole soybeans), 6,000 tons to make soymilk, and 79,000 tons to make other products. Grand total 960,000 tonnes. Address: Marubeni Corp., Japan.

4140. Onishi, Yoshihisa. 2000. Adapting HACCP to Japanese traditional soybean food. In: Kyoko Saio, ed. 2000. Proceedings–Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 138-141.

• Summary: In 1996 Japan was hit by a series of intestinal hemorrhagic E. coli O157 cases nationwide. The Japanese are working to adopt HACCP (Hazard Analysis and Critical Control Points) to the soy sauce, miso, and tofu industries. Each food has its unique CCP. Address: Japan Food Industry Centre.

4141. Oser, Marie. 2000. More soy cooking: Healthful renditions of classic traditional meals. New York, NY: John Wiley & Sons, Inc. xi + 307 p. Foreword by John A. McDougall, M.D. Oct. Index. 23 cm. [61 ref]

• **Summary:** Contents: Foreword, by John A. McDougall, M.D. Acknowledgments. Introduction. The need for a plant-based diet: The protein question, the dairy myth, the international connection, what's eating North America?, soy: Food of the future, Functional foods. Soy-centered cuisine: Soyfoods and more: a glossary, beyond soyfoods. Kitchen tools, techniques, and tofu: Tools, techniques, tofu, cooking with spirit! The recipes: Amazing appetizers, the skinny on soups and salads, enlightened entrées, pasta and pizza, select sides, delightful desserts. Resource guide. Recommended reading.

On the rear cover is a small color photo of the author and a biographical sketch. Address: P.O. Box 3021, Thousand Oaks, California 91359-0021.

4142. Packaged Facts. Subdivision of Marketresearch.com. 2000. The U.S. soyfoods market. New York, NY. 150+ p. Oct. 28 cm. *

• **Summary:** This market study, No. LA595, retails for \$2,750. It examines the \$2.2 billion soyfoods industry, and the strategies that are used in causing this market to explode, including unique promotional programs, product innovations, and acquisitions. The report covers 5 product categories: Meat alternatives; Dairy alternatives; Snacks, cereals, and breads; Bulk soybeans; Meal replacements/protein powders. It also discusses other soyfoods (including soy sauce and miso) and profiles leading manufacturers. It projects sales trends through 2005 and gives details on distributor trends and consumer attitudes and behaviors. Available from Marketresearch.com, which has a database of over 6,000 reports from 350+ publishers.

Talk with representative of Packaged Facts. 2000. Oct. 31. Packaged Facts is no longer a subsidiary of FIND/SVP; they separated in about 1997 or 1998. FIND/SVP is, however, a strategic partner which conducts only custom market research; they have no off-the-shelf reports. Address: 625 Ave. of the Americas, New York, NY 10011. Phone: 1-800-346-3787.

4143. Paul, Donna. 2000. Made in New England: The artisanal food movement is flourishing in the Northeast... *Metropolitan Home* 32(5):213-18. Sept/Oct.

• **Summary:** "Artisanal foods—those made in a traditional, craftsmanlike manner, have long been produced in the Northeast. Today's surge in interest appears to stem from Americans' increasing desire to know more about where their food comes from... 'The human being is the missing ingredient in modern food,' says Christian Elwell, owner of the South River Miso Co. in Conway, Massachusetts. While technology speeds up the world, food artisans are slowing things down, devoting themselves to making first class food products in small quantities and by hand. Not surprisingly, the efforts of food artisans are revered by home cooks and chefs alike."

Contains "profiles of five of New England's finest artisanal food producers paired up with recipes from five of the region's best chefs." One of the companies is South River Miso. Color photos (by Donna Paul) show: (1) South River's miso aging outdoors, above green grass, in 7,500-lb. cypress vats, from 21 days to as much as 3 years. (2) Christian Elwell, using a wooden paddle, to stir steamed grains for making koji. The recipe is for Beef barbecued in white miso with icicle radish salad. A sidebar gives the company address and phone number.

4144. Watanabe, Shaw; Uesugi, S.; Zhuo, X. G.; Uehara, M.; Takamatsu, K. 2000. Effects of soy rich diet and isoflavone supplement on healthy women. In: Kyoko Saio, ed. 2000. Proceedings—Third International Soybean Processing and Utilization Conference. Tokyo, Japan: Korin Publishing Co., Ltd. [xxiv] + 728 + 8 p. See p. 203-206. [8 ref]

• **Summary:** Japanese consume 20-30 mg/day of isoflavones on average. This isoflavone intake is mostly attributable to tofu, natto, and miso. Address: 1-4. Dep. of Nutritional Science, Tokyo Univ. of Agriculture, Tokyo 156-8502, Japan; 5. Research Inst. of New Materials, Fuji Oil Company.

4145. *Canadian Soybean Bulletin (OSG, Chatham, Ontario, Canada)*. 2000. Incoming Japan soybean mission. 14(2):1. Nov.

• **Summary:** Japan imports 5 million tonnes (metric tons) or 184 million bushels soybeans each year. Of that, about 1 million tonnes (20%, or 37 million bushels) are used to make soyfoods such as tofu, miso, natto, soy sauce, etc. Of the 1 million tons, 500,000 tonnes (50%) are for tofu, 160,000 tonnes (16%) are for miso, and 130,000 tonnes for natto.

Exports of Canadian have been increasing rapidly, from 36,000 tonnes in 1995, to 75,000 tonnes in 1998, to 175,000 tonnes in 2000.

In Sept. 2000, the Canadian Soybean Export Association and the Ontario Soybean Growers hosted ten Japanese from the soyfoods industry and showed them the Canadian soybean industry. These Japanese were most appreciative "of our efforts to segregate GMO and non-GMO varieties of soybeans using our Identity-Preserved, or IP program."

4146. South River Miso Co. 2000. We are now on the Web and ready to take your order (Postcard). Conway, Massachusetts. 1 p. Postmarked Nov. 21. Front and back.

• **Summary:** On the front of 4¼ by 6-inch card is a color photo of Stephen Jannetta ladling steamed grain out of a cauldron to make koji at South River Miso Co. in late 1993 or early 1994. Across the top is printed "www.southernrivermiso.com."

On the back: "For recipes. To order direct. If you would like to receive our current pricelist by mail, please let us know." Address: 888 Shelburne Falls Rd., Conway, Massachusetts 01341. Phone: (413) 369-4057.

4147. South River Miso. 2000. South River Miso (Website printout—complete). [Http://www.southernrivermiso.com](http://www.southernrivermiso.com). Printed Dec. 16.

• **Summary:** Contents: Home page (Welcome, two photos, quotation about miso from Dr. Shinichiro Akizuki). 1. About us (Our mission, our story, history; 3 p., 3 photos, 3 illustrations). 2. About miso (1 year miso, sweet-tasting brown rice miso, chick pea miso, azuki bean miso, golden millet miso, mellow barley miso, quotations from two satisfied customers; 2 p.) 3. Miso recipes (Contains no actual recipes, but the viewer can download 26 recipes using Acrobat reader; 2 p.). 4. Our products (Same as section 2, "About miso"; 2 p.). 5. Order (Order form, bulk order, order sampler, Tee shirts; 3 p.). Address: 888 Shelburne Falls Rd., Conway, Massachusetts 01341. Phone: (413) 369-4057.

4148. *SoyaScan Notes*. 2000. Chronology of major soy-related events and trends during 2000 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. 8—The Kerry Group (of Wisconsin and Iowa) purchases Solnuts, a pioneer manufacturer of dry-roasted soy nuts, in Hudson, Iowa.

Jan.—Kraft Foods Inc. (Illinois) purchases Boca Burger Inc., America's third largest maker of veggie burgers, after Worthington Foods and Gardenburger.

March 6—The Hain Food Group announces that it will acquire the Celestial Seasonings tea company to become the largest natural foods company in the USA.

March 9—The USDA formally approves a rule change allowing soy protein products to completely replace meat products in the Federal School Lunch Program.

March 31—Monsanto, the world's leading agricultural biotech company, merges with Pharmacia & Upjohn (a large pharmaceutical company), and the new company is renamed Pharmacia Corporation.

April—An article by Lon White on tofu and brain aging is published in *J. of the American College of Nutrition*.

June 9–20/20 (ABC) television program, titled "Soy—The untold story," airs on Friday at 10:00 p.m. discusses many of the shortcomings of soyfoods, but in a very fair way.

June 13—Martha Stewart, on her popular nationwide TV program *Living*, has a very positive segment on edamamé.

July 14—Lightlife Foods Inc. (of Turners Falls, Massachusetts) is purchased by ConAgra Inc., a \$25 billion food company based in Omaha, Nebraska—for an undisclosed amount. Lightlife's plant, employees, and management team will stay in place. Lightlife is a leading

maker of vegetarian meat alternatives, with 150 employees and about \$25 million in annual sales.

July—At a joint meeting of ASA and USB, the International Soy Protein Program (ISPP) was born as ASA and the Illinois Soybean Program Operating Board (ISPOB) formalized their joint commitment to "Increase the international consumption of soy protein by humans in new markets—developing countries—and thereby create new opportunities for disappearance of soybeans and provide higher economic returns to U.S. soybean producers." ISPOB and its Executive Director Lyle Roberts were instrumental in conceiving the program and raising its initial funding. This program was later reamed WISHH.

Sept.—Monsanto's patent on glyphosate expires. Glyphosate is the active ingredient in *Roundup*, the world's best-selling herbicide.

Dec.—Sanitarium Foods of Australia acquires the 47% of SoyaWorld owned by Sunrise Soya Foods (Vancouver, BC, Canada).

Trends: 1. This year, the momentum created by the FDA health claim in Oct. 1999 has propelled the soyfoods industry to new heights. Existing companies are growing rapidly, and many new companies (including some of America's biggest food companies) are entering the market with new products.

2. This year, for the first time, soymilk has become a mainstream American beverage. As of May, White Wave Silk soymilk is sold in 24,000 supermarkets nationwide. Edamamé (green vegetable soybeans) have gone mainstream in California, and are rapidly becoming popular on both coasts of the USA.

3. In the United States and Europe, the tide seems to be flowing increasingly against genetic engineering of foods and food plants. More and more companies in the natural foods industry are labeling their products as "non-GMO" or "GMO-free" or "No GMOs." Monsanto has stopped its efforts to develop genetically engineered soybeans for food use and focused its attention instead on livestock feeds. It now seems likely the genetic engineering of plants has a future, but not in the area of foods—at least in developed countries.

4. Interest in "food-grade soybeans" continues to grow in the USA and has increased substantially this year. Canada began focusing on identity-preserved food-grade soybeans 10-15 years before the USA. U.S. interest began to grow in about 1995 with the introduction of genetically engineered soybeans and with the accelerating interest in food uses of soybeans.

5. While pro-soy articles (mostly about health benefits) continue to increase, so do anti-soy articles and Internet sites. The loudest anti-soy voices are those of Sally Fallon and Mary Enig of the USA (they believe traditional fermented soyfoods—such as miso, shoyu, natto, and tempeh—are good, traditional non-fermented soyfoods—such

as tofu, soymilk, and edamamé—are not very good, and modern soy protein products—such as soy protein isolates, concentrates, and textured soy flour—are the worst of all, being highly processed with chemicals such as hexane solvent), Richard and Valerie James of New Zealand, and Lon White of Hawaii. Some of the concerns they raise are legitimate and deserve further research, but the majority (we believe) are not. Nevertheless, many of the health claims made for soy in popular articles are exaggerated or somewhat sensational, and not firmly supported by scientific evidence.

6. As we are about to enter a new century and a new millennium on 1 Jan. 2001, soyfoods appear to have a bright future, worldwide. This past year has seen more activity and interest in, and media coverage of, soyfoods than at any time in the history of the United States.

4149. Fisher, Kate. 2000. Using the old bean: Commodity soybeans aren't left out of soyfoods surge. *Soybean Digest*. Dec. p. 12, 16.

• **Summary:** Walt Fehr says that in the soyfood market there are two types of beans: Specialty beans (premium market) and commodity beans (general market). Low-cost commodity beans are used for such things as soy oil plus some soy protein concentrates, soy isolates and soy flour.

Until recently, Japanese food processors bought large amounts of what they call IOM (Indiana, Ohio, Michigan) soybeans. These are commodity beans that the Japanese believe have higher protein content and are better for food uses than commodity beans grown in other parts of the USA. But biotech issues have caused IOM soybeans to lose considerable market share to identity-preserved soybeans—most of which are non-GMO.

The premium food-grade market consists of many soybeans: (1) Small seeded types for natto and soy sprouts. (2) Large-seeded soybeans for edamame, miso, and tofu. (3) Other soybeans with special traits for food use, such as high protein, lipoxygenase free, low saturated fat, low linoleic acid, etc.

Note: This article is bizarre. The words “organic” and “non-GMO” are barely mentioned.

4150. Huang, H.T. 2000. Science and civilisation in China. Vol. 6, Biology and biological technology. Part V: Fermentations and food science. Joseph Needham series. Cambridge, England: Cambridge University Press. xxviii + 741 p. Illust. Index. 26 cm. [200+ soy ref]

• **Summary:** This is the most important book on soyfoods in China ever written, and it is especially good on their origins and early history in China. It is also one of the best books seen on food in Chinese culture and history.

The section titled “Soybean processing and fermentation” (p. 292-378) comprises 14.3% of the book's text, and has the following contents: Introduction. Soybean

sprouts. Soybean curd and related products: The origin of bean curd, transmission of *tou fu* to Japan, products associated with *tou fu* (soymilk {*tou fu chiang*}, tofu curds {*tou fu hua* or *tou fu nao*}, pressed tofu sheets {*ch'ien chang* or *pai yeh*}, yuba {*tou fu i* or *tou fu p'i*}, deep-fried tofu {*yu tou fu* or *tou fu p'ao*}, pressed tofu {*tou fu kan*}, five-spice pressed tofu {*wu hsiang tou fu kan*}, plain dried tofu [pressed tofu] {*pai tou fu gan*}, smoked tofu {*hsün tou fu*}, dried tofu soaked in brine and fermented {*ch'ou tou fu kan*}, frozen tofu {*tung tou fu*}, making fermented tofu {*fu ju*}, comparison of *tou fu* and cheese, addendum. Fermented soybeans, soy paste, and soy sauce: *Ferments* for food processing, fermented soybeans—*shih*, fermented soy paste—*chiang*, fermented soy sauce—*chiang yu*, soy fermentations in China and Japan.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term “hsün tou fu” [pinyin: *xun doufu*] to refer to smoked tofu. Soy is also discussed in other parts of the book. Address: Alexandria, Virginia.

4151. Larson, Stephanie. 2000. The soyfoods boom: What's driving the explosion? First in a series. *Soybean Digest*. Dec. p. 10-11.

• **Summary:** Mark Messina says the whole market is driven by consumer demand because of health effects. Sales of soyfoods and soy protein products was \$2.1 billion in 1999. Of that total, soymilk sales accounted for \$300 million, up 38% from 1998. A graph shows soymilk sales (in million dollars) from 1992 to 1999, with projection to 2002. These sales rose from \$100 million in 1993 to \$300 million in 1999, projected to reach \$500 million in 2001.

The United Soybean Board calculated that last year Americans consumed 37 million bushels of soybeans via soyfoods. A color photo shows many commercial soyfood products with colorful labels: Bergin Nut Company Soynuts (no salt), Fantastic Foods Tofu Scrambler, MCOA Brown Rice Miso, Spectrum Soy Oil, Health Trip Soynut Butter, Midwest Harvest Textured Soy Protein, Low-Fat Soy Flour, and Firm Tofu, Country Choice Soy Cocoa, Eden Organic Black Soy Beans, and Whole Foods Soy Ginger Sauce.

4152. **Product Name:** Organic Brown Rice Miso, or Organic Barley Miso (Aged 2 Years).

Manufacturer's Name: Tradition Miso.

Manufacturer's Address: R.R. #4-2090, Claremont, ON L1Y 1A1, Canada. Phone: 905-649-2513.

Date of Introduction: 2000. December.

Ingredients: Organic soybeans, organic rice or barley, unrefined sundried sea salt [from Brittany, France], deep well water, culture (*Aspergillus oryzae*).

Wt/Vol., Packaging, Price: 450 gm glass jar. Retail for Canadian \$10/jar (2001/04, Ontario, Canada).

How Stored: Refrigerated.

New Product–Documentation: Talk with Jerry Lewycky (whose last name is pronounced luh-WIK-ee), founder and owner. 2001. April 20. Jerry and his wife and co-worker, Suzanne Cardinal, first began selling their two long-term misos in Dec. 2000. Their company name is Tradition Miso and they sell their miso in glass jars. They now have two distributors. Jerry and his wife make two vats of miso a year. Each vat holds 7,000 lb. of miso. They have no plans for a short-term miso. His miso should be refrigerated. The jar has a special continuous-thread lid that breathes to enable gas to escape. He sells his miso only in Eastern Canada at about \$10/lb. His biggest competition is Cold Mountain Miso (from southern California) which retails in Ontario for Canadian \$7-8 for a 400 gm plastic tub. South River Miso is more expensive than his at Canadian \$14-15/lb glass jar, but South River has more varieties of miso, so Jerry's two varieties have displaced only some of South River's. The salt he uses is gray, unrefined, and wet. It comes from Brittany, France. Other misos use partially refined salt.

Labels for Organic Brown Rice Miso and for Organic Barley Miso sent by Jerry Lewycky. 2001. April 27. Brown Rice: Black and reddish brown on yellow. Barley: Black and reddish brown on silver. On each, below the large word "Miso" is printed "aged two years." The logo looks like a monk sitting in meditation.

New Labels brought to Soyinfo Center by Jerry, Suzanne Cardinal, and their two kids, Katrina and Maxim. 2007. Jan. 2. (1) Organic Barley Miso: Black and reddish brown on gray. Aged 3 years. Product with this label first sold April 2006. (2) Organic Brown Rice Miso: Black and reddish brown on light yellow. Product with this label first sold Sept. 2006. Each is certified organic by OCPRO Canada. The logo is still the black illustration of the monk.

4153. **Product Name:** [Tempeh, Amazake, Miso].

Foreign Name: Tempeh, Amazake, Miso.

Manufacturer's Name: Rui Rato Tempeh.

Manufacturer's Address: Bairro da Coopalme, Lote 291, 2727 Algueirao, Portugal. Phone: +351 21 920 2798.

Date of Introduction: 2000.

New Product–Documentation: Talk with Roy Kamiki of Nutrideas, Portugal. 2001. June 10. Ricardo currently makes tempeh, amazake, and miso, but does not have a company name. He has only one customer. He sells tempeh frozen to a big organic co-op–BioCoop–An organic farming Product Co-op is Lisbon.

"Mr. Rui Rato is a fan of yours and a great appreciator of your books. He has nearly all your publications, but does not depend on soyfoods production for his source of income. He has another steady job and makes soyfoods in his spare time."

4154. Ageru miso [Presenting miso]. 2000. Tokyo: Shibata Shoten. 175 p. 28 cm. Series: Ryori Hakka, no. 48; Shibata Shoten Mukku. [Jap]*

• **Summary:** This is a cooking magazine's special issue. Address: Japan.

4155. Evans, K. Lee; Rankin, Chris. 2000. Giant book of tofu cooking. New York, NY: Sterling Publishing Co., Inc. 256 p. Illust. (color photos). Index. 28 cm.

• **Summary:** A beautiful vegetarian cookbook, with many color photos on glossy paper, excellent use of standard terminology (except for "freeze-dried tofu"), and 350 healthful, delicious recipes. Contents: Introduction. Tofu basics and techniques: Getting started (buying tofu {soft tofu, form tofu, extra-firm tofu, silken tofu, marinated tofu, smoked tofu, freeze-dried tofu, fermented tofu}, storing tofu, preparing tofu for your recipes {draining and blotting, pressing, freezing and thawing, blending, cubing and dicing, crumbling, shredding / grating, marinating, boiling slightly sour tofu, frying, deep-frying}), other soy products (edamame, meat alternatives, miso, soy cheese, soy flour, soy ice cream, soy milk, soy sauce, soy sprouts, soy "yogurt," soynut butter, soynuts, tempeh, textured soy protein, whole dry soybeans), tofu and a healthier you (introduction, protein, heart disease, cancer, menopause, osteoporosis, our planet), simple ingredient substitutions (eggs, milk, cheese, butter, salt, sugar {honey, molasses, maple syrup, rice syrup, barley malt syrup}). Ingredient glossary: Incl. arrowroot, balsamic vinegar, bamboo shoots, barley malt syrup, fermented Chinese black beans, filé powder, galangal, garam masala, garbanzo beans, Hoisin sauce, liquid smoke, mirin, miso, nutritional yeast, phylo or filo, pickled ginger, quinoa, rice noodles, rice papers, rice syrup, sake, shoyu, tahini, toasted sesame oil, vegetarian gelatin, vegetarian Worcestershire sauce ("Just like the original, it is made of soy, vinegar, and spices, but without the anchovies"), wakame, wheat germ. Breakfast. Appetizers. Soups. Salads. Lunch and dinner. Dressings, sauces, and spreads. Desserts. Metric conversion chart. Acknowledgments.

4156. Fruehschuetz, Leo. 2000. Soja [Soya]. Schaaflheim, Germany: Bio Verlag. 144 p. With recipes by Judith Braun. Illust. Index. 15 cm. [12 ref. Ger]

• **Summary:** Contents: Forward: Portrait of the soybean: From China to the entire world, the composition of whole beans, does soya help with cancer?, protein and oil for the world economy. The original soybean and what followed: Introduction (there is not much to improve on in the soybean), the "labor-bean" (Monsanto and Roundup-Ready soybeans), the results for farmers, for the environment, for health, politics without results, for trade and the end-users, the forgotten results, soya in animal feeds. Organically grown soya–without genetic engineering and pesticides.

Versatile: Soya in the wholefoods kitchen: Soybeans: whole, ground, and sprouted, the fluid bean–milk, yogurt (fermented), and oil, tofu–the meat without bones, tempeh–the noble cultured food from Indonesia, soy sauce–aged in wooden vats, miso–soya for soups, soyameat–saved from the wolf. Recipes: Soymilk, soy flour and flakes, tofu, tempeh, soy meat and granules, miso, soy sprouts. Address: News journalist for natural foods and long-lived people, co-worker with Schrot&Korn.

4157. Fukuyama, Hideko. 2000. *Okazu tokidoki-zakana, goma miso su* [Side dishes from time to time with drinks, sesame, miso and vinegar]. Tokyo: Bunka Shuppankyoku. 95 p. Illust. (mainly color). 23 cm. [Jap]*
Address: Japan.

4158. Kouwenhoven, Arlette; Forrer, Matthi. 2000. *Siebold and Japan: His life and work*. Leiden, Netherlands: Hotei Publishing. 111 p. Illust. (Incl. color). No index. 27 cm. [40* ref. Eng]

• **Summary:** An excellent biography of Philipp Franz von Siebold (1796-1866), a German physician and naturalist who was one of the first Europeans to live in Japan. In 1823 Siebold wrote a letter to the Governor of Batavia requesting professional help at Deshima. In 1825 two men were finally dispatched: (1) Dr. Heinrich Bürger (1804-1858), a scholar, who worked as a pharmacist in Batavia, and who was to assist with scientific research, chemistry and mineralogy; and (2) Carel Hubert von Villeneuve, an auditor and artist.

On 15 Feb. 1826, Siebold departed from Deshima, accompanying the court journey to Edo (today's Tokyo) of *Opperhoofd* Johan Willem de Sturler; Siebold was joined by Dr. Bürger in the role of secretary, although Bürger's true purpose was to assist Siebold in his scientific research. These were the only three Dutchmen allowed to make the long journey. Siebold and Bürger were well prepared for the trip; they had gathered all sorts of equipment to take with them, including barometers, thermometers, hygrometers, sextants, chronometers, microscopes, crockery, furniture, silver, fine glassware, and even a piano. Some of these items were intended as gifts. En route, the inquisitive Siebold observed and wrote about practically everything. They arrived in Edo on 10 April 1826, about 2 months after leaving Nagasaki, a trip of about 1,400 km. On 1 May 1826 the three Dutchmen had an audience with the shogun. The delegation finally left Edo on 18 May 1826 and arrived at Deshima on July 7. Note: It was almost certainly on this trip that Siebold and Bürger observed soybeans and recorded their observations in the trip's log.

A 3-page chronology of Siebold (p. 100-02) includes: 1796 Feb. 17. Philipp Franz von Siebold born in Würzburg [in today's Germany]. 1815–Starts study of medicine at the University of Würzburg; subjects include chemistry, botany, and physics. 1820–Completes his studies in medicine,

surgery, and anatomy, obtains his doctorate, and establishes himself as a physician in Heidingsfeld. 1822 June 21–Appointed Surgeon-Major in the Dutch East-Indies Army. 1823 Feb. 13–Arrives in Batavia. On April 18 he is appointed to the post of physician at the trading post on Deshima, near Nagasaki, Japan. He also receives instructions to conduct research into Japanese natural history, laws, and politics.

1823 Aug. 12. Arrives on Deshima and starts teaching almost immediately. That same year he “married” Kusumoto Sonogi, also known as Otaki (1807-1865); she is 11-12 years younger than he. 1824. Starts a botanical garden on Deshima at the request of the government in Batavia. Opens his school in Narutaki, just outside Nagasaki. 1825. Dr. Heinrich Bürger arrives from Batavia to help Siebold with his geological research, accompanied by C.H. Villeneuve, the illustrator.

1826 Feb. 15 to July 7. He accompanies *Opperhoofd* De Sturler on the court journey to Edo. Bürger, Keiga and several of his Japanese students join the delegation. 1827. The government in Batavia requests his return there, with the possibility that he may have to return to Holland. Also in 1827 Von Siebold's daughter, Oine (1827-1903) is born.

1828 Sept. 18. A severe storm causes the ship, with 89 crates containing Siebold's collection, to run aground on the coast at Nagasaki. The discovery of forbidden objects leads to the detainment of Siebold, Takahashi, and many others. Siebold is placed under house arrest.

1829 Oct. 22. After being subjected to lengthy cross-examination, Siebold is banished from Japan. On Dec. 30 he leaves Japan.

1830 Jan. 18. Arrives in Batavia, then travels to Holland where he arrives on July 7. In Antwerp he meets Dr. Hoffmann, who is later to become the first professor at Leiden University.

Note: 1830. Siebold's first publication on Japanese plants appears (largely in Latin, but with many Japanese characters) in *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen* 12:1-74. See p. 54-57, plus first table at end. He mentions two species of soybeans: *Sooja Japonica*, the cultivated soybean, and *Sooja nomame*, the wild soybean; he says he has seen a living plant specimen of the latter. Soybeans are used to make shoyu, miso, and tofu. A note at the end of table I states that he drafted it at Deshima in November 1827.

1831 April 20. King Willem I agrees to buy Siebold's ethnographic collection and to pay an advance of 12,000 guilders. 1832. Hires a house at 19 Rapenburg in Leiden, Netherlands, where he organises his collection and opens it to the public. He maintains contact with Bürger, who still lives on Deshima. Travels to Germany in the autumn. 1833. Returns to The Netherlands in the summer. Presents the first copy of his opus *Nippon* to the Society of Dutch Letters on 26 Nov.

1835. Travels in Germany and Austria. Meets Zuccarini and others. 1836 Aug. 22. Buys the house at 19 Rapenburg. 1839. From now on he spends winters in Germany, where he meets his future wife, Helene von Gagern.

1840. Buys a piece of land at Leiderdorp, where he builds the villa, 'Nippon' and starts a nursery. 1842. Establishes the plant and seed company, Siebold & Co. with Blume and Rodbard. 1845 July 10. He marries the Lady Helene von Gagern (1820-1877) in Berlin; she is 24 years younger than he. Soon four children are born. 1859. Returns to Japan. Arrives in Nagasaki on Aug. 4. 1861 Oct. He is banished from Edo, and Japan itself. 1866 Oct. 18. Von Siebold dies in Munich, Germany; he is buried in the Alten Südlichen graveyard on the Thalkirchner Strasse.

4159. Liberty, Anne. 2000. Super soy! Protect yourself against bone loss, heart disease, cancer, menopause, high cholesterol. Boca Raton, Florida: American Media Mini Mags Inc. 66 p. 14 cm. [1 ref]

• **Summary:** This mini-book (only 5½ inches high) was sold (for \$1.19) next to the tabloid magazines at the checkout stand at Longs Drug Store in Lafayette, California. On the little cover is a color photo of a grey-haired and healthy-looking lady holding a glass of soymilk. Contents: All about soy: Inside the soybean (phytoestrogen, isoflavones, genistein, protease inhibitors), eight of soy's top health benefits (antioxidant protection from free radicals, breast cancer protection, cholesterol control, colon cancer protection, strong bones, hot flash reduction, a strong immune system, and kidney disease prevention), different soy products (green soybeans, hydrolyzed vegetable protein {HVP}, infant formula {soy-based}, lecithin, meat alternatives, miso, non-dairy frozen soy ("soy ice cream"), soy cheese, soy flour, soy grits, soy protein (incl. TSP = textured soy protein = textured soy flour), soy sauce, soy yogurt, whole soybeans, soy nut butter, soy nuts, soy oil, soy sprouts, tempeh, tofu, whipped soy-based topping, yuba), nutritional value, how much do you need? Bone loss. Heart disease and cancer: Heart disease, cancer (genistein, isoflavones, phenolic acids, phytates, protease inhibitors). Menopause. Cholesterol. Cooking with soy products: Soy flour, miso, soy milk, soy protein, tofu, tempeh. Delicious soy recipes.

The author frequently refers to Earl Mindell, PhD, but has no real scientific references. Many of the recipes were provided by the United Soybean Board. On the last page are two sources of more information and recipes: The United Soybean Board website www.talksoy.com and the Indiana Soybean Board website www.soyfoods.com.

4160. McMann, Mary Carol. 2000. Soy protein: What you need to know. New York, NY: Penguin Putnam Inc. (Avery). 60 p. Index. 22 cm. Avery's Nutrition Discovery Series. [74 ref]

• **Summary:** Contents: Introduction. 1. What makes soy so special? 2. Cardiovascular disease. 3. Cancer. 4. Osteoporosis. 5. Menopause and menopausal symptoms. 6. Incorporating soy (protein) into your diet. Conclusion. Glossary. References. About the author.

Note: This book is copyrighted by Protein Technologies International. Address: MPH, RD, LD, Houston, Texas.

4161. Miso Kenkozukuri Iinkai. 2000. What's miso. Tokyo: Miso Health Building Committee. 6 panels. 1 folded sheet. Illust. (color). 21 x 10 cm. [Eng]*
Address: Japan.

4162. Wilkinson, Endymion Porter. comp. 2000. Chinese history: A manual. Revised and enlarged. Cambridge, Massachusetts: Harvard University Press / Harvard Yenching Institute. xxiv + 1181 p. Index. 23 cm. Harvard Yenching Institute Monograph Series, 52. 1st ed. 1998. [500+* ref]

• **Summary:** A remarkable and extremely valuable book. Partial contents: Introduction: Recent historiographical trends, center and periphery, periodization, the dynasties. I: Basics. 1. Language. 2. Dictionaries. 3. People. 4. Geography. 5. Chronology. 6. Telling the time. 7. Statistics: Numbers and order of magnitude, population, weights and measures, money, prices. 8. Guides and encyclopedias. 9. Locating books. 10. Locating secondary sources. 11. Libraries.

II: Pre-Qin sources. 12. Archaeology. 13. Pre-Qin archaeology. 14. Prehistoric signs and symbols. 15. Oracle bone inscriptions. 16. The characters: Evolution and structure. 17. Epigraphy. 18. From bamboo strips to printed books. 19. Excavated and transmitted texts.

III: Historical genres. 20. Primary and secondary sources. 21. Annals. 22. Standard histories. 23. Topically arranged histories. 24. Miscellaneous histories. 25. Government institutions. 26. Official communications. 27. Law. 28. War.

IV: Other primary sources... 35. Agriculture, food and the environment. 36. Medicine. 37. Technology and science... 42. Foreign accounts of China.

V: Primary sources by period.

In the chapter titled "Agriculture, food and the environment," section 35.2.2 on "Pre-Qin foodstuffs and cooking" (the Qin dynasty, 221-206 B.C., came just before the Han) states that the staple dishes, cooked mainly by boiling or steaming, were typically "accompanied by a savory paste (*jiang*, *misô* in Japanese) made from hydrolyzed (fermented) meat, fish, crustaceans, or, most important of all, soybeans" (Footnote 8). "The soybean is indigenous to northeast China. Its cultivation began in the Zhou period. It was a major source of protein, especially for peasants and laborers. Starting in the Yangzi valley, it was brined and hydrolyzed into the characteristic Chinese

flavoring, soy sauce (*jiangyou*) (9). By the Han, a new process had been discovered; if the production was interrupted half way and the beans dried, they became blackened and delicious. Along with savory pastes (*jiang*) and pickles (*zu*), these fermented soybeans (*chi*) were immensely popular (10)."

Footnote 8: See *Zhongguo shiqian yinshishi* (A history of Chinese prehistoric food and drink), Wang Renxiang, ed. in chief, Qingdao, 1997.

Footnote 9 (p. 638): "The origin of 'soya' in European and other languages is from either *xiyao* [soy nugget sauce] or *shōyu* (the Cantonese and Japanese for *jiangyou* [soy sauce] respectively). The early generic word was *shu* (*Glycine max*), later *dou*, and later still *dadou* to distinguish it from post-Han imported pulses."

Footnote 10: "*Chi* used to be pronounced *shi*. Other names for *chi* were *douchi*, *daku*, and *nadou* (*nattō* in Japanese)."

Section 35.2.3 on "New foodstuffs and cooking" covers the period from the beginning of the Han dynasty in 202 B.C. Noodles (*bing*) were introduced. Soybeans (in the forms of *jiang* and soy nuggets {*chi*}) remained an important source of protein. Alfalfa (*musu* or *mushu*), peas (*hudou*, modern *wandou*), and sesame (*huma*, modern *zhima* or *mazi*) are said to have been introduced by Zhang Qian, the emissary from the Former / Western Han dynasty. By the Tang "bitter fermented blackened soy beans" (*huchi*) had been introduced; *hu* means "barbarian." Tofu (*doufu*) is first mentioned in the early Song dynasty. It was imported into Japan and first appeared there in a document dated 1183. "It was used as a substitute for meat and fish in Buddhist vegetarian cooking." New World crops which made their way into China from the 16th century include peanuts (*fandou*, modern *huasheng*), chili, corn, sweet potatoes, and tomato (p. 643).

Note: The author was educated in England. Address: Head of Delegation and Ambassador to China for the European Commission.

4163. Yūmeiten no ryōrinin go oshieru miso o tanoshimu ryōri hachijippin [Chefs from famous restaurants teach 80 recipes for enjoying miso]. 2000. Tokyo: Seibido Shuppan. 129 p. 29 cm. Series: Seibido Mook. [Jap]*
Address: Japan.

4164. Hagler, Louise. 2001. Miso cookery. Summertown, Tennessee: The Book Publishing Co. 96 p. Illust. Index. 23 cm.

• **Summary:** Contains 70 recipes (each with a nutritional analysis) that use miso as an ingredient, and four full-page color photographs. Contents: Introduction. It's alive!!!! (visit to American Miso Co. in North Carolina). Soups. Spreads. Salads and dressings. Sauces and gravies. Vegetables. Main dishes. Side dishes. Sweet things.

Many recipes call for the use of tofu as an ingredient, and some call for the use of edamame, gluten, soymilk, soy yogurt, tempeh,

On the rear cover is a color photo of Louise Hagler; her vegetarian cookbooks have sold over 750,000 (or 742,000) copies worldwide. Address: Summertown, Tennessee.

4165. *Nutrition Business Journal* (San Diego, California). 2001. Edward & Sons resists would-be acquirors: Service, quality and established supplier relationships are the basis of business for niche-oriented organic food company. 6(2):16. Feb.

• **Summary:** Located in Carpinteria, California, Edward & Sons is a 24-year old firm with annual sales of \$8-\$10 million, growing at nearly 20% a year. They sell 60 items including misos, sauces, rice crackers, and organic sprinkles. All products are vegetarian and two-thirds of its sales are from organic products.

The company's original product, Miso Cup, a dry instant soup, was developed by founder and president Joel Dee in response to a dearth of instant meals for vegetarians. It remains the company's flagship product. The second product, Brown Rice Snaps, from Japan, were the first wheat-free crackers on the market. The company also introduced the first flavored soy sauces under the Premier Japan brand; they now have several other sauce brands, including Wizard Organic, Troy's, and Rainforest Organic.

4166. *River Currents: News from South River Miso Company* (Conway, Massachusetts). 2001. On the Web: www.southrivermiso.com. Spring. p. 1. March.

• **Summary:** The company's website "has been up and running Since October 2000, averaging about 15 visits per day for the past month. In our latest update, photos of the miso making process have been added. Although direct ordering is possible from our website, most of our customers still prefer to order by mail or by phone."

4167. Stephens, Roger; Stephens, Jane Ade. ed. and comp. 2001. Soyfoods guide 2001: Helpful tips and information for using soyfoods. Indianapolis, Indiana: Stevens & Associates, Inc. Distributed by the Soy Protein Partners. 24 p. Illust. No index. 28 cm. [23 ref]

• **Summary:** This guide is available only on a limited basis to dietitians and health professionals. Contents: Foreword. Keep your heart healthy: Super soy protein smoothie. Beans, beans, good for the heart: The more you eat, the better your chances of lowering your blood cholesterol levels. Cholesterol: What's in a claim. Sample soy meal planner (4 meals a day for 5 days, to get 25+ grams/day of soy protein). Dietary guidelines for Americans. Composition of soyfoods (table). The healthy bean: Isoflavones, heart disease, menopause and osteoporosis, allergies, diabetes and kidney disease, fat. Isoflavone

content of soyfoods (table). The state of soy research. Protein content of soyfoods (table). Soy resources: Web sites, books. Soyfood substitution chart. Descriptions of soyfoods: Traditional soyfoods, soy-based products, soy ingredients. Recipes: Meat alternatives. Textured soy protein. Soy flour. Whole soybeans. Soymilk. Tofu. Soy snacks and smoothies. Soy—Good for your heart.

The Foreword (p. 2) states: “The *2001 Soyfoods Guide* is distributed by the Soy Protein Partners. Partners include state soybean boards from: Alabama, Arkansas, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, North Carolina, South Dakota, Tennessee, Texas, Virginia, and Wisconsin. Industry partners include: American Soybean Association, Archer Daniels Midland Company, Central Soya Co., Minnesota Soyfoods Association, Protein Technologies International, Soy Protein Council, Soyfoods Association of North America, Soyfoods Council and the United Soybean Board.” Address: 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

4168. Andoh, Elizabeth. 2001. Sampling seasonal delicacies, at reasonable prices, in Osaka. *New York Times*. April 1. p. TR6, TR18 (Sunday).

• **Summary:** Contains reviews of restaurants in Osaka. Yoshino Sushi offers “plump vegetable rolls stuffed with broth- and soy-simmered koya-dofu (dried tofu).

Shiru Yoshi offers “one tofu kaiseki; each menu is \$100 a person. Throughout Japan tofu is not synonymous with vegetarian cuisine. At Shiru Yoshi, it means two of the many courses that feature silky bean curd [kinugoshi; silken tofu]: in the winter a hot pot of tofu and mushrooms with a soy-based dip... and agedashi, a deep-fried block of tofu...” A “succulent chunk of miso-marinated fish was also served” to those who ordered the kobachi kaiseki dinner (literally “feast of small dishes”). Address: Tokyo, Japan.

4169. Drosihn, Bernd. 2001. Miso manufacturers in Europe. Changes at Viana (Interview). *SoyaScan Notes*. April 30. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Hiroshi Kozaki and Karl Selgmann who once founded and ran a miso company named Kanta Kozaki have split up. Hiroshi left the company and tries to do some importing and run a wholesale company and Japanese restaurants. Karl still makes miso in a small way, but he never returns phone calls. His company named has changed to Noka Sojamanufaktur GmbH. Bernd tries to buy miso from Noka but they are an unreliable source. He also used to buy from Paul Chapman in England, but he stopped 6-12 months ago. Paul had business troubles, so now he is planning to go to Thailand and to make miso there. Danival in Andiran, France, is now a good source of miso. Bernd is not sure whether or not Sojvita in Austria still makes miso.

They are a macrobiotic company. Günter Ebner, who knows a lot about the soy market in central Europe, would certainly know. Yakso has been sold numerous times. Bernd does not know the present owner, but he thinks they no longer makes miso or any other foods; they are now just a brand name.

Bernd is now moving his business to a new location, about 45 km away near Wiesbaum. The move will be completed early next week. The arrival of mad-cow disease in Germany has been a big help to Bernd’s company, Viana. The increased demand forced him to construct a new building with greater capacity during the last two years. He is now making both tofu and meat alternatives in the new building. This weekend snack production will start. His fastest growing product line is meat alternatives, followed by tofu and smoked tofu. All over, the demand for tofu is much bigger than the supply—thanks to mad-cow disease. Bernd has doubled his tofu-making capacity and purchased new tofu-making equipment. Address: Founder and president, Viana Naturkost GmbH, Cologne, Germany. Phone: (02233) 41323 or 221-121175.

4170. *Fine Cooking (Newton, Connecticut)*. 2001. The ancient art of making miso, practiced in New England: Artisan foods. No. 44. April/May. Back cover.

• **Summary:** About South River Miso Co. The text briefly tells the company’s history and how they make miso in the traditional Japanese way. Four excellent color photos show: (1) Christian Elwell stirring steamed grains in a large wooden crib. (2) Elwell scraping finished koji from wooden trays. (3) Elwell blending the koji with cooked soybeans by treading them underfoot in a large, rectangular metal container. He says its like a message for the beans. While treading, he wears two pairs of organic cotton socks and plastic foot coverings. (4) Six varieties of South River Miso in glass jars stacked to form a triangle: Azuki Bean, Sweet-Tasting Brown Rice, Three-Year Barley, Special Edition, Chick Pea, and Sweet White. At the top of each colorful label are the words “Since 1979.”

4171. Schneider, Sally. 2001. Soy meets girl: Our columnist proclaims her love for miso... *Food & Wine*. April. p. 60, 62, 64-65.

• **Summary:** A sidebar titled American miso (p. 62), discusses South River Miso Co., Great Eastern Sun, and the types of miso each makes. Gives the phone number and website for each. Contains three recipes that use miso. A color photos show: (1) Two recipes. (2) Sally Schneider. (3) Bowls of red miso and sweet white miso.

4172. Amano, Shig. 2001. New developments with Amano Foods Ltd. (Interview). *SoyaScan Notes*. May 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Amano Foods outgrew its former plant in Burnaby, B.C., so it built a larger plant in nearby Richmond, BC. In about Sept. 1998 the company moved into its new plant. Business is better than ever. Graham Amano, Shig's son, is in charge of the company's miso operations. The miso is kosher, organic, and uses no genetically engineered ingredients. Address: Amano Foods Ltd., 5520 No. 6 Road., Richmond, BC V6V 1Z1 Canada. Phone: 604-303-9977.

4173. Shurtleff, William; Aoyagi, Akiko. 2001. *The book of tofu*. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 336 p. May. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [321 ref]

• **Summary:** This edition contains an updated "Appendix B—Directory of Tofu Makers" (p. 313-316, updated to 22 Feb. 2001). The copyright page and inside rear cover have also been updated. The preface has been expanded. Numerous other small changes have been made throughout the book. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

4174. Tofu Shop Specialty Foods, Inc. 2001. Wholesale price list. Arcata, California. 1 p. June 15. Front and back. 28 cm.

• **Summary:** Contents: Fresh tofu, water-pac tubs (firm nigari, regular calcium [sulfate], soft calcium). Fresh bulk tofu—institutional (firm nigari, regular calcium). Baked tofu—retail or institutional (marinated cutlets, sausage patties, Mexi patties, vegie patties). Smoked tofu—Smoked Stiks (original, BBQ, spicy). Fresh soymilk (natural, chocolate, ginger, vanilla). Tofu salad and spreads (eggless egg, basic everyday spread, garlic 'n dill everyday spread, sweet pickled beet dip, hot habañero carrot dip, smoked tofu spread).

Accompanying this price list are the following new and colorful self-adhesive labels: Organic Tofu (Regular, Firm, or Soft). Soymilk (Vanilla or Chocolate). Tofu Shop: Fine tofu products. Crafted in small batches from whole, organic, GMO-free soybeans. Also the following numbered vegetarian "Favorite seasonal tofu recipes": 1. Wild mushroom and asparagus frittata. 2. Tofu egg foo young. 3. Tofu 'ricotta' salad. 4. Creamy miso vinaigrette (with tofu). 5. Hunan style tofu. 6. Tofu turkey with herbed bread stuffing. 7. Almond orange cake (one layer). 8. Tofu apple sausage. Address: 65 Frank Martin Court, Arcata, California 95521. Phone: 707-822-7401.

4175. Miso Soups (by Aveline Kushi) (Website printout). 2001. <http://www.orientalfood.com/culture/literature/misosoups.shtml>. 3 p. Printed July 31.

• **Summary:** Describes miso and how to make delicious miso soups.

4176. Dillman, Erica. 2001. *The little soy book*. New York, NY: Time Warner. 190 p. Index. 15 x 16 cm. [58 ref]

• **Summary:** Contents: Introduction. 1. It's soy time. 2. Why eat soy? Health benefits of soy? Soy foods: Soy milk, soybean oil, soy sauce, soy meat alternatives, tofu, tempeh, miso, whole soybeans, edamame, soy nuts, soy nut butter, soy sprouts, soy ice cream, soy yogurt, soy cheese, soy flour and grits, textured soy protein (TSP), soy protein concentrate, soy protein isolate, hydrolyzed vegetable protein, infant formula, lecithin, natto, yuba, soy fiber, Cooking with soy (recipes). Notes [references]. Resources [Directory]. Glossary. Address: Seattle, Washington.

4177. **Product Name:** Trader Joe's Miso Mesquite Sauce. **Manufacturer's Name:** Trader Joe's (Marketer-Distributor).

Manufacturer's Address: Monrovia, CA 91016. Phone: 626-599-3700.

Date of Introduction: 2001. July.

Ingredients: Water, catsup (tomato paste, vinegar, high fructose corn syrup, corn syrup, salt, onion powder, spice, natural flavor), sugar, soy sauce (water, wheat, soybeans, salt), miso (fermented soybeans, rice, salt), onion powder, sesame seed oil, modified corn starch, salt, garlic powder, spices, natural hickory smoke flavor, xanthan gum.

Wt/Vol., Packaging, Price: 12 oz (340 gm) glass bottle retails for \$1.99 (2001/07, Lafayette, California).

How Stored: Shelf stable; refrigerate after opening.

New Product—Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2001. July 13. Pink, apricot, black, white and green. Color photo shows a lady in traditional Japan holding a large paper umbrella, with several more open on the ground behind her. SKU #32666.

4178. Gai, Junyi; Guo, Wentao. 2001. History of *maodou* production in China. In: T. Lumpkin, ed. 2001. Second International Vegetable Soybean Conference. Pullman, Washington: Washington State University. 202 p. See p. 41-47. [5 ref]

• **Summary:** Two books review the ancient Chinese literature on the history of soybean production: (1) *Dou Lei (Legumes)*, by Li Chang-Nian, published in 1958; (2) *History of Soybean Cultivation in China*, by Guo Wen-Tao, published in 1993. Both authors are from the Chinese Agricultural Heritage Institute (Nanjing Agricultural University, Nanjing, Jiangsu 210095, China).

The author then cites ten early mentions of soybeans in Chinese literature: The first three are from three different sections of the *Shi Jing [Shijing]* (6th century BC); the others are from the *Zhou Shu* (5th to 3rd century BC), *Zhou Li* (3rd century BC), *Meng Zi* (3rd century BC), *Mo Zi* (5th to 4th century BC), *Xun Zi* (3rd century BC), *Li Ji* (1st century BC), and *Zhan Guo Ce* (1st century BC).

Noting that the *Shi Jing* [*Shijing*] contains the oldest Chinese literature, he adds that it “is a collection of poems circulated among the people from the Western Zhou Dynasty to the Spring and Autumn Period. Some of them might be works from the Shang Dynasty [ca 1600-1045 BC]. The book was edited and finished in the middle Spring and Autumn Period (6th century BC). Mao Hêng (Western Han Dynasty, 2nd century BC), Zheng Xuan (Eastern Han Dynasty, 2nd century AD), Lu De-Ming (Tang Dynasty, early 7th century AD), and Kong Ying-Da (Tang Dynasty, 642 AD)” each wrote commentaries on the *Shi Jing* to explain its meaning. From the literature listed above, the following points about soybeans can be derived: (1) Soybeans and millet played a significant role among the five or nine major Chinese crops during the period from the Western Zhou Dynasty (6th century BC on) through the Spring and Autumn Period and Warring States, even to the Qin [221-206 BC] and Han [202 BC to 220 AD] dynasties. “This is indicated by statements about gentlemen using stewed soybeans as their major meal and even the emperor [in the *Zhou Shu*, 5th to 3rd centuries BC] taking soybeans taking soybeans and chicken as his major daily food.

“(2) The way to eat soybeans during that time was to stew the seeds as meal and to cook young green leaves as soup. These ways of preparation had a significant influence on the later adoption of eating immature green soybeans (*maodou*).

“(3) In ancient China, proverbs about soybeans existed before relevant Chinese characters were invented. Texts related to soybeans were recorded as soon as relevant characters were created from about 2700-3000 years ago. Oral works from the Shang Dynasty recorded in the *Shi Jing* date to 3600 years ago. From these records it can be inferred that soybeans existed during the Yan-Huang and Hou-Ji period, 5000 years ago” (p. 41-42). Note 1. The last three sentences are pure speculation and unsupported by any known evidence. The earliest solid evidence for soybean domestication in China dates from about the 11th century BC (Hymowitz 1970, p. 415-17).

The soybean is called “soy, soja, or soya” in Western countries, “which originates from the pronunciation of the Chinese character ‘Shu.’” Note 2. Most etymologies of the words “soy,” “soybean” and “soya” state (correctly, we believe) that they are derived from the Japanese word *shôyu* meaning “soy sauce.”

Soybeans were used and processed in 4 different ways in ancient China (for each he gives a citation): (1) The dried seeds were stewed for daily meals and the young leaves were used as a vegetable to make soup. (2) The seeds, stems, leaves, and pods were used as animal feed. (3) The soybean was used for medicinal purposes. (4) Technology was developed for making various kinds of soyfoods, such as soy nuggets, tofu, doujiang, soybean oil, soybean sprouts, etc.

The section titled “Historical textual research on *maodou* in ancient China” cites 6 early documents which are said to mention immature green soybeans. Each of these six are cited elsewhere. A 7th was the *Jie-An Man-Bi* (Ming dynasty, by Li Xu, 16th century) which states: There are some varieties [of *maodou*] with fragrant flavor and glutinous taste, and some with flavor like ginkgo seeds. Those are new varieties.

“The exact record and time of the initial utilization of green pods and beans has not been discovered in the literature.” The practice of picking green pods, shelling them for immature seeds, and even putting them on the market for sale, existed by the 12th century (Song dynasty). The term *maodou* first appeared in the literature during the 17th century (Ming dynasty).

Since then the term *maodou* has appeared extensively in the literature, for example: (1) *Nong-Pu Bian-Lan* (1755). (2) *Qi-Ming Si-Shu* (1846). (3) *Jin-Si Tu-Can Biao-Lue* (1898). (4) *Yong-Chen Tu-Can-Biao* (1899). (5) *Zhi-Wu Ming-She Tu-Kao* (19th century). These texts include statements such as: Green immature soybeans are especially delicious; the fried ones can be served as vegetable dishes. And: Yellow soybeans (*huang-dou*) are now also called *maodou*. There are different varieties. They can be used as a vegetable at an early stage, then as a major food after maturity. They are necessary for the daily life of the people.

From ancient times to the present, green vegetable soybeans (*maodou*) have been most widely cultivated and consumed in the southern half of China, especially in two areas: (1) The lower and middle Yangtze valleys and drainage systems, in the provinces of Jiangsu, Shanghai, Zhejiang, and Anhui. The total area grown here today is about 100,000 ha. (2) Southeast China along the seacoast, including Taiwan, Fujian, and Guangdong provinces. The total area grown here today is about 30,000 ha. Address: 1. Director and Professor, National Center of Soybean Improvement, Ministry of Agriculture; Soybean Research Inst., Nanjing Agricultural Univ., Nanjing, Jiangsu 210095, China. E-mail: sri@mail.njau.edu and nausri@public1.ptt.js.cn.

4179. Jacobi, Dana. 2001. *Amazing soy: A complete guide to buying and cooking this nutritional powerhouse*, with 240 recipes. New York, NY: William Morrow. An imprint of HarperCollins Publishers. xiv + 364 p. Aug. Index. 24 cm. [50 ref]

• **Summary:** Contents: Introduction. Ingredients and techniques. Breakfast. Smoothies and drinks. Dips and starters. Soups and breads. Salads and dressings. Wraps, burgers, and savory pies. Pizzas and pastas. Stews, casseroles, and chilis. Steaks, chops, skewers, and meat loaf. Stir-fries and curries. Seafood. Mainly vegetables. Desserts. Sources. Bibliography. Address: Food writer, New York, NY.

4180. Shurtleff, William; Aoyagi, Akiko. 2001. The book of miso: Savory, high-protein seasoning. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 278 p. Illust. by Akiko Aoyagi Shurtleff. Index. Aug. 28 cm. [223 ref]

• **Summary:** This revision has completely new front and rear covers, designed and illustrated by Akiko. It contains a completely new “Appendix D—Miso Manufacturers in the West” (p. 255, updated to 10 May 2001). The page “About the Authors” (autobiographical) has been updated, and the original photographs have been replaced with more recent ones—reflecting the fact that Bill and Akiko separated in Nov. 1993 and their marriage ended in May 1995.

The last page, “Soyfoods Center,” has been updated.

The inside rear cover has been updated, and now includes current information about: (1) *Miso Production*, a book published by Soyfoods Center about how to start and run a company making miso on any of various scales and budgets. (2) *Miso and Soybean Chiang: Bibliography and Sourcebook*, published by Soyfoods Center. (3) SoyaScan, the unique computerized database produced by Soyfoods Center. This database now contains more than 62,000 records from 1100 B.C. to the present, and more than 76% of all records have a summary / abstract averaging 146 words in length. A description of the four different types of records (published documents, commercial soy products, original interviews and overviews, and unpublished archival documents), and the number of each type, is given.

The title page, copyright page, and table of contents have been redesigned and updated to give the book a much more contemporary look. Other small changes have been made throughout the book. Still contains 130 vegetarian recipes—both western and Indonesian.

Ten Speed Press gave this book a new ISBN: 1-58008-336-6. Yet despite the many changes described above, the authors preferred not to have this called a “new edition” or “revised edition.” Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

4181. Thym, Jolene. 2001. A twist on tofu: New, tastier food products put the joy in soy. *Oakland Tribune*. Sept. 5. Bay Area Living section. p. 1, 6.

• **Summary:** This front-page story contains a long interview with Dana Jacobi, author of *Amazing Soy*, plus a large color photo showing ten different types of soyfoods. The writer has discovered that “there’s a whole lot more to soy than plain tofu.” A sidebar titled “Name that food” is a glossary including: Edamame, silken tofu, miso, tempeh, fermented bean curd, fried tofu balls, yakidofu, yuba, soynuts, soy sauce, soy milk. Contains four recipes from Jacobi’s book. Address: Staff writer.

4182. Carter, Rachel; Kistner, Stephanie. eds. 2001. The soy alternative. Vancouver, BC, Canada: Whitecap Books Ltd.

240 p. Illust. (color). Index. 26 cm.

• **Summary:** This is an attractive book, with a full-color photo on almost every other page. However it is edited by a team of people who apparently don’t know much about the subject, since it contains many factual errors. It has no real author and many publishers, the main one being Murdoch Books, a division of Murdoch Magazines Pty. Ltd. (Sydney, Australia).

Contents: The soy story. Glossary of ingredients. Soy for breakfast. Breakfast in a glass. Soy for lunch. Soy for Sunday lunch. Soy for vegetarians. Note: The rest of the book is not vegetarian, containing recipes for beef, lamb, chicken, pork, etc. Soy for dinner. Soy for parties. Soy for dessert. Soy at teatime. Cookery terms. Address: 351 Lynn Ave., North Vancouver, BC, Canada V7J 2C4.

4183. **Product Name:** [Soy & Rice Miso].

Foreign Name: Miso de Soya et de Riz.

Manufacturer’s Name: Les Aliments Massawippi.

Manufacturer’s Address: 4530 Chemin Capelton, North Hatley, Quebec, Canada J0B 2C0. Phone: 819-842-2264.

Date of Introduction: 2001. October.

Ingredients: Organic soybeans, organic rice, salt, *Aspergillus oryzae*, natural spring water.

Wt/Vol., Packaging, Price: 200 gm, 500 gm, or 2 kg plastic tubs.

How Stored: Refrigerated.

New Product—Documentation: Elwell, Christian. 2001.

“Miso more than food: Life! Healing in Rwanda.” *River Currents: News from South River Miso Company* (Conway, Massachusetts). Fall/Winter. p. 2. Nov.

Talk with Gilbert Boulay. 2002. Nov. 24. Their miso is somewhere between a red miso and a light yellow miso. They worked for 6 months adjusting the proportions of ingredients so that, when dissolved in warm water, the broth tasted as much as possible like chicken broth / soup; it is not pasteurized. It was first presented at expos and shows in Oct. 2001 and was first sold commercially that same month; it was first distributed in Dec. 2001.

4184. Watanabe, Koichi. 2001. Re: History of La Soyarie Inc. and list of current products. Letter to William Shurtleff at Soyfoods Center, Nov. 7. 5 p. Typed, with signature on letterhead. [Eng; Fre]

• **Summary:** Each page, except the cover letter, has a color heading and is written in two columns, the left one in French, the right one in English. “About us: La Soyarie produces many food products with soya: Tofu (firm, regular, silk), Tofu burger, Soy Nuts, Tofu Nuggets, Vegetarian Pate. We also distribute other products under the following brand names: Yves Veggie Cuisine, Fontaine Sante Foods Ltd., Nutrisoya, Noble Bean. Address, phone, and fax numbers.” Mme. Jeanne d’Arc d’Astous is chief administrator.

“Company history: From very modest beginnings, La Soyarie produced its first Tofu in 1978, right in our founder’s [Koichi Watanabe’s] home kitchen. This product was supplied only to small local health food stores and friends.

“In 1979, we moved into our first real production facility at 25 St. Etienne St., Hull (Quebec). During this period, our production consisted of only 7 batches of tofu a week. Our company had 20 customers, and produced bulk tofu blocks for total sales of \$1600 a week.

“La Soyarie was incorporated on the 31st of March, 1982.

“In 1823, La Soyarie Inc. launched new product lines derived from traditional Japanese recipes, and made with tofu: the burgers and nuggets.

“On October, 1st, 1989, the business and offices moved to a brand new location, with 6000 square feet, at 94 Adrien-Robert St. in Hull. From then, the company began to prosper and grow rapidly. We now own the building and use all of its space that is 12000 square feet.

“Today, La Soyarie contracts 13 distributors that serve the regions of Montreal, Quebec and Toronto. We sell to some supermarkets chains and we supply ‘Fontaine Sante Foods Ltd’, on a weekly basis, for them to make their tofu based products.

“We serve more than 70 other businesses in the Ottawa region: Supermarkets, natural food stores, and some restaurants.

“We use more than 400,000 kg of organically grown Canadian soya beans per year.

“We currently employ 24 persons.

“The name for our company, ‘La Soyarie’ was selected from the entries in a ‘name the business’ contest. The winner received a year’s supply of tofu.

“The logo represents a soya leaf.”

A 1-page list of products shows that the company makes the following: Tofu–Regular water pack, 500 gm. Tofu–Regular vacuum pack, 454 gm. Tofu–Herb vacuum pack, 454 gm. Tofu–Vegetable vacuum pack, 454 gm. Tofu–Silk water pack, 500 gm. Tofu burger fried 300 gm. Miso burger fried 300 gm. Teriyaki burger fried 300 gm. Ganmo burger fried 300 gm. Tofu burger baked 280 gm. Miso burger baked 280 gm. Teriyaki burger baked 280 gm. Ganmo burger baked 280 gm. Imperial burger 150 gm. Oriental burger 150 gm. Nut burger 300 gm (no soya). Pinto burger 300 gm (no soya). Regular tofu nuggets 150 gm. BBQ tofu nuggets 150 gm. Soynuts 250 gm (regular, BBQ, plain, no salt). Tofu cutlets (150 gm, or 300 gm). Vege pate 220 gm (yeast free, no soya). Address: President & plant manager, 94 Adrien-Robert St., Hull, Quebec, Canada J8Y 3S2. Phone: (819) 777-6716.

4185. *River Currents: News from South River Miso Company (Conway, Massachusetts)*, 2001. The people of

South River Miso Co. (Photo caption). Fall. p. 1. Nov.

• **Summary:** This photo (3 by 5 inches), taken 7 Sept. 2001 in front of the masonry stove at the start of the company’s new season, shows: Front row, left to right: Robin Cole, Heather King, Christian Elwell, Katherine Kendall, Alia Kusmaul. Back row: Steve Freiman, Yukio Doyama, Meagan Calogeras. (Absent: Gaella Elwell).

A sidebar titled “Apprenticeship at South River” states: “We are very happy to welcome Meagan Calogeras as apprentice this year. Meagan has traveled far and wide, most recently completing a year of study in Lyons, France, for her MBA. She is fluent in English, French, German, and Japanese... She will also be part of the South River Farm community, which includes weekly community meals and a wide range of farm activities. Apprentices make a ten-month commitment...”

4186. Wilkinson, Endymion. 2001. Chinese culinary history. *China Review International (Hawaii)* 8(2):285-302. Fall. [49 ref]

• **Summary:** This article consists of reviews of three books. The first book (p. 285-91) is: H.T. Huang (Huang Hsing-Tsung). *Fermentations and Food Science*. Part 5 of *Biology and Biological Technology*, volume 6 of *Science and Civilization in China*, edited by Joseph Needham. Cambridge: Cambridge University Press, 2000. xxviii, 741 pp. Hardcover. £90. ISBN 521-65270-0. This is an excellent, positive review by a man who is deeply knowledgeable and interested in both Chinese history and Chinese food history. He was European Union Ambassador to China from 1994 to 2001 and author of one of the best books on Chinese history. He begins by noting that this book “goes to the very heart of what makes Chinese food Chinese by tracing the historical development of the chemical basis of the fermentations used in Chinese food processing. Dr. Huang is deeply qualified to write such a study...” He discusses each chapter in order. Concerning chapter (d) on soybean processing and fermentation, he observes: “From the Han to the Tang soybeans were normally cooked into granules (*doufan*) or congees (*douzhou*) and eaten as a staple (*zhushi*). By the Tang, wheat was replacing soybeans, which were increasingly used as a supplemental food (*fushi*).” Because soybeans had an unpleasant beany flavor and required a long time to cook by boiling, the Chinese experimented with other ways of processing them. Sprouting beans (*dadou huangjuan*) had been used as a medicine since at least the Han; soybean sprouts emerged as a foodstuff in the Song. “A form of soybean curd (*doufu* in Chinese, pronounced *tofu* in Japanese) may have been discovered in the Han but it only became a popular foodstuff in the Song (at which time it was imported to Japan by Buddhist monks, who at first called it Chinese curd, *Tōfu*).” Note: The first character, when pronounced *Tō* in Japanese means “China,” but when

pronounced Tang refers to that Chinese dynasty (618-907) shortly before the Song (960-1279).

“By the Former Han, salted or semi-fermented black beans (*shi*; modern pronunciation, *chi*, *douchi*) were produced by stopping the fermentation process halfway...” Huang believes that soy sauce made from jiang began to emerge during the Han dynasty but did not acquire its modern name of *jiangyou* (soy sauce) until the Song “(it is only from the Qing [1644-1912] that it became the main condiment and seasoning in Chinese cooking).”

Wilkinson is critical of the series editor for the continued use of Needham’s obsolete system of romanization.

The second work is: Xu Hairong, editor in chief. *Zhongguo yinshi shi* (The history of Chinese food and drink). 6 volumes. Beijing: Huaxia Chubanshe, 1999, 4,067 pp. Hardcover. ISBN: 7-5080-1958-X. Since the 1980s, much excellent research has been done on Chinese culinary history, and this 6-volume Chinese-language work sums up much of this scholarship. More than 4,000 pages long (with plenty of illustrations), it is by far the largest history of Chinese food and drink available. Most of the authors are professional historians and several have already made important contributions in this field. A brief analysis of each volume is given. Unfortunately, the absence of an index makes this large work difficult to use as a reference. It is followed by an overview of other valuable works (mostly in Chinese) in the field.

The third book is *The Cambridge World History of Food*, 2 vols. (2000). Wilkinson is sharply critical of this work, both because so little material on Chinese culinary history is presented, and because that material contains so many errors and inconsistencies—examples of which he presents one by one for 4 pages! Address: Harvard Univ. [Cambridge, Massachusetts].

4187. *SoyaScan Notes*. 2001. Chronology of major soy-related events and trends during 2001 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** April 12—Bill Bolduc, founder of Eden Foods and natural foods pioneer, dies in Southern California.

April 17—Martha Stewart, on her popular nationwide TV program *Living*, has a very positive segment on South River Miso Co.

April 18—Richard Rose, a soyfoods pioneer, sells Rella Good Cheese Co. to Tree of Life. He retains his company HempNut, Inc. in Santa Rosa, California. His Hempheh (hempseed tempeh) still contains soy.

May 11—The Kerry Group (of Wisconsin and Iowa) purchases Iowa Soy Specialties, LLC of Vinton, Iowa.

June 12—The Hain Celestial Group acquires Yves Veggie Cuisine (Vancouver, BC, Canada).

Aug. 24—Wildwood Natural Foods (Fairfax and Santa Cruz, California) and Midwest Harvest, Inc. (Grinnell,

Iowa) merge to form Wildwood Harvest, Inc. Iowa Agricultural Finance Corporation (IAFC) invests \$3.3 million in the new company, and the Iowa Farm Bureau Federation (IFBF) invests an additional \$700,000. This investment will be used to build and equip a 20,000 square foot soyfoods plant in Grinnell and to remodel and equip another 20,000 square foot soyfoods plant in Watsonville, California.

Aug.—Bunge, in its initial public offering (IPO), raised \$278 million by floating 23% of its shares on the New York Stock Exchange. Bunge has been a private grain trading company since it was founded in 1818 in the Netherlands by Johann Peter Gottlieb Bunge.

Sept.—SunRich’s new soymilk plant in Wyoming starts production. By Nov. the plant is at full capacity and expansion begins.

Oct.—The Coca-Cola Co. acquires Odwalla, Inc. of California for \$181 million. Odwalla has annual sales of about \$130 million, mostly in fresh, refrigerated juices plus some delectable soy beverages.

Oct. 21—The U.S. National Organic Program and its standards take effect.

Nov. 4–7—Fourth International Symposium on the Role of Soy in Preventing and Treating Chronic Disease held at San Diego, California. General chairpersons and proceedings editors: Stephen Barnes and Mark Messina.

Dec. 10—The Hain Celestial Group, Inc. acquires Lima NV, the leading Belgian natural and organic foods manufacturer and marketer, and its Biomarché operations. Hain appoints Lima’s Chairman, Philippe Woitrin, as Managing Director of Hain Celestial Europe. Lima is also a European pioneer in macrobiotic foods and soyfoods.

Dec. 11—Ralston Purina Co. (St. Louis, Missouri, a soy pioneer) is acquired by Nestle SA for \$10.1 billion cash; on this date the deal is approved by the U.S. Federal Trade Commission. The new company is named Nestlé Purina. The merger brings together such household names as Ralston’s Dog and Cat Chow and Nestle’s Friskies cat food and Mighty Dog brands.

Dec. 24—The Federal Trade Commission approves the merger of Dean Foods and Suiza Foods Corp. (which owns 14% of Horizon Organic Dairy). A federal judge throws out White Wave’s lawsuit arguing that White Wave has the right to buy back its own stock at the market price before the merger.

In 2001, for the first time in modern history, the USA lost the distinction of supplying more soybeans and soybean products (oil and meal) than all other countries combined. This year it supplied about 46% of the world’s soybean exports. South America (mainly Brazil and Argentina) now supply more than 50%. Devalued currencies in Brazil (the *real*) and Argentina (the *peso*), plus the strong U.S. dollar, make it difficult for U.S. exporters to compete based solely

on price. To compete in the future, U.S. growers must find a new strategy, which will focus on soybean quality.

4188. Dionne, Suzanne. 2001. *Miso—More than food: Life*. Quebec, Canada: Les Aliments Massawippi, Inc. 82 p. Illust. 22 cm. Spiral bound. [49 ref. Eng]

• **Summary:** Contents: Acknowledgements. About the author. Introduction. What is miso? The art of making miso. Exceptional nutritive qualities. Non-pasteurized miso: a living food. Miso, provider of physical well-being, healing and longevity agent. Recipes—Entrees. Broths and soups. Salads. Main dishes. Vegetables and side dishes. Sauces and vinaigrettes. Other useful recipes. Address: North Hatley, Quebec, JOB 2C0, Canada.

4189. Dionne, Suzanne. 2001. *Le miso—plus qu'un aliment... la vie [Miso—More than food: Life]*. Quebec, Canada: Les Aliments Massawippi, Inc. 82 p. Illust. 22 cm. Spiral bound. [49 ref. Fre]

• **Summary:** For contents, see the English-language edition. Address: North Hatley, Quebec, JOB 2C0, Canada.

4190. Weed, Susun S. 2001. *New menopausal years: The wise woman way*. Woodstock, New York: Ash Tree Publishing. xxiii + 280 p. Dec. Illust. Index. 22 cm. [102* ref]

• **Summary:** Soy is discussed throughout this book but sources are rarely cited. When they are cited, we insert them below. For heavy bleeding (flooding) during the menopausal years: To nourish and tonify, avoid tofu, soy drinks, and soy protein powders (p. 9-10). For uterine fibroids: Consume lignans, which are anti-estrogenic phytoestrogens, found in all whole grains and beans—including soy (p. 15). Building better bones: Exercise regularly, eat calcium-rich foods, and avoid calcium-leaching foods such as soy “milk,” tofu, coffee, alcohol, and white flour products (p. 24). Calcium: Caution—“Unfermented soy (e.g. tofu) is especially detrimental to bone health being protein-rich, naturally deficient in calcium, and a calcium antagonist to boot (p. 28). Beware of calcium antagonists, foods that interfere with calcium utilization. Avoid consistent use of unfermented soy products, including tofu, soy beverages, and soy burgers (p. 29; see p. 163).

Phytosterolic, phytoestrogenic foods: Whole grains and beans are good sources. “Caution: Beans must be cooked or fermented to remove anti-nutritional substances. Tofu and soy ‘milk’ are not recommended” (p. 70).

Red clover has ten times more phytoestrogens than soy, as well as much more bone-building minerals, such as calcium and magnesium (p. 71). Sea vegetables are second only to flax in concentration of lignans. Seaweeds, not soy, are the real secret of health in the Japanese diet (p. 72). “The phytoestrogens in dong quai, like those in soy,

promote the growth of cancer cells in petri dishes” (p. 73). Phytoestrogenic herbs: Fermented soy products (miso, tamari, tempeh), ground flax seeds, whole grains, etc. are rich in hormonal precursors and phytoestrogens. Use daily to ease menopausal symptoms, prevent cancer, and lower heart disease risk (p. 94). Lack of vitamin B-12 doubles the risk of severe depression for older women; tofu and soy beverages interfere with its absorption (Fallon 1999) (p. 114).

Preventing breast cancer: 75% of all breast cancers occur in women over age 50. Reduce use of seed oils, such as soy oil. For each 5 gm of polyunsaturated fat (from vegetable oils), risk of breast cancer rose by 70% (Wolk 1997 [sic, 1998]) (p. 145). Eat more beans: “There is a relationship between the large amount of *fermented* soy products (miso and tamari) in the Japanese diet and low incidence of breast cancer. But no relationship has ever been shown between the consumption of processed, fake, imitation soy foods, and breast cancer reduction. Soy beverage is used moderately, or not at all, depending on the specific Asian country” (p. 146).

Herbal allies: Red clover is everything you thought soy would be with none of soy’s drawbacks. It contributes to bone health, normalizes the thyroid, and prevents and counters breast cancer. “So do miso and tamari, but not other soy foods. Red clover contains more active phytoestrogens in greater quantity than soy... Red clover contains all four of the major estrogenic isoflavones; soy has only two of them. A cup of red clover infusion (not tea) contains ten times more phytoestrogens than a cup of soy beverage, is richer in calcium, has less calories, and contains no added sugars” (p. 161).

The section titled “Soy” (p. 163-64) praises fermented soy foods (miso, tamari, tempeh, natto) but is quite critical of tofu, soy milk, and “fake soy foods” (burgers, hot dogs, soy cheese, etc.). Soy can reduce hot flashes and prevent heart disease; fermented soy foods can protect against breast cancer. Soy is not a good source of calcium and it is deficient in fats needed for healthy brain/memory functioning. “Soy protein isolate, textured vegetable protein, isolated isoflavones—processed soy foods come in more forms than I can list. I eat miso and tamari freely, tofu and tempeh occasionally, and other soy products not at all. Dosage: 50-200 grams of isoflavones per day, preferably from food. Caution: Excess soy can cause liver damage and is said to feminize men. Soy may be difficult to digest, may cause allergic reactions.”

Interstitial cystitis: Tofu may cause problems (Ford 1999).

Heart healthy: Soy, whole grains, vitamin E (from foods), essential fatty acids, and seaweeds are helpful (p. 210).

Osteoporosis risk factors: Being a vegetarian or vegan who eats a lot of tofu or soy beverage (p. 218). “Eliminate

soy products except tamari and miso. (Unfermented soy prevents you from utilizing calcium.)” (p. 220).

Aching joints: A tofu poultice may help (p. 229).

Vitamins and minerals for the menopausal years:

Vitamin B-12, calcium, and iron are depleted by unfermented soy products (p. 248, 250-51).

Note: The author does not cite a single scientific publication to support her many criticisms of soyfoods. In fact, the scientific literature does not support her criticisms. It is well known that the author is an admirer of Sally Fallon. Address: P.O. Box 64, Woodstock, New York 12498-0064.

4191. Bittman, Mark. 2001. *The minimalist cooks dinner*. New York, NY: Broadway Books. *

• **Summary:** This book collects two years of recipes from Bittman’s popular *New York Times* column “The Minimalist,” which cleverly caters to the modern gourmet whose expectations are high but whose time is limited. Includes a recipe for miso soup. Address: New York Times food writer.

4192. Davis, Brenda; Grogan, Bryanna Clark; Stepaniak, Joanne. 2001. *Dairy-free & delicious*. Summertown, Tennessee: The Book Publishing Co. 160 p. Index. 21 x 18 cm.

• **Summary:** Contains over 100 creative vegan recipes for managing milk allergy and lactose intolerance. Nutritional information by Brenda Davis, R.D. Recipes by Grogan and Stepaniak. Contents: Introduction. 1. Lactose intolerance. 2. Milk allergy. 3. Building strong, milk-free bodies. 4. Superb substitutes. 5. Dairy-free dining: Travel tips. Natural foods for dairy-free cooking [glossary]: Agar, arrowroot, brown rice syrup, liquid smoke, mirin, miso, nutritional yeast, seitan, soy flour, soy protein isolate powder, soy sauce (tamari), tahini, tempeh, tofu. Dairy-free & delicious recipes: Homemade dairy-free spreads, uncheeses, and milk. Sauces. Breakfast. Salads and dressings. Soups. Main dishes. Desserts.

With this book, you can make any “dairy product” you can imagine without using dairy. The most widely used ingredients are: Tofu (used in more than 70 recipes!). Soy milk, rice milk, and other dairy-free milks. Nutritional yeast.

4193. Geiskopf-Hadler, Susan; Toomay, Mindy. 2001. *The complete vegan cookbook: Over 200 tantalizing recipes plus plenty of kitchen wisdom for beginners and experienced cooks*. Rocklin, California: Prima Publishing. xvi + 318 p. Illust. Index. 22 cm.

• **Summary:** Contains more than 200 vegan recipes, including many recipes for miso (3 recipes), soy cheese (9), tempeh (7), tofu (regular, 22), tofu (silken, 6), and soy yogurt (2). The “Glossary of special ingredients” contains

definitions of miso, soy mayonnaise, soy milk, tempeh, and tofu. For nutritional information about soy foods, see p. 20-21. Tamari soy sauce is frequently used as a seasoning.

Contents: Acknowledgements. Introduction. 1. Cooking fundamentals. 2. Stocking the vegan pantry. 3. Menus for entertaining and everyday meals. 4. Appetizers. 5. Salads. 6. Soups and stews. 7. Vegetable side dishes. 8. Pasta dishes. 9. Grain and bean dishes. 10. Sautés and stir fries. 11. Baked and grilled entrées. 12. Sandwiches and wraps. 13. Morning meals. 14. Deserts. 15. Frequently used ingredients. Appendix: Nutrition fundamentals. Glossary of Specialty ingredients. Address: Northern California.

4194. Hayter, Kurumi. 2001. *The soy for health cookbook: Recipes with style and taste*. Alexandria, Virginia: Time-Life Books. 144 p. Illust. (color). Index. 25 x 19 cm.

• **Summary:** This is a beautiful and strange book, designed and produced by Quintet Publishing Ltd. (London). Beautiful in that almost every other page is a stylish full-color photo of a recipe. Strange in that: (1) Tofu is probably the most common soy ingredient used, yet it does not even appear in the index. Nor does tempeh which is also called for. Yet miso is in the index. (2) A number of the soyfood terms are bizarre and unconventional—such as “beancurd pouches” [abura-age or deep-fried tofu pouches], “sticky beans (natto).” (3) On the inside front cover, the book’s title is given as “The Tofu for Health Cookbook.”

Contents: Introduction: Nutrition and health, lactose (dairy intolerance), prevention against heart disease, prevention against cancer, prevention of other disorders. How to use this book. Glossary of soyfoods and other ingredients. Basic recipes. 1. Soups and stews. 2. Salads and appetizers. 3. Main dishes. 4. Snacks and side dishes. 5. Desserts.

This book is not vegetarian; some recipes call for beef, pork, chicken, fish, etc.—but none call for dairy products.

4195. Hepinstall, Hi So Shin. 2001. *Growing up in a Korean kitchen: A cookbook*. Berkeley, California: Ten Speed Press. 254 p. Illust. Index. 26 cm.

• **Summary:** The best book seen to date for information and recipes on soyfoods in Korea. The author grew up in Cheongju, South Korea, in her ancestral home. Families made sauces in earthenware crocks (p. 7). A list of ingredients with descriptions includes: Bean curd (Tubu [tofu]). Beans, dried (K’ong, incl. yellow and black soybeans, mung beans and red [azuki] beans). Koch’ujang (Korean hot red pepper paste [with soybeans]). Kudzu (Ch’ik). Meju (Korean fermented soybean paste block [soybean koji]). Piji (Bean curd dregs [okara]). Red bean paste (P’at komul). Soy sauce (Kanjang). Soybean powder (K’ong karu; a yellow powder sold in 1-lb plastic bags). Soybean sprouts (K’ong namul). Toenjang (Korean fermented soybean paste).

Essential sauces and pastes: Recipe for: “Homemade soy sauce and fermented soybean paste: Kanjang and toenjang.” It makes 10 gallons and takes about 2 months to prepare. Unusual ingredients include: 3 pieces oak wood charcoal, 1 gallon white grain syrup (choch’ung), 10 toasted jujubes, and 5 dried hot red peppers. For about 60 days, let the crock stand in the open without a lid; cover when it rains. At the end of 60 days the mash is filtered through a bamboo basket lined with a fine-mesh cloth into a crock to yield two products: The fermented soybean paste (toenjang) remains in the strainer, whereas the soy sauce filters through into the crock. Store the paste in a sterilized crock; sprinkle a thin layer of coarse salt on top. “Pour the soy sauce liquid into a caldron, bring to a boil, and allow to simmer over low heat until it is reduced to one-third of its original volume.” Adjust saltiness. The paste and the sauce or now ready to be aged, but we are not told for how long.

Soy sauce at this stage (unaged) is called *ch’ongjang* (clear soy sauce) or *Choson* kanjang (Korean soy sauce). A plain and somewhat salty brown sauce, it is used mostly in base seasonings and clear soups. To make *chin kanjang*, a superior thin, syrupy, jet-black soy sauce, similar to the dark soy sauce sold in today’s markets, submerge a large-mesh cloth pouch containing black soybeans, p’yogo mushrooms, and strips of kelp (*Miyok*) in the clear, unaged soy sauce and simmer over low heat for about an hour. The longer it is aged, the mellower it becomes, and the more intense the flavor.

Homemade hot red pepper paste (*Koch’ujang*, with 1 cup fine meju powder and ½ cup soy sauce). Instant fermented soybean paste (*Makjang*; uses 5 cups powdered meju and takes 10 days to mature). Vinegar soy sauce (*Ch’o kanjang*). T’ang soybean paste (*T’angjukjang*; “the best tasting soybean paste among all toenjang). Fermented soybean paste with garlic and bean curd (*Ssamjang*; “Probably the tastiest soybean paste made in the Korean kitchen,” p. 32).

Main dishes: Five grain rice (*Ogkpap* or *Chapgokbap*, with ½ cup dried black soybeans, p. 41). Koreans traditionally eat this dish on the 15th day of the 1st month of the lunar year). Soybean sprouts with steamed rice (*K’ongnamulbap*, p. 44). Ceremonial soup (*T’ang*, with medium firm tofu, p. 62). Seaweed soup (*Miyokguk*, with tofu, p. 65). Kimchi soup (*Kimchiguk*, with tofu and soybean sprouts, p. 67). Soybean porridge (*K’ongjuk*, with 1 cup soybean powder, p. 78). Noodles in chilled soybean milk (*K’ong kusu*, with 1 quart soy milk, p. 86). Stuffed dumplings (*Mandu*, with medium-firm tofu, p. 90-91). Soy sauce kimchi (*Chang kimchi*, p. 103).

Side dishes: Seasoned soybean sprouts (*K’ong namul*, p. 122, incl. Chilled soybean sprouts, and Soybean sprout soup). Sauteed cabbage kimchi with beancurd and pork (p. 130). Bean curd and vegetable stew with fermented soybean paste (*Tabu toenjang tchigae*, p. 138). Bean curd and

vegetable hot pot (p. 152). Soybean pancakes (p. 163). Stuffed pan-fried bean curd (p. 167). Stuffed pan-fried p’yogo mushrooms (with bean curd, p. 168). Stuffed pan-fried peppers (with bean curd, p. 169).

More tofu recipes are on pages 170, 171, 172, 196-97, 199, 200, 204-05, 217. Many recipes call for kelp, kim (laver, nori) or seaweed (see index). Address: Washington, DC.

4196. Ishige, Naomichi. 2001. The history and culture of Japanese food. London, New York, Bahrain: Kegan Paul. x + 273 p. Illust. Maps. No index. 24 cm. [59 ref. Eng]

• **Summary:** This book is crippled by the lack of an index. Moreover, the sources of most of the interesting material in the text are not cited. Otherwise it is very well researched and well written.

Contents: Introduction–The historical framework. Part I: The dietary history of Japan. 1. The prehistoric era: The Paleolithic age, the advent of earthenware, Jōmon society and dietary culture. 2. Establishment of a rice-growing society: A crop held in special regard, the dissemination and development of rice, rice cooking, sake brewing, fermented fish and flavourings. 3. The formative period of Japanese dietary culture: Historical setting, the taboo on meat eating, the lack of a dairy industry, annual observances and rites of passage, place settings and table settings, cooking and banquet styles, the roles of the monasteries, the popularization of noodles.

4. The age of change: Historical setting, the diffusion of tea, the impact of the ‘Southern Barbarians’ (*nanban*; first came the Portuguese and Spaniards, Catholics from Iberia, then the Dutch and English, Protestants from northwest Europe called *kōmōjin* {“redheads”} to distinguish them from the Iberians, Saint Francis Xavier, introduction of meat eating {beef} by Catholics by 1557 in the town of Oita in northwest Kyushu, expansion of meat eating by non-Christians in Nagasaki and Hirado island {northeast Kyushu}, in 1612 Christianity and meat eating are prohibited by the Tokugawa shogunate but the Chinese colony in Nagasaki is exempted, Dutch traders are the only Europeans allowed to remain in Japan after the country is closed but they are isolated on a tiny island in Nagasaki harbor and barred from contact with ordinary citizens, dishes with nanban influence include fried tofu patties {called *ganmodoki* in the east of Japan, or *hirōsu* or *hiryōzu* in the east}, tempura, nanban confectionary {such as *kasutera*} is especially popular, introduction of new crops by Europeans {incl. sweet potato, two types of pumpkin squash, cayenne pepper, kidney beans, peanuts}, formation of a new style (banquet-style meals {honzen ryōri}, *kaiseki*), change in the frequency of meals (from two to three). 5. The maturing of traditional Japanese cuisine: Historical setting town and country, the spread of soy sauce, the emergence of the restaurant, snack shops, books on

cooking and restaurants, the Ainu, the Ryukyu Islanders. 6. Changes in the modern age: Historical setting, the resumption of meat eating, milk and dairy products, entry of foreign foods, zenith and nadir, new meal patterns, integration of foreign foods—a model.

Part II: The dietary culture of the Japanese. 7. At the table: Gohan—framework of the meal, the rise of the table, the tabletop as landscape, chopsticks and table manners, etiquette—as you like it. 8. In the kitchen: The secularization of fire and water, from wood fire to electric rice cooker, the knife—a sword in the kitchen, restaurants—the public kitchen. 9. On the menu: Soup and umami flavouring. Sashimi—Cuisine that isn't cooked, Sushi—from preserved food to fast food, sukiyaki and nabemono, tofu and nattō—meat for vegetarians, vegetarian temple food, tempura and oil, noodles and regional tastes, pickled and preserved seafood, mochi, confectionery and tea, the dynamics of sake and tea.

Teriyaki developed during the Edo / Tokugawa period (1600-1867) (p. 116; However no citation for the source of this information is given).

During the Edo period, most commoners living in Japan's cities ate plain and repetitive meals. In Edo (later Tokyo) most had a breakfast of rice, miso soup, and pickles; for lunch and dinner they ate approximately the same thing “with the addition of one dish of simmered vegetables or tofu, or simmered or grilled fish” (p. 113). Address: National Museum of Ethnology, Osaka, Japan.

4197. Ishige, Naomichi. 2001. The spread of soy sauce [and miso]. In: N. Ishige. 2001. The History and Culture of Japanese Food. London, New York, Bahrain: Kegan Paul. x + 273 p. See p. 113-17. [59 ref. Eng]

• **Summary:** Soy sauce and miso are both made by mixing soybeans and miso with a fermenting agent named koji (see Section 2.4, p. 32-35). Prototypes of these fermented soyfoods were probably developed in China during the Han dynasty (c. 200 BCE to CE 200). The earliest record of their use in Japan appears in the Taihō Code of 701. The fermented soyfoods mentioned in those laws are: (1) Miso. (2) *Kuki*, which was similar to today's Daitokuji Natto and Hamanatto, in which the beans retain their shape and solidity in the final product. (3) *Hishio*, “a semi-liquid paste or gruel fermented from a mixture of soybean, grains, and sake.”

At least 90% of the miso consumed in Japanese households today is used in miso soup, which most people consume once a day. Miso soup is known to have existed as early as the 10th century, when it was mentioned in the *Engi Shiki*. However “during medieval times it was not part of the meals of the common people. This may have been because miso was considered a luxury and hence not made in quantities sufficient for daily cooking. Instead small amounts were typically consumed by eating a side dish of miso or of vegetables pickled with miso.” Small amounts

were also used as a flavoring. Regional varieties began to develop. In order to improve the appearance of food or to impart a lighter flavor, “miso and water (or a cooked mixture of miso and water) would be placed in a cloth bag and the liquid that trickled out would be collected. This refined miso solution was used in preparing elegant meals for the upper class, and later was replaced by soy sauce.”

As noted above, the prototype of soy sauce was *hishio*, a semi-liquid flavoring, which was probably used in Japan as early as the 8th century (Fukuo 1979). Yet it “was probably too expensive to come into general use, for it is harder to make than miso and has a more refined flavour.”

Soy sauce (shoyu) is mentioned in several 16th century documents. By the 2nd half of this century shoyu factories had been established in the Osaka-Kyoto (Kansai) area, “and some trading ships were used exclusively to distribute the product to other regions. It was as a factory-made product that soy sauce became popular, initially coming into use at daily meals among the townspeople whose lives depended upon the commodity economy.” As Edo (today's Tokyo) grew into a major city, its residents consumed large quantities of soy sauce made in the Osaka-Kyoto (Kansai) area.

Then in the late 1600s, “soy sauce aimed at the Edo market began to be made locally, in the districts that are now called Chōshi and Noda in Chiba Prefecture.” In contrast to the lighter-colored and saltier Kansai product (*usukuchi*), the plants around Edo / Tokyo used a larger proportion of wheat to make a rich, fragrant soy sauce called *koikuchi*. This suited the townspeople of Edo well and by the late 1700s, it had taken over the metropolitan market.

In the cities, by the 1700s, “soy sauce had become the principal seasoning for food and miso had come to be used almost exclusively for soup. But in remote rural districts, miso remained in use as a seasoning for daily meals until the early 20th century, while soy sauce, purchased in small quantities from local factories, was eaten [consumed] only at festival meals or when serving special guests. Many farm families made their own miso until the 1950s, whereas those families that made only soy sauce were always a rarity.

“Nothing is wasted in making miso, because all of the ingredients are turned into the paste which is eaten. Making soy sauce not only involves more work but also leaves a substantial amount of inedible lees after the liquid is strained [and the lees pressed]. The lower rate of yield from the raw materials made soy sauce a luxury item which the peasantry could not easily produce at home, and so miso remained the everyday seasoning among the rural population. What soy sauce was used was factory made. Besides the local sake brewery, every area had a small soy sauce brewery until the early 20th century, when major firms with large factories and national distribution networks created an oligopoly market for soy sauce and it came into

regular use even in poor rural households. Thus the main flavouring of Japanese cooking shifted from miso to soy sauce over a period of more than two centuries, as urban taste gradually diffused through the countryside.”

“Direct use of salt is much less common in Japan than in the West, for much salt is ingested indirectly from soy sauce and miso. A 1980 survey by the Ministry of Health and Welfare determined that soy sauce and miso supplied 27% and 16% respectively of the average daily salt intake, while salt sprinkled on food in the kitchen or at the table accounted for only 13%. In addition to saltiness, of course, soy sauce and miso add other flavour and fragrance to food. Their tastiness results notably from their high content of glutamic acid (discussed in Chapter 2) and their complex flavour structures contain tart and sweet elements as well as alcohol.”

“Soy sauce, being a liquid, is easier to use than miso.” Its greater convenience and wider range of use are key factors in its growth in popularity, which was “also connected with a change in the style of eating raw fish” (*namasu* or *sashimi*). “Sashimi now means fish that has been sliced and arranged on a plate and served with a smaller plate of soy sauce,... With this style, skill at cutting and arranging the slices in a pleasing becomes a point of pride with the chef. Besides *sashimi*, such popular and internationally known dishes as sushi (*nigiri-zushi*), tempura and teriyaki, which all developed during the Edo period [1600-1867], are also meant to be eaten with soy sauce.”

The “cooks of the Edo period were not very eager to develop new tastes. Their culinary ideal was... rather to present the natural taste of the food itself in as pure a way as possible.” Soy sauce helped them fulfill this ideal. “Cooking which concentrates on avoiding creativity and complexity in taste, and which seeks to select the finest ingredients and to slice and serve them with the most beautiful technique, is what developed among the chefs of the high-class restaurants during the Edo period.” Address: National Museum of Ethnology, Osaka, Japan.

4198. Khatau, Asha. 2001. The best of epicure’s vegetarian cuisines of the world. Mumbai (Bombay), India: Zaika. 292 p. Illust. (color). 26 cm. *

4199. Kizawa, Hans; Goto-Nance, Rina. 2001. Japanese home cooking. New York, NY: Hippocrene Books, Inc. 131 p. *

4200. Lee, Cheryl-Ho. 2001. Fermentation technology in Korea. Seoul, Korea: Korea University Press. iii + 330 p. See p. 70-81. Illust. Maps. 26 cm. *

• **Summary:** Korea has a long history of eating fermented soyfoods. Early documents indicate that the cultivation of soybeans originated in Manchuria, which was part of Korea

in ancient times. Address: ZZZ Dep. of Food Technology, Korea Univ., Seoul, Korea; 2. Dep. of Food Preservation, the Royal Veterinary and Agricultural Univ., Copenhagen, Denmark.

4201. Lemlin, Jeanne. 2001. Vegetarian classics: 300 essential recipes for every course and every meal. New York, NY: HarperCollins. ix + 294 p. 25 cm. Index. *

• **Summary:** One chapter is titled “Tofu and tempeh” (p. 189-202). Soy related recipes include: Edamame (p. 41). Miso (p. 10-11, 55-56, 73-74).

Jeanne Lemlin, who has been writing about vegetarian food for more than a decade, has won a prestigious James Beard Cookbook Award. Address: Great Barrington, Massachusetts.

4202. Masuoka, Hiroshi. 2001. Masuosan no misozukuri shinan: tsukurō tabeyō temae miso [Mr. Masuo teaches how to make miso: Let’s make and eat our own homemade miso]. Tokyo: Ie no Hikari Kyokai. 87 p. 21 cm. [Jap]* Address: Japan.

4203. Matsumoto, Miwa. 2001. Tofu, natto [Tofu and natto]. Tokyo: Kin no Hoshi Sha. 47 p. Illust. (color). Index. 30 cm. Series: “Shoko” de Sogo Gakushu Minna de Shirabete Tsukette Tabeyo, no. 4. [Jap]*

• **Summary:** A children’s book. Address: Japan.

4204. Miso Kenkozukuri Iinkai (Making Healthy Miso Committee). 2001. Miso bunkashi [History of miso culture]. Tokyo: Zenkoku Miso Kogyo Kyodo Kumiai Rengokai (Japanese National Miso Association). 590 p. 23 cm. [Jap]* Address: Japan.

4205. Nagayama, Hisao; Shimizu, Shinko. 2001. Miso washoku [Miso in Japanese-style recipes]. Tokyo: Ie no Hikari Kyokai. 127 p. 21 cm. [Jap]*

• **Summary:** Hisao Nagayama was born in 1934. Address: Japan.

4206. Nakamura, Shigeko. 2001. Wagaya no aji kantan tezukuri miso: wandeiz tezukuri shirizu [My home taste of easy homemade miso: One day homemade series]. Tokyo: Esuesu Komyunikeshonzu (S.S. Communications). 50 p. 20 cm. Series: Esuesu Shi Mukku; Retasu Kurabu (S.S. Company’s Mukku; Lettuce Club). [Jap]*

• **Summary:** A children’s book. Address: Japan.

4207. Richmond, Akasha. 2001. The art of tofu: Celebrated vegetarian recipes from around the world. Deluxe edition with colour photographs. Torrance, California: Morinaga Publications; London, England: Cross Media Ltd. 119 p. Illust. (39 color photos by Jonathan Pollock). No index. 24 x 19 cm.

• **Summary:** The contents are the same as those of the original 1997 edition. But the beautiful color photos, many of them full-page, make this a deluxe edition. Address: Los Angeles, California.

4208. Sabaté, Joan; Ratzin-Turner, Rosemary. ed. 2001. Vegetarian nutrition. Boca Raton, Florida: CRC Press. CRC Series in Modern Nutrition. [xxiv] + 551 p. Index. 24 cm. [1732 ref]

• **Summary:** The best scholarly book seen to date on this subject. Consists of a Prologue (by Mervyn Hardinge) plus 21 chapters, in five sections, by various authors.

This book contains extensive information on soyfoods as follows: Vitamin B-12, homocysteine, meat analogues and soya milks (p. 47). Summary of epidemiologic studies of soy / tofu intake and breast cancer risk (p. 80-81). Vegetarian diets and soy in the prevention of osteoporosis, diabetes, and neurological disorders (p. 120-21, 125). Iron and soy (p. 202-03). Guidelines to achieve an optimal ratio of essential fatty acids in the diet (p. 203; soy is rich in α -linolenic acid). Zinc, calcium and soy (p. 206). Women's reproductive function, menopausal symptoms, phytoestrogens and soy (p. 232-34, 244). Health advantages of a vegetarian diet for the elderly—and soy (p. 254-55). Vegan children, protein and soy (p. 302). Iron and soy (p. 304; "While the percentage of iron absorbed from soy may be low, the total amount of iron absorbed is adequate, because soy beans naturally contain relatively large amounts of iron" (p. 304-05)). Phytoestrogens and soy (p. 312-13). Macrobiotic diets (p. 313-15). Calcium and soy (p. 316). Vitamin B-12, miso and tempeh (p. 319-22). Iodine and soy (p. 323). Health-promoting phytochemicals beyond the traditional nutrients—soyfoods and isoflavones (p. 342-45; One table shows the isoflavone content (genistein, daidzein, and glycitein) of soybeans, roasted soyflour, roasted soynuts, TVP, tofu, tempeh, miso, and soy milk). Another shows the isoflavone content of commercial soy products by the weight of a typical serving, in descending order of isoflavone content (cooked soybeans, dry TVP, dry roasted soy nuts, tofu, soy flour, soy protein isolate, soymilk, SoyBoy Breakfast Links, soybean chips, tempeh, miso, soy cheese, Ice Bean, Green Giant Harvest Burger, soy noodles, Tofutti, soy sauce, soy oil). Protection against cancer and soy (p. 346-47). Help for menopause and bone loss (p. 347-48). Protective substances and soy foods (p. 397-98). Calcium fortified products such as soy (p. 421). Consuming a wide range of vegetable oils from intact plants—soy (p. 421). Developing a vegetarian food guide—Legumes, lentils and peas (p. 428-29; "Among legumes, the soybean possesses unique nutrient characteristics." Many food guides place soy beverages in the milk-dairy category). Table: Comparison criteria for evaluating soy and grain-based beverages (p. 430). The water efficiency of food production—and soy (p. 449; "The water intensity of animal

production is much larger than the water intensity of crops. For instance, per gram dry weight, soybeans require about 0.75 liters of water" compared with about 20 liters for cattle). Note: Joan Sabaté is a man. The series editor is Ira Wolinsky, PhD, Univ. of Houston, Texas. Address: 1. Prof. of Chair, Dep. of Nutrition, and Prof. of Epidemiology, Loma Linda Univ., Loma Linda, California.

4209. Willcox, Bradley J.; Willcox, D. Craig; Suzuki, Makoto. 2001. The Okinawa Program: How the world's longest-lived people achieve everlasting health—and how you can too. New York, NY: Clarkson Potter. x + 484 p. Index. 24 cm. Foreword by Andrew Weil, M.D. [41 + 474 endnotes]

• **Summary:** A remarkable book! Written by a team of internationally renowned experts, it is based on the landmark, scientifically documented 25-year Okinawa Centenarian Study. Okinawans have the world's longest disability-free life expectancy. Their occurrence of heart disease is only one fifth that of Americans. Their rate of breast, ovarian, and prostate cancer is less than one quarter of American levels. And the number of centenarians per 100,000 is six times that of the USA. This is a book with plenty of solid, practical scientific advice. Address: 1. M.D., Div. of Aging, Harvard Medical School; 2. PhD, medical anthropologist and gerontologist, Asst. Prof., Okinawa Prefectural Univ.—College of Nursing; 3. M.D., PhD, cardiologist and geriatrician, Prof. Emeritus of Community Medicine, Univ. of the Ryukyus, and Prof. and Chair, Dep. of Gerontology, Okinawa International Univ.

4210. Source Family (The). 2001? The Source: Source restaurant "recipes" & Source family. Los Angeles, California. 157 + [20] p. Undated. Illust. No index. 22 cm.

• **Summary:** This photocopied, comb-bound book was made for Jim Baker's Source Family / community, and was never sold in bookstores. It is undated and with no copyright page. Most of the pages are numbered, but about 20 (here and there, often containing photos) are not; they were apparently inserted at the last minute. Contents: 1. The Source recipes (p. 1-17) and other family favorites (p. 18-48). 2. Alternative lifestyle choices, for the well being of body, mind and soul (p. 49-93). 3. Father / Yahowha and The Source Family: Truth behind the legends, an epic and never-ending saga (p. 94-157). All photos are courtesy of "the Source Archives." This book emphasizes on the importance of food, community, and a teacher in spiritual practice.

On the rear cover (and on p. v) is a color photo of The Source restaurant taken from across the street, above the following text: "Jim Baker opened The 'Source Restaurant' in 1969, on Sunset Blvd. One of the country's first health food restaurants. Jim's 'Spiritual Family' grew from those who worked at the Source and soon became 'The Brotherhood of the Source' and later 'The Source Family,'

living communally in the Hollywood Hills. We called Jim Father, then Father Yod and later Yahowha. We sold The Source in 1974 and moved to Hawaii, where Father left his body in August of 1975. The new owners recently closed the Source doors after 31 years, bringing a Hollywood legend and tradition to an end. We are printing the 'Source Recipes' in honor of our 'Earthly Spiritual Father' and The Family that was created."

In Section 1, recipes used at The Source restaurant include: Hi protein cereal (ground fresh from whole grains and seeds not cooked—like muesli, the raw breakfast cereal). The Source dressing (a version was later sold as Cardini Lemon Herb). Ice cream. Cheese cakes. Source special. Guacamole. Vegetable salads. Entrees: Too much crunch. Magic mushroom.

Section 2 discusses: Fish (recipes for ahi / tuna and salmon). Refined foods to avoid. Good foods (brown rice, miso, tofu, nuts, sesame seeds; p. 57-58). Fasting, enemas and elimination diets (p. 65-66). Tofu (p. 74-75). Miso (p. 75-77). Raw foods.

Section 3, the life story of Jim Baker (1922-1975), mentions: His mother, Cora. The Tarzan audition in Los Angeles. Dora Baker (of France), his second wife. His birth on July 4 in Ohio, parents, childhood, great-grandfather, growth of interest in natural healing and foods, Paul Bragg, weight training and competitive sports, University of Chicago (Illinois), graduation from Swedish School of Massage in Chicago, first big job at the Wright plant, married the boss's daughter Margaret; they had a daughter named Peggy, opened Bakers Gym, joined the Marines in World War II, received Medal of Gallantry and Silver Star, ardent archer and champion swimmer, heavyweight wrestler, and judo expert, etc. Lived in Topanga Canyon and became a Vedantic Monk, met Elaine Baker and they were married, part of Nature Boys which lead into the Hippie movement (Jack LaLanne, Gypsy Boots). Elaine and Jim had three sons and opened two famous restaurants on Sunset Blvd. They were divorced and he married Dora, a French girl who was with him at The Old World. Dora started The Source with Jim. "He finally found His Spiritual Father in a very powerful and famous Yogi Bhajan from the East who was living and teaching in L.A. Jim became a Sikh... Jim then married Robin, who was 20 and he was 47. She supported him on all levels and was a devoted wife. Slowly the small group of people who were working at the Source started to become more of a communal and family energy. Jim went to India with the Yogi and while there realized "Neither Hindu or Sikh shall I be, for my soul is universal and free!"... Jim came back to L.A. and started to teach meditation and spiritual knowledge at the restaurant on Sundays. He became known as Father. "Most of us were living in vans or other rentals but wanted to live more communally. The Mother House was rented and this was the beginning of the Source Family. Father and Robin / Ahom

lived above the Source, while the family lived at our mansion on Inverness St. (p. 98-99).

4211. Carter, Jeffrey. 2002. More research dollars needed to breed export soybeans: There's less focus on producing new lines of foodgrade soybeans than on herbicide resistant beans. *Ontario Farmer (Canada)* 34(47):16. Jan. 15.

• **Summary:** This was the message of soybean exporter Michael Loh to farmers at the Southwest Agricultural Conference at Ridgeway. Loh emphasized that the Ontario soybean industry must respond to the needs of its customers. "My vision for southwestern Ontario and Canada is for us to have the image as being the place to go for the best foodgrade soybeans."

Roundup Ready varieties tend to produce a smaller sized bean, yet many Japanese customers want larger-seeded varieties—according to Morris Sagriff, a Lambton County farmer. A photo shows Michael Loh.

4212. Huang, Hsing-Tsung. 2002. Takamine Jokichi and the transmission of ancient Chinese enzyme technology to the West. In: Alan K.L. Chan, Gregory K. Clancey and Hui-Chieh Loy, eds. 2002. *Historical Perspectives on East Asian Science, Technology and Medicine*. Singapore: World Scientific Publishing Co. See p. 525-32.

• **Summary:** "When we talk of technology transfer in the last hundred years, we tend to think of the traffic as flowing entirely from West to East. Actually, even in the 20th century significant bits of Chinese or East Asian technology were also being transmitted to America and Europe. Of these the most influential and yet least appreciated is the use of microbial enzymes in food processing and related industries."

Most of the enzymes used today are derived from 3 genera of moulds, namely *Aspergillus*, *Rhizopus* and *Mucor*. In the early 1950s Dr. Huang gained a working knowledge of the enzyme industry in the U.S. when he worked as a research chemist at the Enzyme Research Department of Rohm and Haas Co. (Philadelphia, Pennsylvania).

Table 1 shows microbial enzymes used in food processing in 2002, and Table 2 shows those used in food processing in 1951. Takamine Laboratories (Clifton, New Jersey) made and marketed Takadiastase, a digestive aid. Wallerstein & Co. (New York) produced the enzyme papain for chillproofing of beer. Rohm & Haas pioneered the application of pancreatic enzymes for the bating of hides. All 3 companies were founded at about the turn of the 19th to 20th centuries.

Jokichi Takamine's innovation was based on koji (Chinese: *qu* [pronounced ch'ü]; the Japanese word is written with the ancient Chinese character), which has been used in Japan for centuries to make saké (and other alcoholic drinks), soy sauce, and miso (both soy condiments). "Modern microbiological studies show that the

principal organisms in *qu* are grain molds of the genera *Aspergillus*, *Rhizopus*, and *Mucor*.

“The origin of *qu* is obscure. It was a known entity in the early Zhou (1000 B.C.), but it could have been in existence much earlier, perhaps even before the legendary Xia dynasty (2000 B.C.). According to the *Jiu Gao* (Wine Edict), c. 300 A.D., by Jiang Tong, *qu* was first obtained when steamed rice was inadvertently left in the open and became mouldy [endnote 3 gives the exact Chinese characters]. This view is supported by two pieces of evidence. First, rice was already cultivated extensively and pottery steamers were known around 6000 B.C. in the Hemudu culture near Hangzhou [W.-G. Hang-chou, or Hang-chow, capital of Zhejiang province in eastern China]. Second, this is precisely the way a rudimentary *qu* was prepared and used in making wine in the 1950s by the aborigines in Taiwan. Thus the earliest *qu* probably had rice as the growth substrate. Rice is still the principal substrate in South China today. But during the Zhou [1045-256 B.C.], as barley and wheat (which were considered inferior grains) grew in importance as cultivated crops in North China, they were adopted as the preferred substrates for making *qu*. Endnote 4. For further details on the origin of *qu*, see H.T. Huang’s book titled *Fermentations and Food Science* in the *Science and Civilization in China* series.

“The art of using *qu* or *koji* to make fermented drinks, i.e. *sake*, was brought to Japan from South China, probably towards the end of the Han dynasty (Shinoda Osamu 1967, p. 551-74). Their employment in the making of fermented soy condiments, such as *Jiang*, arrived later during the Tang (618-907 A.D.), accompanied by the famous agricultural treatise *Qimin Yaoshu* (Important Arts of the People’s Welfare) of 544 A.D. But the Japanese soon developed their own versions of soy condiments such as miso which is quite unlike the fermented *jiang* (soy paste) of China.” Modern microbiology has shown that the principal mould in *koji* is *Aspergillus oryzae*.

“The technology of *qu* was also transmitted, presumably by Chinese immigrants in more recent centuries, to Indonesia. It is called *raggi* [*ragi*] by the natives or *peh-khak* (‘white qu’) by the Chinese settlers. In the 1890s Dutch scientists determined that the fungi in *raggi* were species of *Mucor* and *Rhizopus*. They tried to exploit the amylolytic activity of these fungi for converting grains to alcohol commercially in Seclan [Seclin], France, and Antwerp, Belgium, but their attempts were unsuccessful.”

These early ventures might have remained forgotten were it not for the work Jokichi Takamine in the USA. There follows a summary of Takamine’s life to 1890. In his travels in the U.S. Takamine learned how the brewers and distillers there “used malt to hydrolyze grains into sugar so they could be fermented into alcohol. He realized that Japanese *koji* was much more active than malt for the hydrolysis of grains. He studied the production of ‘diastase’

(amylolytic [starch splitting] enzymes) by the *koji* mold *Aspergillus oryzae* when he returned to Japan. The results convinced him that replacing malt with *koji* enzymes would be a great improvement in the manufacture of whiskey.” In 1890, with the help of his wife’s parents, Takamine made the fateful decision to move his family to the USA and to start the Takamine Ferment Company in Peoria, Illinois, to produce diastase for a local distillery company. The initial results were very promising.

“However, Takamine’s apparent success presented an unwelcome threat to the malt producers in Peoria. They incited local xenophobia [fear and hatred of strangers or foreigners or of anything that is strange or foreign]. One night in 1894 the distillery in which his experiments were being conducted was burned down.” Note 1. There is no evidence that he ever sold any of his purified enzymes in Peoria. [Three years later] “He moved his family to Chicago, where he continued to promote his diastase preparation. Fortunately, by this time, he had obtained a patent (U.S. 525,820) on the use of his diastase as a cure for dyspepsia.” Parke, Davis & Co. (Michigan) agreed to make and market the product under the brand name Takadiastase. In 1897 he moved his family and research laboratory to New York City. Address: Goodwin House, 4800 Fillmore Ave., Alexandria, Virginia 22311.

4213. The Mail Order Catalog for healthy eating. Winter 2002. 2002. P.O. Box 180, Summertown, TN 38483. 36 p.

• **Summary:** The book section of this mail order catalog contains listings for an excellent selection of vegetarian and vegan cookbooks, vegetarian soyfood cookbooks, plus books on food nutrition & health, alternative healthcare, women’s healthcare, native Americans and their cultures, animal rights, and sustainability.

The vegetarian food products section offers TVP granules and chunks, Response textured soy protein concentrates (misleadingly called “Response TVP flakes”), miso soup mixes, wheat free soy pasta, soy & rice pudding mixes, soy & nondairy beverages and beverage mixes, soy protein powders & shake mixes, soynut butters, sea vegetables, vegetarian jerky, soynuts, plus foods from Worthington and Loma Linda, Jyoti India Cuisine, and Dr. John McDougall. Address: Summertown, Tennessee. Phone: 800-695-2241.

4214. Hirsch, J.M. 2002. Tofu not the only way to get benefits of soy; try using miso. *Advocate* (Baton Rouge, Louisiana). Feb. 21.

• **Summary:** “The vegetarian love affair with tofu has done as much harm as good for the reputation of the rather mild-mannered soybean.” But tofu is not the only source of healthy soy protein. Miso is another tasty source, best known as the primary ingredient in Japanese miso soups. Contains

a recipe for “Shish kebabs with miso sauce” from *The Book of Miso*, by Shurtleff and Aoyagi (Ten Speed Press).

Other soy products besides tofu include: Tempeh, toasted and salted soy nuts, soy milk, breakfast cereals and breads that contain soy, soy flours, soy protein powders, and edamame (fresh soybeans still in the pods; often served at Asian restaurants).

Also appeared in the Press (Ashbury Park, New Jersey). Address: Associated Press.

4215. Asimov, Eric. 2002. \$25 and under: Japanese noodles make you forget sushi. *New York Times*. April 10. p. F10.

• **Summary:** This is a review of the Japanese restaurant Onyi (330 Avenue of the Americas, near West Forth St., Greenwich Village—in downtown {southern} Manhattan in New York City). Menchanko means foods mixed together in one huge bowl. “The oyster Menchanko (\$12.50), a miso broth with ramen noodles, is thick with fat, tender oysters, chunks of tofu, vegetables and billowy sheets of soy-milk skin [yuba] that look like handkerchiefs but are soft as bean curd.”

“The already spicy miso Menchanko (\$9.75) is... crammed with shrimp, chicken and balls of salmon along with tofu, soy-milk skin and vegetables.”

After 5 p.m. you can supplement noodle dishes with “simple edamame (\$3.75), boiled green soybeans that are the Japanese equivalent of salted peanuts, to complex yuba chakin (\$6.75). crisp tofu [sic, yuba] purses stuffed with vegetables and crab meat.”

Note: The word “Oni” means devil in Japanese.

4216. Smith, Patricia J. 2002. Macrobiotic Company of America (MCOA, Asheville, North Carolina) is no longer in business. Bruce Macdonald is importing all of Mitoku’s products to the USA (Interview). *SoyaScan Notes*. April 19. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Patricia has heard from reliable sources that after MCOA ceased its operations, Norio Kushi left the company. Bruce Macdonald and his daughter, Crystal, both live in Asheville and run Bruce’s company.

Patricia recently visited South River Miso Company where she visited with Christian Elwell, Robin Cole, Megan Calogeras, and Charles Kendall—who is still making natto, amazake, and mochi. Address: Radical Food, P.O. Box 952, Mill Valley, California 94942-0952.

4217. Treloar, Brigid. 2002. Tofu. Singapore: Periplus Editions (HK) Ltd. Printed in Singapore. 112 p. Illust. (color). Index. 25 x 24 cm. Series: The Essential Kitchen.

• **Summary:** This is a beautiful book, with stylish and informative full-page glossy color photos on every other page. It is well researched, comprehensive, and generally uses standard tofu and soyfoods terminology. It is also strange: We are not told in which country the publisher is

located (perhaps Hong Kong or Singapore) or where the author lives. It is distributed in North America, Japan and Korea by Tuttle Publishing. On the inside rear dust jacket: www.tuttlepublishing.com. It is clearly targeted at a world market.

Contents: Introduction. Tofu glossary (introduction, firm and soft tofu, firm and regular tofu, fresh tofu, silken tofu, soft tofu, extra firm tofu, powdered tofu {or instant tofu or soy milk powder}, nigari tofu, flavored or dessert tofu, grilled tofu {yaki-dofu}, deep-fried tofu {age}, freeze-dried tofu {koya-dofu}, thin deep-fried tofu {aburaage or usuage}, thick deep-fried tofu {atsuage or namaage}, seasoned tofu pouches {for *inari-zushi*}, tempeh). Creating texture and flavor. How to use tofu: How to cut tofu, making a chrysanthemum flower, how to remove excess moisture, how to change soft tofu into firm, how to prepare tofu for cooking (marinating, grilling, pureeing or blending, parboiling / braising, panfrying / stir-frying, scrambling, steaming, deep-frying, smoking, how to reconstitute freeze-dried tofu, how to prepare deep-fried tofu for cooking, substituting tofu in recipes). Appetizers Snacks and light meals. Soups. Baked dishes. Stir-fries. Grilled dishes. Noodles, couscous and rice. Vegetables. Salads. Desserts. Glossary (of general ingredients, incl. soy sauce, Teriyaki sauce). Guide to weights and measures.

Note: This is not a vegetarian cookbook. Some recipes call for pork, chicken, fish (salmon, trout, tuna), etc.

Talk with representative of Tuttle Publishing, Vermont. 2004. May 8. Brigid lives in Australia. Periplus, created in 1997 by Tuttle, is located in Singapore and a sister company of Tuttle. Address: Food writer, stylist, consultant, and cooking instructor [Australia].

4218. Corliss, Richard. 2002. Should we all be vegetarians? Would we be healthier? Would the planet? The risks and benefits of a meat-free life. *Time*. July 15.

• **Summary:** In reference to athlete vegetarians, *Time* magazine says, “Don’t eat meat? Better learn to love tofu and lentils.” TV’s favorite vegetarian is cartoon character Lisa Simpson [of *The Simpsons*], age 8; she once had a crush on a guy who described himself as “a Level Five vegan—I don’t eat anything that casts a shadow.” Ohio Congressman and vegan celebrity Dennis Kucinich says he “feels much better starting his day with miso soup, brown rice or oat groats.”

4219. Stanchich, Lino. 2002. Work with Noboru Muramoto sensei making miso and natural salt in California (Interview). *SoyaScan Notes*. Sept. 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Lino was a business partner with Muramoto sensei, first at the Herb-T Company on 11th St. in San Francisco, and later at Great Life Co. in Escondido, California—where they imported sun-dried crude / unrefined

salt from Mexico, cleaned it by boiling, washing, and filtering (to remove the pollutants found in sea water), then sold it as different varieties of natural salt and also used the salt to make many different kinds of miso, which they sold commercially. Muramoto moved from Glen Ellen, California, south to Escondido to do research on salt. Lino thinks he moved in about 1980 or 1981. They always lost money on the salt, since it took so much time to remove the pollutants. So they tried to make up for those losses by selling miso. Lino and his wife, Jane, were with Muramoto in Escondido from August 1983 to 1985. Lino helped. Lino was never in Glen Ellen. Muramoto stayed in the USA legally in term of immigration.

The various types of miso and Lino's best guess as to the date of introduction is as follows: Chick Pea Miso (fall 1983). Barley miso (1984). Peanut Miso (1984). Green pea miso (1984). Three-year Hatcho miso (1985). They also sold tamari collected from various types of miso, and they made tamari as a separate product.

As far as Lino knows, Muramoto was the first person to make and sell chick pea miso in the USA. It was a sweet miso that fermented for about one year. The koji was always made with rice; sometimes soybeans were used with the chick peas and koji, whereas at other times no soybeans were used. He sold hundreds of pounds of Chick Pea Miso in 1-lb plastic bags, mostly by mail order, but also through a few natural foods stores—in San Francisco (California), Boston (Massachusetts), and Florida. Muramoto was in charge of food production (he had a few assistants) and Lino was in charge of sales.

Lino was born on the border between Italy and Croatia near Trieste; his first name is Italian and his surname Croatian. Address: 101 Willow Lake Dr., Asheville, North Carolina 28805. Phone: 828-299-8657.

4220. Schmit, Matthew. 2002. Soy pioneers: Where are they now? Part III (Interview). *SoyaScan Notes*. Sept. 19. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Continued: In late July 1978 tofu makers from across America met for the first time in Ann Arbor, Michigan, and formed the Soycrafters Association of North America. Those announcing the meeting were unaware of The Tofu Shop in Telluride so—unfortunately—no one from Matthew's group attended, although Catherine Peterson and one other person did attend the second meeting in 1979 at Amherst College in Massachusetts.

In 1978, as an expression of their abundant energy, the group published a booklet titled "Peaking out on tofu." It was handwritten with brown ink on beige paper and contained 20 recipes. On the rear cover was the logo (dragon in a circle) and these words: "these original recipes sprouted in the kitchen of the tofu shop and are prepared with care by the telluride tofool family using our own homemade soy products. Special thanks to: Catherine

Peterson, Kathy Greene, Barton Coffman, Becca Smith, and Sharyn." The booklet was for education and publicity. There was no price on it and Matthew thinks they probably gave it away. Other key people in the "core group" were Joel Rosenbloom (Matthew's right-hand man), Christie and Laurie Mather, and Andy Kahn (who ran the sprout operation).

In Nov. 1978, Craig Boyken sculpted a Tofu Turkey from a large block of tofu made by The Tofu Shop. About 30-40 people, including all workers from The Tofu Shop, gathered in his artist's studio for a potluck vegetarian Tofu Turkey Thanksgiving dinner—probably the first in American history.

One day after Catherine Peterson arrived, the group was invited to the Navajo reservation in the four corners area and to do a tofu-making workshop. It was organized by the farm extension, home economics folks. There was a room full of traditional Navajo women and one social worker. After showing the women how to make tofu and passing out samples, a Navajo woman suggested using fine-weave Nylon paint straining bags (which are inexpensive and widely available at hardware stores) for straining the soymilk. Matthew has used that idea for years.

One day in April 1979 the president of the Bank of Telluride brought Matthew a front-page article from the *Wall Street Journal* titled "Good old bean curd is suddenly popular, but you call it tofu" (April 12). Matthew learned more about other tofu makers across America.

In the spring of 1979 Matthew and Christie Mather, a member of The Tofu Shop group, took a trip to California. In about 1977 Matthew's sister, Marna Utman, has relocated to Arcata, California (where her first child had been born) so her husband could attend Humboldt State University. They had become involved with a small group that was interested in buying land together and forming an intentional community. They had been meeting once a week for several years. They had reached the point where they want to establish a business, which would help them raise the money needed to buy the land. Marna mentioned that she had a brother who making tofu as a business. So the group invited Matthew to come to Arcata (at his own expense) and teach them how to make tofu (free of charge). So Matthew and Christie hitchhiked to California from Telluride—a sort of spring vacation, but teaching people how to make tofu on a home scale wherever they stopped—first in Arcata, then in Ashland, Oregon (where they had friends), and finally in the Dalles, Oregon. Typical attendance at each of their three "tofu workshops" was about 12 people. Each class was a combination of hands-on tofu-making and viewing the color slides that Matthew carried in his backpack—along with some nigari and booklets that he passed out at each workshop. Their efforts planted seeds. In Arcata, the group of people trying to form a community, continued for several years to make tofu and tofu burgers in

people's kitchens then sell these from a booth at fairs to raise money. In the kitchen of the Ashland Co-op, people soon began to make tofu; they were still making it several years later when Matthew returned to visit.

Matthew and Christie then hitchhiked north to Vancouver Island, then east to Glacier Park, and back home to Telluride—where they returned to their work at The Tofu Shop.

One of the small group of people who owned The Tofu Shop was Suzanne Kosciolk (pronounced kos-ee-OH-lek). In late 1978 she had moved to Telluride as a sort of tourist from Albuquerque, where she had been involved with a small yogurt business—so she came into the group with food processing and business knowledge. Matthew met her one day on the street, and she was soon involved with The Tofu Shop. Suzanne had a van; Matthew didn't.

Telluride was a beautiful town, but the population was small and it fluctuated during the year, from a low of about 1,200 permanent residents during the early spring and early fall, to perhaps triple that amount during the ski season (starting with the snows in the late fall) and the summer season of hiking, camping, enjoying the spectacular scenery, and attending various festivals such as the Bluegrass Festival, the Jazz Festival, and Film Festival. The Tofu Shop and co-op had food booths at some of these festivals.

Four interesting ads from the *Telluride Times* (1979) survive. All have a large illustration of the dragon and “Traditional vegetarian cuisine” as part of the company logo. The Tofu Shop is still located in Telluride at “116 N. Oak—on the Sheridan Mall.” One from March 1979 states: “Menus from different nationalities every night. Whatever you're in the mood for, we can probably help you out. Thurs. 3/15 [Thursday, March 15]. Tofu Turkey, Vegetable stuffing, baked potatoes, fruit salad.” Note: The Tofu Shop in Telluride is now selling “Tofu Turkey” commercially, with all the trimmings—even though it was out of season.

Fri. 3/16. Pizza, Minestrone soup, Tossed green salad.

Sat. 3/17. Ganmo (Mock Goose), Stir-fried vegetables, miso soup, etc.

A second ad from April 1979 reads: “Thank you Telluride for a successful winter season. We will be closed for a week of remodeling beginning Monday, April 9, reopening Monday, April 16. During this week, Tofu and Sprouts will be available at Winterstash and Roses.”

A full-page typed sheet titled “Our favorite tofu recipes,” undated but probably from 1979, has as its 1st recipe “Tofu Turkey with Mushroom Gravy (serves 12-16).” There are also recipes for Tofuburgers, Spicy tofu and rice burritos, and Creamy tofu salad dressing. Address: Tofu Shop Specialty Foods, Inc., 65 Martin Ct., Arcata, California 95521. Phone: 707-822-7401.

4221. Meeks, Bob. 2002. Daybreak Cafe: A successful restaurant featuring soyfoods in Arcata, California

(Interview). *SoyaScan Notes*. Sept. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Bob purchased The Tofu Shop, a soy deli and restaurant, from Matthew Schmit, in 1993. It is an alternative restaurant that features soyfoods, all organic ingredients, and mostly local foods. Approximately 75% of his customers are vegetarians. Bob went to culinary school and has spent his life in the restaurant business. He has owned and run his own restaurants for almost 25 years, and has worked in restaurants for almost 32 years.

More than 20 items on his menu include soyfoods or soy substitutions—not including soymilk as a beverage, in coffee, or in smoothies. His most popular menu items that include soyfoods (in descending order of popularity) are: Vegan Florentine (with cashew gravy). Tofu Scrambler (Bob also sells the a packaged dry seasoning mix for Tofu Scrambler). Omelets with tofu instead of eggs. Other specials include Tofu Veggie Scrambler, stir fries with tofu, and curry rice with tofu. He also serves a number of tempeh recipes. Some local farmers that grow organically are too small to be certified. This restaurant is doing very well as a business. An important part of its success is the energy that Matthew put into it before Bob arrived—even though Matthew wasn't really a restaurateur—but rather an excellent tofu-maker. Bob gets all of his tofu from Matthew. After people read his menu they are free to color it!

Bob continues to make a new version of the Tofu Turkey that Matthew used to make in Arcata. Bob blends the tofu with seasonings, then stuffs it with bread, and bakes it in a bowl shape in large, medium, and small sizes. It comes with either cashew gravy or a mushroom-miso gravy. It comes out of the oven ready to go, then customers bake it again at home and baste it. “Tofu Turkeys are a pretty big thing in Arcata.” He sells it at the restaurant and also wholesales it to a few food outlets in Arcata. He likes keeping it small and local. “With Matthew's tofu its just awesome.” His best year he sold about 1,200 Tofu Turkeys from Thanksgiving to Christmas; last year the number was about 300-400. Tofurky changed so that it was more similar to Bob's product; they now have it in a bowl shape, blended and its stuffed. Bob thinks he saw Tofurky spies some years ago at his restaurant trying to steal his secrets. Address: Owner, Daybreak Cafe, 768 18th St., Arcata, California 95521. Phone: 707-826-7543.

4222. Schmit, Matthew. 2002. Tofu turkey in Telluride, Colorado, and Arcata, California (Interview). *SoyaScan Notes*. Sept. 24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The first tofu turkey that Matthew is aware of was made in Telluride, Colorado, in 1978 at Thanksgiving by Craig Boyken, a longtime close friend of Matthew's who loaned him \$250 to help start The Tofu Shop in Telluride in the fall of 1977. Craig is an amazing, sort of Renaissance

man—an artist, mountain climber, musician—among other things. 1978 Craig and his wife, Anne, were living in Telluride in a studio they had built inside an old deserted brick school building. He used to have big banquets in his studio. Shortly before Thanksgiving of 1978 Matthew brought Craig two large blocks of firm nigari tofu, which he sculpted into the shape of a turkey, basted it with soy sauce and oil, baked it in an oven, and continued to baste it from time to time. He probably fashioned some kind of drumsticks on the side. Matthew does not recall any stuffing inside the turkey. As the turkey baked, it shrunk/contracted and lost its distinctive turkey features. It was carved and served with a vegetarian gravy and probably cranberry sauce and stuffing on the side. It was a potluck Thanksgiving vegetarian banquet, with about 30-40 people present, including all people who worked at The Tofu Shop. It was probably the first “Tofu Turkey Thanksgiving” in American history.

After starting The Tofu Shop in Arcata, California, Matthew continued the turkey tradition each year from Thanksgiving to Christmas, starting in about 1982 or 1983. It was a major event. They started carving the turkey from two large blocks of tofu; they would hollow each out, fill the space with stuffing, then put them together and bake them. It would come out like a loaf; when you sliced it you would get a combination of the white meat plus the stuffing inside. The Tofu Turkey came in three sizes (small, medium, and large—which fed 24 people) and was sold as a special-order product via the deli—either for take-home or as a hot plate (sliced, with gravy, stuffing, and cranberry sauce) to eat at the deli; it was not sold to other retail stores. Their record year, they sold \$4,000 worth of Tofu Turkeys including mushroom gravy, and a custom stuffing with okara and miso. People could also special-order tofu pumpkin pies, cranberry sauce, etc.—a full meal. The product was last sold by The Tofu Shop in 1993. Bob Meeks now makes it at the Daybreak Cafe in Arcata, but he has improved the recipe. Also, the Arcata Co-op, which has a service deli named Spoons, has for many years made their own Tofu Turkeys in house.

Matthew met Seth Tibbott of Turtle Island Foods (home of Tofurky) years ago when he came down through Arcata doing in-store food demos for his tempeh products, and Matthew has talked with him periodically over the years.

To this day, Matthew is asked to bring Tofu Turkey to his extended family’s get-together on Thanksgiving in Arcata—for the vegetarians in the family. Address: Tofu Shop Specialty Foods Inc., 65 Frank Martin Court, Arcata, California 95521. Phone: 707-822-7401.

4223. *Iowa Soybean Review (Iowa Soybean Association, Urbandale, Iowa)*. 2002. ISU keeps consumer in mind when developing food-grade soybeans. 13(8):17. Summer.

• **Summary:** Dr. Walter Fehr, distinguished professor of agriculture at Iowa State University (ISU) and head of the university’s breeding program, has as his motto: “The consumer is always right.” The university’s involvement in breeding soybean varieties for food uses has been driven by the Asian market. In 1978 ISU developed a variety named Vinton; after 20 years it remains the standard of quality in the Japanese tofu industry.

In 1979 Fehr took his first trip to Japan to understand that market. Since that time he has worked closely with Asian food manufacturers and buyers. ISU has also developed large-seeded soybeans tailor-made for miso, vegetable soybeans (edamame), lipoxxygenase-free soybeans with no “beany flavor,” soybeans with reduced saturated fat content to eliminate the need for partial hydrogenation, varieties that are low in phytate to reduce the amount of phosphorus in animal waste.

4224. Belleme, Jan. 2002. Miso production in the USA (mainland), Hawaii, and Canada. Miso exports from Japan to the USA and the UK (Interview). *SoyaScan Notes*. Oct. 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** John interviewed each of the miso manufacturers in these three regions and they gave him their company’s production statistics, sometimes on the understanding that he would only publish aggregate figures—which are: USA (including Hawaii) 1,326,000 lb/year (601.5 metric tons/year). Hawaii 660,000 lb/year (299.4 metric tons/year). Canada 313,200 lb/year.

Miso exports from Japan to the USA were 5,561,160 lb/year (2,520 metric tons/year) and to the UK were 308,644 lb/year (140 metric tons/year).

Note: Comparing these figures with comparable 1982 figures published in *The Book of Miso* (1983, p. 240): Miso production in the USA (including Hawaii) has decreased 56.7% from 3,064,444 lb/year (750 metric tons/year) in 1982. Miso production in Hawaii has decreased 53.3% from 1,410,944 lb/year (640 metric tons/year) in 1982. Miso imports from Japan to the USA have increased 263% from 2,114,211 lb/year (959 metric tons/year). Address: P.O. Box 457, Saluda, North Carolina 28773.

4225. Battaglia, Evelyn. 2002. Cooking with soy products. *Martha Stewart Living*. Oct. p. 278, 280, 282, 284.

• **Summary:** Introduces fresh soybeans (edamame), tofu, soy milk, miso, soy sauce. Recipes: Miso soup with tofu, spinach, and carrots. Sesame marinated tofu with vegetables. Chai tea with soy milk. Edamame succotash.

4226. Stacey, Michelle. 2002. Weighing the health benefits of soy. *Martha Stewart Living*. Oct. p. 90, 92, 94, 96.

• **Summary:** Under “the good news” and “the bad news” discusses the benefits and possible (but unclear) disadvantages.

4227. Elwel, Christian. 2002. Small is beautiful and strong! *River Currents: News from South River Miso Company (Conway, Massachusetts)*. Fall/Winter. p. 1, 5. Nov.

• **Summary:** On 4 Nov. 2002 Matt Rulevich of nearby White Oak Farm delivered his first ton of certified organic soybeans to South River Miso Co. They were, of course, grown in Massachusetts, which is not known as a soybean producing state. He will deliver another 5,000 pounds in December. For the past 21 years South River's organic soybeans have been grown in the Midwest.

A sidebar, titled "Seed to Harvest," describes the nine main steps in growing organic soybeans at White Oak Farm. A photo shows Matt carrying a bag of his soybeans.

4228. Elwel, Christian. 2002. Miso more than food: Life! Healing in Rwanda. *River Currents: News from South River Miso Company (Conway, Massachusetts)*. Fall/Winter. p. 2. Nov.

• **Summary:** Note: Some dates and details were added to this published story by William Shurtleff based on an interview with Gilbert Boulay conducted by Shurtleff on 24 Nov. 2002.

Gilbert Boulay and Suzanne Dionne met in Quebec in about 1982. She was a student of forest engineering and she a student of food science and agronomy; they soon became a couple and shared a common interest in international development and refugee problems. In 1984 they applied to various organizations. Gilbert was hired by a volunteer organization in Quebec. In Aug. 1984 they both first arrived in the central African nation of Rwanda, where he and began to work as a Canadian volunteer with the United Nations as an advisor to the Rwandan Ministry of Agriculture and Forestry in the field of forest management and reforestation. Suzanne began working in nutrition centers introducing food products that promote health. They both soon decided to teach Rwandans how to make miso. Suzanne first learned to make miso by herself following the method in *The Book of Miso*. In about Sept/Oct. 1988 she made a quick trip to study miso making with Yoshi and Lulu Yoshihara in British Columbia; she was there 3-4 days. Back in Rwanda, she made miso at their at home in the capital, Kigali. In 1989 they returned to Quebec, where they were married. Soon the president of Rwanda, Juvénal Habyarimana became interested in miso and in July 1989 he actually mentioned it in one of his speeches. Soon thereafter, Suzanne gathered the means to rent a house and turn it into a miso workshop and neighborhood restaurant. She soon had 22 people on her staff making miso and other natural foods. Miso saved the life of a five-year-old girl who had been unable to digest food. "This and similar experiences were a major turning point for Suzanne, as she realized more fully the healing potential of miso."

In 1992 she returned to Canada to study business management with the goal of establishing an organic food-processing business.

After receiving her MBA, Suzanne Dionne and her husband Gilbert Boulay launched their business, *Les Aliments Massawippi*, at 4530 Chemin Capelton, North Hatley, Quebec, Canada J0B 2C0. Phone: 819-842-2264. In 2001 they made their first batch of commercial miso for local distribution. In June 2001 Suzanne received the *Prix Entrepreneurship Féminin* at the *Concours Québécois en Entrepreneurship* for creating two new health food products.

In Dec. 2001 she published the French-language edition of her book about miso. The English-language edition was published in June 2002.

Both Suzanne and Gilbert presently work full time at their miso company; they make the miso in their home and have one employee, a woman who is a chemical engineer from Yugoslavia.

Note: The most recent genocide in Rwanda began in April 1994.

4229. Kadokura, Tania. 2002. Sumo stew: Japan's famed wrestlers have been bulking up on chanko-nabe, a hearty, protein-rich one-pot meal, for more than a century. *Saveur (New York, NY)* No. 62. p. 68-75. Nov.

• **Summary:** Ingredients include tofu and miso. Contains recipes and color photos of sumo wrestlers and chanko-nabe. Address: Tokyo-based cooking teacher.

4230. Charney, Ken. 2002. The bold vegetarian chef: Adventures in flavor with soy, beans, vegetables, and grains. New York, NY: John Wiley & Sons. vi + 313 p. Illust. Index. 23 x 19 cm.

• **Summary:** Contents: Acknowledgments. Introduction: Vegetarian delights. 1. Starting off right: Appetizers and snacks. 2. Soups and stocks: Warm beginnings. 3. Breakfast, lunch, and brunch: From scrambles to sandwiches. 4. Burgers, fritters, and loaves: Stars of vegetarian cuisine. 5. Outrageous soy: Tempting tofu and tempeh. 6. A bold way with beans: Powerhouse dishes. 7. Pasta, risotto, and polenta: Comfort carbs. 8. Seitan: The power of wheat meat. 9. Vegetables and grains on the side: All the best accompaniments. 10. Green salads: Crisp and well dressed. 11. Just desserts: Sweetness and light.

On the rear cover is a brief bio of Ken Charney; on the front cover is a color portrait photo. Address: Seattle, Washington.

4231. Emi, Kazuko. 2002. Japanese cooking: The traditions, techniques, ingredients and recipes. London and New York: Hermes House. 256 p. Illust. (color). 31 cm. *

4232. Imai, Seiichi. 2002. Miso: iro aji ni bure o dasanai gijutsu to hanbai [Miso: The methods of making and selling which control color and taste]. Tokyo: Nosan Gyoson Bunka Kyokai (Agricultural and Fishing Village Cultural Organization). 151 p. 21 cm. Series: Shokuhin Kako Shiirizu, no. 6. [Jap]*

• **Summary:** How to make good-quality miso on a commercial scale, and how to market it. Address: Japan.

4233. Kissel, Renate. 2002. Soja & Tofu: Die neue Vitalkueche [Soya & tofu: The new vital cookery]. Frankfurt am Main, Germany: Umschau Buchverlag. 128 p. Illust. (color photos). Recipe index. 24 cm. [Ger]

• **Summary:** Contents: Soya—the powerbean for nutrition. 1 Salads and appetizers. 2. Sauces, dips, garnishes, and spreads for bread. 3. Soups. 4. Main dishes. 5. Desserts, baked goods, and drinks. 6. Asian dishes. Glossary. Note: The majority of recipes in this cookbook use tofu.

4234. Kyô-tofu kyô-yuba kyô-miso: Kyôto de tabeyô herushii Kyôto [Kyoto's tofu, yuba and miso: Let's eat Kyoto's healthy foods]. 2002. Kyoto: Kyoto Shinbun Shupan Senta. 80 p. 26 cm. [Jap]*

• **Summary:** A book promoting soyfoods made in Kyoto. Address: Japan.

4235. Treloar, Brigid; Inge, Karen. 2002. Healthy soy: Cooking with soybeans for health and vitality. Hong Kong: Periplus Editions (HK) Ltd. Printed in Singapore. 112 p. Illust. (color). Index. 24 x 22 cm.

• **Summary:** This is a beautiful book, with stylish and informative full-page glossy color photos on every other page. It is well researched, comprehensive, and generally uses standard soyfoods terminology. It is also strange: We are not told in which country the publisher is located (perhaps Hong Kong or Singapore) or where the authors live. It is distributed in North America, Japan and Korea by Tuttle Publishing. On the inside rear dust jacket: www.tuttlepublishing.com. It is clearly targeted at a world market.

Contents: Introduction. The health benefits of soy: The heart, cancer, menopause, osteoporosis, weight control, allergies, lactose intolerance, the nutritional value of soy, protein, phytoestrogens, fats, calcium, soluble fiber, vitamins and minerals, energy, carbohydrates, how much soy do we need? (as an exchange for meat), how to use the nutrition table. Nutrition table (for various soyfoods). Soybeans: Green soybeans—fresh and frozen, dried soybeans, how to buy and prepare soybeans (selecting and storing dried soybeans, preparing dried soybeans, soaking, pan-roasting, boiling, pressure cooking, canned). Soy foods: Tofu (selecting and using, storing, freezing), bean curd sheets (yuba), deep-fried tofu (age; seasoned tofu), miso, tempeh, soya sauce (shoyu; regular, low-salt, light, tamari,

ketjap manis), soy milk, soy flour, soy nuts, soy germ powder, soy oil, soybean sprouts, soybean paste (fermented), natto, soy dairy products (soy butter, soy spread {margarine}, soy cheese {plain or flavored}, cream cheese, yogurt, mayonnaise), soy meats (meat alternatives), others (soy breads, cereals, pasta, chocolate, chips, health bars, desserts, tofu ice creams), soy grits, tips (tofu, soy dairy products). Compatible soy flavors. Preparation and cooking techniques: Draining and pressing tofu, cutting tofu, deep-frying tofu, how to reconstitute yuba, how to use deep-fried tofu pouches, how to use miso, miso tips. Soups. Appetizers and dips. Light meals and snacks. Main dishes. Seafood. Vegetables. Salads. Desserts. Soy drinks. Glossary. Guide to weights and measures.

Note: This is not a vegetarian cookbook. Some recipes call for chicken, fish (swordfish, tuna, salmon), shrimp, etc. Address: 1. Food writer, stylist, consultant, and cooking instructor [Australia]; 2. Nutritionist and nutrition correspondent for *Good Morning Australia*.

4236. Weil, Andrew; Daley, Rosie. 2002. The healthy kitchen: Recipes for a better body, life, and spirit. New York: Alfred A. Knopf; London: Ebury. xxviii + 325 p. Illust. (color photos by Sang An, Amy Haskell, and Eric Studer). Ports. Index. 24 cm.

• **Summary:** Lifelong good health starts in the kitchen. Includes 135 recipes; none require red meat, but not vegetarian. Rosie's introduction encourages: "Don't be afraid to work with new ingredients, such as... using tofu,..." The section on "Nutrition and health" contains useful information on the glycemic index (p. xx-xxi), the main sources of fat (p. xxi) and protein (p. xxiv) in the American diet. Eat more vegetable protein, especially from soybeans, "and less animal protein, especially from fish and reduced-fat dairy products. The section on "Stocking the pantry" includes Asian foods—soy sauce or tamari, and "miso paste "Made from soybeans" (p. xxxiii-iv).

Soy related recipes include: "A soy shake," with silken tofu (p. 3, for breakfast). The section "Got (too much) milk?" (p. 34-35) recommends soymilk as a healthful alternative. And in the "Poultry" section (p. 54), Weil suggests substituting baked tofu. Weil has a full page (p. 58) about "Soy sauce: Shoyu and tamari," which also mentions "rice starter (koji)." There are recipes for: "Vegetable nori rolls" with natural soy sauce (p. 72-73). Miso pâté (p. 80). Miso soup (p. 125). Meat and meat substitutes (incl. tofu and gluten) (p. 149-50). Greens with tangy miso dressing (p. 244-45). Address: 1. M.D., Clinical Prof. of Medicine, Univ. of Arizona and Director of its Program of Integrative Medicine; 2. Chef trained at the Cal-a-Vie spa near San Diego, former Oprah Winfrey chef.

4237. *ASA Today (St. Louis, Missouri)*. 2003. Soyfoods enjoy growing popularity. 9(6):4-page insert after p. 2.

April.

• **Summary:** Attractive (with 5 color photos), interesting, and original. This is the first such insert in this 4-page newsletter, and the first time this newsletter has contained a significant amount of information about soyfoods. Below the title is printed: "A special publication from the American Soybean Association." On the back page we read: "ASA thanks the sponsors of this publication...: Solae [DuPont & Bunge], Soyatech, and White Wave. Below the logo of each company is 4½-inch-long column describing the company, its history and activities.

Contents of the insert: Introduction. Soyfoods become mainstream. The most common [widely used] soyfoods. U.S. consumers more aware of soyfoods. The push for soymilk in schools. Soyfoods for the future. Export demand for food ingredient beans.

It begins: "No longer are soyfoods considered unusual or hard to find. No longer are they considered the kind of foods only eaten by so-called 'granola-crunchers' or 'health fanatics'... The menu at the recent American Soybean Association (ASA) awards banquet featured a serving of delicious edamame (sweet green soybeans) that soybean growers and guests alike enjoyed with enthusiasm."

4238. Yamamoto, S. 2003. Soy, isoflavones, and breast cancer risk in Japan. *J. of the National Cancer Institute* 95:906-13. June 18. *

• **Summary:** Breast cancer risk was reduced by one half in Japanese women who ate three or more bowls of miso soup on an almost daily basis. The report monitored 21,852 from 1990 to 2000. Post-menopausal women showed the greatest reduction of risk. Address: Japan Public Health Study of Cancer and Cardiovascular Disease.

4239. Yu, George. 2003. Most probiotic organisms taken by mouth / orally never reach the intestines. Lack of intestinal flora, caused by antibiotics, may cause cancer (Interview). *SoyaScan Notes*. June 19. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Dr. Yu is interested in conducting scientific studies on probiotics and miso. It well known among professionals in his field that most probiotic organisms taken orally (PO = per oral) never reach the intestines—however some beneficial enzymes may get through. The general public has many misconceptions on this subject. It is true that antibiotics do kill many of the beneficial microorganisms that naturally inhabit the intestinal tract, and it is also true that these should be replaced as soon as possible after they are killed. He is interested in trying to introduced the organisms via the rectum (PA = per anal).

Dr. Yu believes that enzymes from beneficial bacteria in the intestines break down substances which are potential carcinogens. He hopes to do research that will test his theory.

Update: 2004 Sept. 19. The National Enzyme Co. (Forsyth, Missouri), a manufacturer of supplements that contain enzymes (most of which it buys from Japan), is interested in following up on George's ideas. Address: M.D., Urologist, Eagis Medical Research Associates, Suite 200, 116 Defense Hwy., Annapolis, Maryland 21401. Phone: 410-897-0540.

4240. Belleme, Jan. 2003. New developments with Mitoku and with miso (Interview). *SoyaScan Notes*. June 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** At the end of March 2003, Mr. Kazama closed Mitoku's office in the USA which John and his wife, Jan, ran as a home business. So John is looking for other sources of income.

Rudy Shur plans to publish John's new book on miso in October or November of this year; the title will probably be *The Miso Book*. The book is a wholistic look at miso with emphasis on health benefits.

Vern Verona, a long-time macrobiotic, wrote a book titled *Cancer Preventing Food*, published in 1994 by Prentice-Hall. Vern is now writing a book about miso. John is involved in a miso-marketing venture. He and Sandy Pukel are organizing a 7-day "wholistic health" cruise to the western Caribbean.

Update: 2009. Jan 27. In the spring of 2005 Sandy Pukel and his partner, John Belleme, launched Holistic Holiday at Sea, a fun filled cruise vacation with gourmet vegan fare and extraordinary educational opportunities. The Taste of Health and Holistic Holiday cruise (as it has come to be known) has become a full-time and very successful business, with revenue of more than \$1 million a year. They do only one cruise a year—in the summer. Last year more than 1,000 people went on the cruise. This coming summer will be the 6th cruise. It is organized entirely by John and Jan Belleme and Sandy Pukel. On a typical day, John and Jan work 12 hours a day. The cruise rates per person range from \$1,195 to \$3,000.

Chris Dawson, who now owns Clearspring in London, has built it into a thriving \$10-12 million dollar a year import and distribution business. He imports from Japan and China and also distributes many natural foods made in Europe. John wrote a book for him titled *The Real Taste of Japan*, published by Cross Media. Address: P.O. Box 457, Saluda, North Carolina 28773.

4241. Egan, Anne. 2003. Edamame (eh-dah-MAH-meh): 60 tempting recipes featuring America's hottest new vegetable. Emmaus, Pennsylvania: Rodale Press. 144 p. Illust. (25 color photos by Mitch Mandel). Index. 24 cm.

• **Summary:** Contents: Introduction: Name game, history (of soybeans), the hottest health food today, selection, preparation, grow your own, sources for edamame seeds. Appetizers. Salads. Soups. Main dishes. Side dishes.

Conversion chart. An attractive non-vegetarian cookbook. Address: Executive Editor of Cookbooks, Rodale Press, 33 East Minor St., Emmaus, Pennsylvania 18049.

4242. Katz, Ellix Sandor. 2003. *Wild fermentation: The flavor, nutrition, and craft of live-culture foods*. White River Junction, Vermont: Chelsea-Green Publishing Co. xv + 187 p. July. Illust. by Robin Wimbiscus. Index. 26 cm. [78 ref]
 • **Summary:** This book introduces readers to fermented foods from around the world. Contents: List of recipes. Foreword, by Sally Fallon. Acknowledgments. Introduction. Cultural context: The making of a fermentation fetish. 1. Cultural rehabilitation: The health benefits of fermented foods. 2. Cultural theory: Human beings and the phenomenon of fermentation. 3. Cultural homogenization: Standardization, uniformity, and mass production. 4. Cultural manipulation: A do-it-yourself guide. 5. Vegetable ferments. 6. Bean ferments. 7. Dairy ferments (and vegan alternatives). 8. Breads (and pancakes). 9. Fermented-grain porridges and beverages. 10. Wines (including mead, cider, and ginger beer). 11. Beers. 12. Vinegars. 13. Cultural reincarnation: Fermentation in the cycles of life, soil fertility, and social change. Appendix: Cultural resources. Notes. Bibliography. Index.

Chapter 6, “Bean ferments,” includes details on miso, miso pickles, koji, tamari, and tempeh—with instructions for making them at home plus recipes. Other chapters discuss: Kefir, cultured soymilk, and Sunflower sour cream (p. 90). Amazake (p. 118-20). Walt Whitman’s poem on compost (p. 162). Von Liebig, whose 1845 monograph “laid the groundwork for the chemical agricultural methods that have become standard practice and that are rapidly depleting soils everywhere.”

The author believes strongly that fermented foods have helped him and several friends to survive AIDS—a fascinating hypothesis! Address: Short Mountain Sanctuary, in the hills of Tennessee.

4243. Song, Sora. 2003. *Going soy crazy*. *Time*. Sept. 1.
 • **Summary:** If even half the claims being made on behalf of the soybean are true, “it may be the closest thing on earth to a magic bean.” “I think eating soy foods—tofu, soy milk or miso—in moderation, a couple of times a week, should be fine,” says Anna Wu, professor of preventive medicine at USC’s medical school.

4244. **Product Name:** Miso Master Salad Dressings [Five Flavors].
Manufacturer’s Name: Great Eastern Sun (Marketer). Made in North Carolina by American Miso Co.
Manufacturer’s Address: 92 McIntosh Rd., Asheville, NC 28806.
Date of Introduction: 2003. September.
Wt/Vol., Packaging, Price: Bottled.

New Product–Documentation: Talk with Barry Evans of American Miso Co. 2004. Jan. 12. This line of five dressings was first sold in retail stores in Sept. 2003. They are sold in 8 oz bottles.

4245. Cook, Carla. 2003. *Dining out: An Asian trek*. A menu large enough to get lost in lets diners chart their own courses. *New York Times*. Oct. 19. p. NJ14.

• **Summary:** This is a review of a unique Chinese restaurant Sunny Garden (15 Farber Road, Princeton, New Jersey)—which also serves quite a few Japanese dishes. Recommended dishes include “Duck with black bean and ginger sauce.”

This Chinese restaurant also (amazingly) as its own sushi bar. And it serves salmon “surrounded by a shallow pool of sweet-and-sour sauce flavored with miso, mirin, and vinegar.” Also Teriyaki shrimp.

4246. Book Publishing Co. 2003. Fall 2003 fall catalog (Mail order). Summertown, Tennessee. 64 p. 25 cm.

• **Summary:** Contains sections titled Soyfoods Cooking (p. 14-17, including books on tofu, miso, tempeh, soyfoods, meatless burgers, meat substitutes, and TVP), Healthy World Cuisine (Chinese, Japanese, Korean, Indian), Vegan Cooking (p. 24-32), Vegetarian Cooking (p. 33-36), Native Voices (Native American books and authors) (p. 45-61). Address: P.O. Box 99, 415 Farm Road, Summertown, Tennessee 38483. Phone: 1-888-260-8458 or 931-964-3571.

4247. HeartHealth Partnership. 2003. *Turning over a new leaf: Your heart-healthy living guide* (Vol. 4, No. 2). Health Drivers Publishing. 29 p. Illust. No index. 19 cm. [26 ref]

• **Summary:** This booklet gives basic information is for people who want to reduce their blood cholesterol levels. It contains ads and touts specific brands. The National Cholesterol Education Program (NCEP) estimates that 52 million Americans are being treated for high cholesterol levels.

“Cholesterol is a soft fat-like substance, which in moderate amounts is essential for good health. It is part of the makeup of all cell membranes, is found in body tissue, and can be made into various hormones. Cholesterol comes from two sources. Your body produces it naturally, mostly in the liver (about 1,000 milligrams a day). The other source is the food you eat, such as meat, poultry, fish, egg yolks, and dairy products. Fruits, vegetables, nuts, seeds, and other plant-based foods do not contain cholesterol and, in fact, some of these foods have been shown to actually reduce blood cholesterol” (p. 2).

HDL (High Density Lipoprotein) is “good” cholesterol. It contains very little cholesterol in its core, but as it travels through the bloodstream it carries LDL or “bad” cholesterol away from the arteries to the liver, where it is either recycled or excreted.

LDL (Low Density Lipoprotein) is “bad” cholesterol. Its makeup is the opposite of HDL cholesterol; its core is almost all cholesterol. “If LDL levels are abnormally high, as it travels through the bloodstream it builds up on the artery walls. When LDL cholesterol combines with other substances, a plaque-like substance is produced that can clog the arteries.

“The ugly: Triglyceride is a form of fat found in food, body fat, and is also carried in the blood as part of the cholesterol molecule. The visible fat on chicken or steak is actually triglyceride. If you are overweight, your body stores the extra calories you eat as triglycerides. People with high triglyceride levels often have low HDL or ‘good’ cholesterol levels and this combination is considered by many experts to be associated with an increased risk of heart disease.”

Fats in your diet and the role they play. Saturated fats, which are higher in meat, dairy products, palm and coconut oils, tend to contribute to LDL (bad) cholesterol levels. Monounsaturated fats are liquid at room temperature but will start to become solid when refrigerated. They can be found in almond, canola, olive, and peanut oils, and seem to have the effect of lowering bad LDL without lowering protective HDL cholesterol. Polyunsaturated fats are found in corn, soybean, safflower, and sunflower oils. They are liquid at room temperature and remain liquid when refrigerated. They may lower bad LDL cholesterol levels and, if used in large enough quantities, they may also reduce protective HDL levels as well. Trans fatty acids “are fats that do not occur naturally in other words, they are created” by hydrogenation. “Hydrogenated fats act like saturated fats.” Look for them on labels; effective Jan. 1, 2006, the FDA will be putting trans-fats content on nutrition labels.

Consider substituting healthier alternatives for the following: Mayonnaise, sour cream (use fat-free), milk (try “soy-milk”), cream, cheese (“many varieties of low-fat soy cheese”), egg yolks, meat (switch to extra lean cuts), butter, and cooking oils (“Almond, canola, olive, and peanut are considered best”).

Glossary of label terms related to calories, fats, and cholesterol: Example—“Fat free” means less than ½ gram of fat per serving. Plant sterols and stanols actually help lower LDL (bad) cholesterol.

Fiber (also called roughage or bulk) is the “part of plant foods that cannot be digested or absorbed by the body, yet it plays an important role in promoting good health and protecting against some diseases—such as heart disease. Men consuming 29 grams of protein a day have been shown to have a 40% reduction in heart attacks compared to men with the lowest fiber intake. The National Academy of Sciences recommends the following daily fiber consumption: Women ages 19-50 = 25 gm. Women over age 50 = 21 gm. Men ages 19-50 = 38 gm. Men over age 50 = 30 gm. More than

90% of Americans don’t meet these recommendations; they average only about 15 gm of fiber a day (p. 12).

Physical exercise “is very likely to lower your risk of heart disease and enhance your overall sense of health and well being.” Almonds can help lower blood cholesterol. In July 2003 almonds received a qualified health claim from FDA (p. 16).

“Soy-anara cholesterol: Research has shown that consuming soy protein, rather than animal protein (meat, poultry, milk, cheese, eggs) can decrease your overall LDL (bad) cholesterol.” In 1999 the FDA ruled in favor of “heart healthy” labeling for certain soy products. “The most familiar forms of soy protein are those found in Asian cuisine; tofu, tempeh, and miso. To make soy proteins more familiar to Americans, products have been developed that closely resemble meat, poultry, and fish, in taste and texture. One of the great things about soy is that it can be flavored and shaped in an infinite number of ways.” On the facing page is a full-page color ad for Boca Burgers and other “Boca meatless products.”

4248. Tsai, Ming; Boehm, Arthur. 2003. *Simply Ming easy techniques for East-meets-West meals*. New York, NY: Random House. *

• **Summary:** Recipes include: Hoisin-lime sauce. Roasted Miso-Citrus chicken.

4249. **Product Name:** Annie Chun’s Miso Soup: FreshPak Noodle Bowl with Tofu and Scallion.

Manufacturer’s Name: Annie Chun’s, Inc.

Manufacturer’s Address: P.O. Box 2418, San Rafael, CA 94901.

Date of Introduction: 2003. November.

Ingredients: Noodles: Wheat flour [white], water, tapioca starch, lactic acid, salt. Soup: Soybean paste (water, soybean, rice, salt), sugar, rice wine, sea vegetable, yeast extract, onion, shiitake mushroom. Toppings: Tofu*, green onion*, spinach*. * = dehydrated.

Wt/Vol., Packaging, Price: 5.4 oz “biodegradable bowl. Retail for \$1.99 (2003/11, Lafayette, California).

How Stored: Shelf stable.

New Product–Documentation: Product with Label purchased at Trader Joe’s in Lafayette, California. 2003. Nov. 16. Paperboard sleeve has a color photo of the noodles and soup in a white bowl. To the left are three Chinese characters. “All natural Asian cuisine.” “Microwave 1 minute.” A small round portrait photo shows Annie Chun, a working mom. www.anniechun.com. Soyfoods Center taste test: Very unsatisfying because of the refined white noodles—what are *not* natural.

4250. Hain Celestial Group, Inc. (The). 2003. *Annual report 2003: 10 years of changing the way the world eats*. Melville, New York. 32 p. Nov. 28 cm.

• **Summary:** Marks the company's 10th anniversary with a nice chronology: "1993. Irwin Simon forms 21 Century Foods with the Farm Foods brand. We acquire Kineret Foods, a specialty kosher brand. Our name becomes Kineret Acquisition Corp. and we sell 1 million shares and warrants in an initial public offering at \$3.25 per unit. We are listed on NASDAQ under the ticker symbol NOSH. The FDA issues its Nutrition Labeling and Education Act (NLEA), regulations establishing general requirements for health claims and food labeling.

"1994. We acquire Hain Pure Food Co. and Hollywood cooking oils from PET Inc. We change our name to The Hain Food Group, Inc. Our ticker symbol is changed to HAIN. Sales in our first full year are \$14 million." 1995. Sales grow to \$58 million. 1996. Sales reach \$69 million.

Net sales for the year ended 30 June 2003 were \$466.459 million, up 18% from \$395.954 million in 2002. Net income in 2003 was \$27.492 million, way up from \$2.971 million in 2002. Many new products containing soy in the product name are pictured and described incl. Imagine Organic Broth [California Miso or Soy Ginger], Westsoy Soy Slender. Lima Soya Drink.

Accompanying the annual report is a "Notice of Annual Meeting of Stockholders and Proxy Statement" (33 p.). Irwin Simon, the founder and CEO, age 45, had the following annual compensation: Salary: \$643,077. Bonus: More than \$175,000. Other compensation: \$16,000. Stock options: 600,000 shares. Note: The value of the company's stock has decreased for the last 3 years in a row. Address: 58 South Service Road, Melville, New York 11747. Phone: 516-237-6200.

4251. Soga Soyfoods [Pulmuone U.S.A.]. 2003. New grilled and marinated Soga Gourmet Tofu: You'll never think of tofu the same way again (Ad). *Natural Foods Merchandiser*. Nov. p. 11.

• **Summary:** This 8½ by 11-inch color ad shows four products in this line: Santa Fe Chili & Lime, Sicilian Tomato Basil, Ginza Ginger Miso, and Korean Barbecue. "Ready to eat! Pre-diced. Pre-seasoned. Pre-grilled."

Talk with John Sim, head of sales at Pulmuone. 2003. Nov. 10. This product should be available in retail stores by Dec. 1.

4252. **Product Name:** Grilled and Marinated Tofu [Santa Fe Chili & Lime, Sicilian Tomato Basil, Ginza Ginger Miso, and Korean Barbecue].

Manufacturer's Name: Soga Soyfoods [Pulmuone U.S.A.].

Manufacturer's Address: 4585 Firestone Blvd., South Gate, CA 90280. Phone: 866-356-2800.

Date of Introduction: 2003. November.

Ingredients: Incl. tofu. miso.

How Stored: Refrigerated.

New Product–Documentation: Ad (8½ by 11-inch color) in *Natural Foods Merchandiser*. 2003. Nov. p. 11. "New grilled and marinated Soga Gourmet Tofu: You'll never think of tofu the same way again" (Ad). Shows the labels of four products in this line: "Ready to eat! Pre-diced. Pre-seasoned. Pre-grilled."

Talk with John Sim, head of sales at Pulmuone. 2003. Nov. 10. This product should be available in retail stores by Dec. 1. Note: The company answers the phone: Pulmuone USA and Soga Soyfoods R&D Center.

Product [Ginger Miso—"Ginza" is not mentioned] with Label purchased at Trader Joe's in Lafayette, California. 2004. July 11. 3.75 by 6 inches. Vacuum packed. White, red, dark blue, green and yellow on blue. Retail for \$2.49.

4253. **Product Name:** Garlic Red Pepper Miso (Unpasteurized).

Manufacturer's Name: South River Miso Co. Inc.

Manufacturer's Address: South River Farm, Conway, MA 01341. Phone: (413) 369-4057.

Date of Introduction: 2003. November.

Ingredients: Incl. brown rice, chickpeas, organic garlic, red pepper paste (imported from Turkey), dried nettle greens, sea vegetables, salt.

Wt/Vol., Packaging, Price: 16 oz bottle. Retail for \$10 plus shipping.

How Stored: Refrigerated.

New Product–Documentation: River Currents: News from South River Miso Company (Massachusetts). 2003. Fall/Winter (Nov). p. 1-3. "Introducing Garlic Red Pepper Miso." Made with a Chickpea Miso base, it is "soy free" and low salt (6%).

4254. **Product Name:** Trader Joe's Instant Miso Soup.

Manufacturer's Name: Trader Joe's (Marketer-Distributor). Product of China.

Manufacturer's Address: Monrovia, CA 91016.

Date of Introduction: 2003. December.

Ingredients: White miso (water, soybeans, rice, salt, *Aspergillus oryzae*), red miso (water, soybeans, rice, salt, *Aspergillus oryzae*), dextrose, clam extract, bonito powder, tangle (*konbu*) extract powder, autolyzed yeast extract, dehydrated shiitake, dehydrated tofu (soybean protein, brine [water, salt], water), dehydrated chives.

Wt/Vol., Packaging, Price: Contains 4 packets, net wt. 0.94 oz (27 gm) per packet. Retail for \$2.99 at Trader Joe's (2003/08, Lafayette, California).

How Stored: Shelf stable.

New Product–Documentation: Product with Label purchased at Trader Joe's in Lafayette, California. 2003. Dec. 14. Outer box: 6.38 by 4.75 by 1.5 inches. White, green, yellow, and black on various shades of reddish brown. The large foil packets are packed in this paperboard box. Each packet gives two 1-cup servings. The ingredients

are listed only on the outer box. A “blend of red and white freeze dried miso paste combined with fish extract powders...” Soyfoods Center evaluation. Product and packet design: Excellent. Flavor, texture, and appearance: Very good—we like the balance of red and white miso and the salt content, but we wish the product were vegetarian, without clams and fish (bonito).

4255. Choe, Ji Sook; Moriyama, Yukiko. 2003. Korean cooking for everyone. Tokyo, Japan: Joie, Inc. 112 p. See p. 95. Illust. (some color). 26 cm. *

• **Summary:** Page 95: “Born from the severe weather and environment, *kochu jang* became the Korean’s masterpiece of seasonings. Make a large amount and store as it keeps well.” The word “jang” is found in seasonings such as *kan jang* (soy sauce), *toen jang* (miso, soy bean paste), and *kochu jang* (hot fermented soy bean paste).

4256. Egami, Eiko. 2003. Miso de tsukuru genkishoku: uchi no awasewaza kenkō ando biyō no reshipi hyakujō Kyōi no miso pawaa o mainichi no shokutaku ni [Healthy foods using miso: 110 recipes from my home which bring you both health and beauty. The amazing power of miso for your table every day]. Tokyo: Seibundo Shinko-sha. 125 p. 21 cm. [Jap]*
Address: Japan.

4257. Farnworth, Edward R. 2003. Handbook of fermented functional foods. Boca Raton, Florida: CRC Press. 390 p. See p. 227, 295. Index.

• **Summary:** An overview, with two chapters on fermented soyfoods (natto and miso) cited separately. Chapter 1, titled “History of fermented foods” (p. 1-25) includes brief and vague histories of “Soy foods” including (p. 18-19) soy sauce, miso, tempeh, natto, and sufu [fermented tofu].

Chapter 4, titled “Kefir: A fermented milk product” (p. 77+) states (p. 85-86) that kefir can be made by growing kefir grains in soybean milk (Abraham and de Antini 1999, p. 327-33).

Chapter 9 is “Natto—A food made by fermented cooked soybeans with *Bacillus subtilis* (natto),” (p. 227-245).

Chapter 11 is “Miso: Production, properties, and benefits to health” (p. 277-87). Chapter 12 is “Korean fermented foods: Kimchi and doenjang” (p. 287-305).
Address: PhD, Senior Research Scientist, Food Research and Development Centre, Agriculture and Agri-Food Canada, St. Hyacinthe, Quebec, Canada.

4258. Gusman, Jill. 2003. Vegetables from the sea: Everyday cooking with sea greens. New York, NY: William Morrow. ix + 131 p. Illust. (color). Index. 24 x 22 cm.

• **Summary:** Learn to identify, buy and prepare sea vegetables. Contents: Introduction: How to use this book, for time-conscious cooks, deep-sea treasures, the history of

sea vegetables in world cuisines, how seaweed is cultivated and harvested, sea vegetables in your kitchen. Meet the sea vegetables: Agar, alaria, arame, bullwhip kelp, dulse, fucus tips, grapestone, hijiki, Irish moss, kombu, laver, nori, sea lettuce, sea palm, wakame. Appetizers and meal starters. Soups and stews. Salads, Entrees. Side dishes. Rolls, wraps and sandwiches. Condiments. Sweets and treats. Beauty secrets from the sea. Mail-order sources.

Soy-related recipes include: Soy sauce and tamari (p. 21). Classic miso soup (with wakame and silken tofu, p. 40). Sweet-and-sour tofu stir-fry (with arame, p. 70-71). Age tofu [aburage] in sea palm (p. 77). Hijiki with deep-fried tempeh (p. 82). Contain a large color photos of each of the sea vegetables and each of the recipes. Address: Teacher, Chef’s Training Program, Natural Gourmet Cooking School, New York City.

4259. Hamauchi, Chinami. 2003. Miso ryōri: karada to kokoro ni shimiwataru [Miso cookery: It goes deep into your body and soul]. Tokyo: Jitsugyo no Nihon-sha. 125 p. 21 cm. [Jap]*
Address: Japan.

4260. Kwon, Hoonjeong; Kim, Young-Kyung Lee. 2003. Korean fermented foods: Kimchi and doenjang. In: Edward R. Farnworth. 2003. Handbook of Fermented Functional Foods. Boca Raton, Florida: CRC Press. 390 p. See p. 287-304. Chap. 12. [86 ref]

• **Summary:** Contents: Introduction. Kimchi: Changes during fermentation, cancer, cardiovascular disease, nitrosamines and ethyl carbonate.

Doenjang: Cancer (epidemiology, anticarcinogenic and antimutagenic activities in vitro and animal models), cardiovascular disease (inhibition of angiotensin converting enzyme, antithrombotic peptides), isoflavones. Conclusions. Conclusions. Acknowledgments.

Note: Angiotensin is an oligopeptide in the blood that causes vasoconstriction (constriction of blood vessels), increased blood pressure, and release of aldosterone from the adrenal cortex. It is a hormone. The inhibition of angiotensin converting enzyme is thought to help relieve medical conditions such as high blood pressure, heart failure, diabetic nephropathy and type 2 diabetes mellitus.

Table 12.1 titled “Fermented food consumption by the Korean population” (gm per person per day) gives statistics for the following soy based foods:

Ganjang (soy sauce): Overall 6.6, highest 8.0 in persons aged 30-49.

Gochujang (hot pepper-soybean paste): Overall 3.7, highest 5.2 in persons aged 30-49 years.

Doenjang (soybean paste): Overall 5.6, highest 8.0 in persons aged 50-64.

Jajang (black [soy] bean paste): Overall 1.1, highest 1.8 in persons aged 7-12.

Chongkukjang (soybean paste, quick fermented [Korean-style natto]): Overall 1.0, highest 2.4 in persons aged 65 or older.

Mixed bean paste: Overall 1.0, highest 1.5 in persons aged 30-49.

Total: 19.0, highest 24.4 in persons aged 30-49.

Source: Adapted from Ministry of Health and Welfare, Report on 1998 National Health and Nutrition Survey (Dietary Intake Survey), Korea Health Industry Development Industry.

Conclusion: There is presently no conclusive evidence showing human health benefits from consumption of Korean fermented soyfoods. Address: 1. PhD, Food Toxicology Div., Dep. of Food and Nutrition; 2. Research Inst. of Home Ecology; Both: Seoul National Univ., Seoul, Korea.

4261. Minamiyama, Yukiko; Okada, Shigeru. 2003. Miso: Production, properties and benefits to health. In: Edward R. Farnworth. 2003. Handbook of Fermented Functional Foods. Boca Raton, Florida: CRC Press. 390 p. See p. 277-86. [45 ref]

• **Summary:** Contents: Introduction. Miso: The history of miso, manufacturing miso, home production of miso, effects of miso on health (gastrointestinal diseases, cancer prevention, elimination of radioactive materials, effect on cholesterol levels and aging, harmful effects of tobacco). Conclusions. Acknowledgments.

Total commercial production of miso in Japan is presently about 600,000 tonnes (metric tons) per year, produced by over 1,500 miso factories and plants (p. 278).

History: At some time between 200 B.C. and 300 A.D. the soybean was probably introduced to Japan, most likely from northern China, through Korea. The earliest known book about miso is "thought to be the *Taiho-ritsyryo* compiled in A.D. 702, but by that time a type of miso was already known in Japan." The technique for preparing miso was introduced from either Korea or China. One theory is that miso developed from Chinese *jan* [sic, *jiang*]. In about 550 to 600 A.D., Japanese came to know about *jiang*, however at this time *jiang* was being made in Buddhist temples in China. It is believed that in 753, a Chinese Buddhist named Ganjin (688-763) came to Japan to promote Buddhism and at the same time brought *jiang* to Japan. Address: 1. PhD, First Dep. of Pathology, Okayama Univ. Medical School; 2. Dep. of Pathological Research, Graduate School of Medicine and Dentistry, Okayama Univ. Both: Okayama, Japan.

4262. Miso tofu natto [Miso, tofu and natto]. 2003. Tokyo: Nosan Gyoson Bunka Kyokai (Agricultural and Fishing Village Cultural Organization).. 249 p. 22 cm. Series: Kikigaki Furusato no Katei Ryori (Written as Heard Home Cooking of the Homeland), no. 16. [Jap]*

Address: Japan.

4263. Sukenari, Futaba. 2003. Mainichi dakara yappari misoshiru [Every day, therefore, as we've always known, miso soup]. Kyoto: Natsume-sha. 103 p. 24 cm. [Jap]* Address: Japan.

4264. Yamori, Yukio; Zhou, Sufen; Cheng, Anqi. 2003. Chang shou yang ceng wei zeng tang [To live longer, healthier: Miso soup. Translated from Japanese] Taipei, Taiwan: Ju zi chu ban you xian gong si (Juzi Publishing Co., Ltd.). 111 p. Illust. (some color). 26 cm. Series: Shi Jie Mei Shi (Delicious Street Food), no. 1. [Jap]*

4265. Evans, Barry. 2004. Macrobiotic foods and miso in America today (Interview). *SoyaScan Notes*. Jan. 12. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Macrobiotic foods is no longer a product category. Awareness of macrobiotics and macrobiotic foods among consumers has slowly but steadily declined over the past 10-15 years. Even though miso is historically a macrobiotic food, it has not benefited much, if at all, from the general uplift that all soyfoods have gotten in recent years. It is still an obscure food.

Many consumers also have a poor understanding of organic foods. Whole Foods did a survey recently which showed that the average Whole Foods shopper thought that every food product sold at Whole Foods was organically grown—otherwise Whole Foods would not carry it. This, of course, is incorrect.

Barry has had to struggle and struggle every step of the way to keep American Miso Company (AMC) viable: Its two big miso competitors are Westbrae (now owned by the Hain-Celestial empire) and Miyako / Cold Mountain (which has fixed past problems in its organic labeling so that it is now accurate). AMC was not profitable in 2003; the company is still having a terrible time making a profit. Two new miso products are Miso Master dressings (Sept. 2003) and corn miso. Alberts Organics (now owned by UNFI; their produce branch) has an exclusive on the miso dressings through the end of November, but they don't operate in California and the Pacific Northwest. The dressings have sold very slowly.

Great Eastern Sun (GES) has never presented itself as a macrobiotic company, but it has always carried a full line of macrobiotic products; the two most important product categories are miso (40% of business) and seaweeds (20%). GES now carries some products that are not macrobiotic—such as sugar and black tea. Address: Owner, American Miso Co., Inc. and Great Eastern Sun, Asheville, North Carolina 28806. Phone: 704-252-3090.

4266. Okazaki, Tetsuki. 2004. The role of the merchant coalition in pre-modern Japanese development: An

historical institutional analysis. CIRJE-F-284. www.e.u-tokyo.ac.jp/cirje/research/dp/2004/2004cf284.pdf. 20 + [8] p. March. [59 ref]

• **Summary:** Shinbo and Hasegawa (1988, p. 262-63) pointed out that in 1780 a *kabu nakama* [merchant coalition] of merchants trading soy sauce from other regions was established in Kyoto; it formed a distribution system for soy sauce from the other regions and brought about soy sauce production in Tatsuno. This is an example of how a merchant coalition can contribute to forming a distribution network (p. 12).

Commodities whose prices are known during the period 1800 to 1840 in Edo (Tokyo) and Osaka are unpolished rice, polished rice, barley, soybeans, raw cotton, wax, muscovado, miso, soy sauce, and saké (p. 12-13). Note: Muscovado (also “muscavado”) is unrefined or raw sugar obtained from the juice of the sugarcane by evaporation and draining off the molasses. Address: Faculty of Economics, Univ. of Tokyo.

4267. Scenario International Co. 2004. *The Organic Gourmet: For healthy meals with a gourmet taste... Miso pastes...* (Brochure). 4092 Deervale Dr., Sherman Oaks, CA 91403. 12 p. 9 x 22 cm each.

• **Summary:** Includes flavored organic oat miso pastes, in ginger and chili flavors. Address: Sherman Oaks, California. Phone: 1-800-400-7772.

4268. Schettler, Renee. 2004. Miso goes mainstream: The jewel of Japanese cooking has found its way into vinaigrette, barbecue sauce and even a peanut butter sandwich. *Washington Post*. April 28. p. F1, F4-F5.

• **Summary:** Includes 8 recipes.

4269. Belleme, John; Belleme, Jan. 2004. *The miso book: The art of cooking with miso*. Garden City Park, New York: Square One Publishers. vi + 182 p. May. Illust. Index. 23 x 19 cm.

• **Summary:** An attractive and informative vegetarian cookbook by two experts in the field. Contents: Acknowledgments. Introduction. Part I: All about miso. 1. Shedding light on miso: Introduction, what is miso?, making miso (traditionally made, naturally aged, temperature controlled), types of miso (determining quality, when used in cooking), preserving miso, the popularity grows. Sidebar: The miso master’s apprentice: Making miso in a traditional shop (John Belleme). 2. Miso medicine: Miso and western awareness, other early studies, isoflavones—soy food’s silver bullet, the role of fermentation, a link to lowered cholesterol, miso and blood pressure, a source of antioxidants, miso and breast cancer, miso and chronic pain reduction, miso and food allergies, miso and enhanced immune function, miso and osteoporosis, miso as a natural antacid, miso and essential

fatty acids, effectiveness of miso’s brown pigment, benefits of longer-aged miso varieties, what constitutes a health dose?, let tradition be your guide. Sidebars: Lowering high cholesterol: Conventional medicine or miso? A nutritional powerhouse. Miso, macrobiotics, and Chinese medicine. Breakfast of emperors: Making miso in a traditional factory. 3. Making miso at home. Part II: Cooking with miso. 4. Cooking guidelines. 5. Dips and spreads. 6. The salad bowl. 7. Soup for all seasons. 8. Sauce sensations. 9. Eat your vegetables! 10. Pasta east and west. 11. Grains and beans. 12. Seafood entrées. Address: P.O. Box 457, Saluda, North Carolina 28773.

4270. Davis, Robert. 2004. Dying to the Self. Leaving Good Karma Foods and moving to Nelson, British Columbia, Canada, to create a Safe Space and make miso (Interview). *SoyaScan Notes*. June 5. Conducted by William Shurtleff of Soyfoods Center.

Address: Founder, Good Karma Foods (GKF), 4527 Hilltop Drive, Clinton, Washington 98236.

4271. Kanner, Ellen. 2004. Final verdict is still not in on the benefits of soy. *Contra Costa Times*. Aug. 11. p. G7.

• **Summary:** Some of the suggested health benefits of soy include relief of the unpleasant symptoms of menopause and improved bone mass in older women. However, a year-long study published on July 7 in the *Journal of the American Medical Association* found that soy powder did not “increase bone density, lower cholesterol or improve memory in 175 post-menopausal women.”

The article suggests that the conditions of the study may not have been optimal; a longer study on younger women might have different results. Additionally, whole soy foods provide a better dose of isoflavones than soy pills or powder. The author seconds Andrew Weil’s recommendation of a daily helping of whole soy foods such as tofu, edamame, soy milk, miso, or soy nuts. Even if the isoflavones in soy don’t have miraculous health benefits, soy is still an excellent low-fat, affordable source of protein. Soy can also lower cholesterol and thus reduce the risk of heart disease. Address: Knight Ridder Newspapers.

4272. Corliss, Richard; Lemonick, Michael D. 2004. How to live to be 100: New research suggests that a long life is no accident. So what are the secrets of the world’s centenarians? *Time*. Aug. 30.

• **Summary:** Okinawans live long and healthy lives. Take Seiryu Toguchi, age 103. He wakes at 6 a.m. For breakfast, he enjoys whole-grain rice [brown rice] and miso soup with vegetables. Then he works for 2 hours weeding his fields. For lunch, he has “goya stir-fry with egg and tofu,” then naps for an hour or so and spends several hours in the field.

4273. **Product Name:** Mellow Organic Brown Rice Miso.

Manufacturer's Name: Tradition Miso.
Manufacturer's Address: R.R. #4-2090, Claremont, ON L1Y 1A1, Canada. Phone: 905-649-2513.

Date of Introduction: 2004. September.

Ingredients: Organic soybeans, organic brown rice, unrefined sundried sea salt [from Brittany, France], deep well water, culture (*Aspergillus oryzae*).

Wt/Vol., Packaging, Price: 450 gm glass jar.

How Stored: Refrigerated.

New Product–Documentation: Labels for Mellow Organic Brown Rice Miso brought to Soyinfo Center by Jerry Lewycky, Suzanne Cardinal, and their two kids, Katrina and Maxim. 2007. Jan. 2. Self adhesive. 2.6 by 10.5 inches. Black and reddish brown on peach. Product with this label first sold Dec. 2005. Product is certified organic by OCPRO Canada. The logo is still the black illustration of the monk. Letter (e-mail) from Jerry Lewycky (whose last name is pronounced luh-WIK-ee), founder and owner. 2007. Jan. 22. Jerry and his wife and co-worker Suzanne Cardinal, first began selling this miso on 13 Sept. 2004. "I used cut-up Brown Rice Miso labels with printed stickers for the first year."

4274. United Soybean Board 2004. Great health, great taste, everyday (Compact disc–CD-ROM). Jefferson City, Missouri. 50 p.

• **Summary:** "The United Soybean Board (USB) is pleased to share with you this 52-page meal-planning tool full of recipes and helpful tips for including soyfoods in your everyday diet. USB is dedicated to helping consumers learn more about the health and nutrition of soyfoods... On this CD-ROM, you'll find an interactive version of USB's *Great Health, Great Taste, Everyday* meal-planning tool."

Contains 21 recipes, most accompanied by a color photo. Includes: Corn and soy muffins. Miso marinade. Layered tofu salad. Oven roasted tofu. Tofu satay. Lemon miso dressing. Lemon tofu cheesecake. Strawberry smoothie. Tofu jalapeno poppers.

4275. Bruni, Frank. 2004. Restaurants: A paean to tofu in a Japanese pub. *New York Times*. Nov. 24. p. F8.

• **Summary:** This is a review of En Japanese Brasserie, a restaurant in Greenwich Village, New York City, which features artisanal tofu—as well as "its dynamic cousin yuba, which is the skimmed skin of heated soy milk, omelet-esque in texture. Yuba arguably has more character than plain tofu..." It also serves house-made miso pastes. Address: Japan.

4276. GEM Cultures. 2004. Catalog [Mail order]. 30301 Sherwood Rd., Fort Bragg, CA 95437-4127. 10 p. Undated. [4 ref]

• **Summary:** Contents: Greetings from Northern California. Soycrafters section: Powdered tempeh starter, natto starter,

koji starters, fresh koji, seed miso, tofu boxes [kit], coagulants. Bread and crepe cultures: Cultured crepes, cool rise natural leaven, rice or rye sourdough. Dairy cultures: Fil mjolk (subs for piima), viili, kefir. Tea fungus–kombucha. Kitchen items: cheesecloth, super sealers. Ordering information. Address: Fort Bragg, California. Phone: 707-964-2922.

4277. Iowa Soybean Promotion Board. 2004. Simply soy: Recipes celebrating nature's perfect bean. Urbandale, Iowa: Iowa Soybean Promotion Board. 151 p. Illust. Index. 23 cm.

• **Summary:** A gorgeous book, filled with elegant, mouth-watering full-page color photos of prepared recipes. Contents: Introduction, by Linda Funk, Executive Director, The Soyfoods Council. 1. The magical bean: Soy to the world, soy and health, the soyfoods pantry (glossary incl. soybean oil, soymilk, tofu, tempeh, edamame, soynuts, soy flour, textured soy protein, canned soybeans, miso, soy protein powder {soy protein isolates}, dried soy flakes {MicroSoy}, soy yogurt and smoothies, soy pasta {ADM}). Soyfood nutrient chart. 2. Start it up with soy: Appetizers and nibbles. 3. On the sidelines: Sides and salads. 4. Spoon fed: Comforting soups and stews. 5. Vegetarian anyone? 6. Teamwork: Pork, beef, chicken, seafood and soy. 7. The bread box: Breads and muffins. 8. Desserts: Soy and spice and everything nice. 9. Cooking with kids. Resources (Directory of members of The Soyfoods Council and their soy products; Directory of state and national soybean boards).

A smoothie (p. 133) is made at home by combining 1 cup soymilk (plain or vanilla), ½ medium banana (may be frozen, if desired), and optional nondairy ingredients, such as chocolate syrup, peanut butter, fruit juice concentrate, or frozen fruits (alone or in combinations—pineapple, orange, cranberry, raspberry, etc.). "Many of the soy smoothies and soy yogurts on the market today are probiotic, meaning they contain active, live cultures that are beneficial to intestinal health." Address: 4554 N.W. 114th Street, Urbandale, Iowa 50322-5410. Phone: 866-431-9814.

4278. Belleme, John; Belleme, Jan; Spevack, Ysanne. 2004. The real taste of Japan: Using the finest ingredients. London: Cross Media Ltd. 155 p. Illust. 19 cm. *

• **Summary:** Written and published for Clearspring, a natural foods importer and distributor in London. Address: 1-2. Saluda, North Carolina.

4279. Ebine, Hideo. 2004. Industrialization of Japanese miso fermentation. In: Keith H. Steinkraus, ed. 2004. Industrialization of Indigenous Fermented Foods. 2nd ed. Revised and Expanded. New York, NY & Basel, Switzerland: Marcel Dekker. xix + 796 p. See p. 99-147. Chap. 2. [87 ref]

• **Summary:** Contents: Introduction. History and earliest known references to miso. Indigenous process: Raw materials used in ancient times. Industrial / Commercial production today. Contrast between indigenous and modern processing. Critical steps in manufacture / fermentation. Major problems in industrialization. Optimal environmental conditions for microorganisms. Essential microorganisms for fermentation. Possible spoilage microorganisms. Chemical / Biochemical changes in miso during fermentation. Changes in physiological functions during fermentation. Forecast of the role of miso in the future.

Foods similar to miso are made in other parts of East- and Southeast Asia. They are referred to as “jiang” in China, “doenjang” in Korea, “taucho” in Indonesia, and “tao-si” in the Philippines. Address: Professional Engineer, Shishitsuka, Tsuchiura, Ibaraki-ken, Japan.

4280. Fukushima, Danji. 2004. Industrialization of fermented soy sauce production centering around Japanese shoyu. In: Keith H. Steinkraus, ed. 2004. *Industrialization of Indigenous Fermented Foods*. 2nd ed. Revised and Expanded. New York, NY & Basel, Switzerland: Marcel Dekker. xix + 796 p. See p. 1-98. Chap. 1. [179 ref]

• **Summary:** Contents: Introduction. History: Historical development of soy sauce in China (Chiang, shih), introduction of soy sauce in Japan, origin of fermented soy sauce in the United States. Present soy sauce situation: Japan (types of soy sauce, manufacturing, flavor components and quality evaluation), China, Southeast Asia, United States. Change of soy sauce manufacturing methods from indigenous to modern processing: Treatment of soybeans and wheat as materials, koji fermentation, brine fermentation, pressing, pasteurization, refining and bottling. Microbiology and biochemistry: Role of koji as an enzyme source (unique source of enzymes, peptidases in koji, role of proteinases in koji during protein digestion, role of glutaminase in koji in formation of glutamic acid during protein digestion) effect of heat treatment of soybean proteins on their digestibility and nutritive value (enzyme digestibility and yield of soy sauce, enzyme digestibility and nutritive value of protein), microorganisms during brine fermentation in soy sauce (change of microflora during brine fermentation, properties of *Tetragenococcus halophilus*, properties of *Zygosaccharomyces rouxii*, properties of *Candida species*), safety of soy sauce and physiological functional properties (Studies of mycotoxins and safety of soy sauce, studies of mutagens and safety of soy sauce, long-term animal tests and anticarcinogenicity of soy sauce, other physiologically functional properties of soy sauce). Application of new technology for soy sauce manufacture: Manufacture of soy sauce through fermentation by bioreactor with immobilized whole cells, enzymatically hydrolyzed vegetable protein, breeding of koji mold through protoplast fusion. Forecast.

Contains 68 figures and 23 tables.

The section titled “Origin of fermented soy sauce in the United States” states (p. 10) that in 1907 a plant manufacturing fermented soy sauce was opened in the United States by Shinzaburo Mogi—a relative of the Mogi family of Kikkoman fame. Note: The author does not say where this plant was, nor does he cite an evidence to support his claim. As of Jan. 2005, Soyfoods Center has been unable to find any such evidence. “After that, another soy sauce company named Oriental Show-You Company was promoted in 1917 in Columbia City, Indiana.” Shinzaburo Mogi was one of the stockholders in this company. Shinzo Ohki, a Japanese man living in the USA, began to make regular (koikuchi) shoyu in the traditional Japanese way, and at one time was making 30,000 gallons/year. In 1961 the Oriental Show-You Co. was sold to Beatrice Foods, Inc. and subsequently became part of La Choy Food Products which was also owned by Beatrice.

Figure 12 (p. 28) shows imports of soy sauce to the USA from 1947 to 1981. This graph was taken, without citing the source, from: Shurtleff & Aoyagi. 1985. *Soyfoods Industry and Market*, 5th ed. p. 103.

Concerning the soy sauce market in the United States (p. 28-31): In 1973 Kikkoman opened its first plant to make fermented soy sauce at Walworth, Wisconsin. In 1998 Kikkoman opened a 2nd such plant in California. In 2001 these two Kikkoman plants made 85,000 kiloliters and 20,000 kiloliters (kL) of soy sauce respectively, for a total of 105,000 kL. To take advantage of the rapidly growing American market for soy sauce, several other foreign manufactures also opened plants making fermented soy sauce. In about 1980, Wan Ja Shan (Taiwan) opened a plant making regular Japanese-style soy sauce (koikuchi). In 1991 San-J (San Jirushi, Japan) opened a plant making tamari soy sauce. In 1994 Yamasa (Japan) opened a plant in Salem, Oregon. In 2001 the total annual production of these 3 plants was estimated at about 20,000 kL. In addition, HVP soy sauce (unfermented) is made and sold in the USA under brands such as La Choy, Chun King, and Aloha—with total production in 2001 estimated at 15,000 kL. Thus in 2001 total soy sauce production in the USA was estimated at 140,000 kL with the following market shares: Kikkoman 75%, 3 other makers of fermented soy sauce 14.2%, and HVP 10.7%. Figure 14 shows total U.S. consumption of soy sauce from 1950 to 2001, including total domestic production, total Kikkoman U.S. production. and total imports. Address: Noda Inst. for Scientific Research, Noda-shi, Japan.

4281. Grimaldi, Polly. 2004. Quick and easy soy and tofu recipes. Hayward, California: Bristol Publishing Enterprises. (A Nitty Gritty book). iv + 155 p. Illust. Index. 14 x 21 cm.

• **Summary:** Contents: 1. An introduction to tofu and soy. 2. Breakfast. 3. Entrees. 4. Side dishes. 5. Salads. 6. Soups. 7. Sauces, spreads, dips and snacks. 8. Breads. 9. Drinks. 10. Desserts. Address: Hayward, California.

4282. Hottinger, Greg. 2004. The best natural foods on the market today: A yuppie's guide to hippy food. Vol. I. Asheville, North Carolina: Huckleberry Mountain Press. 223 p. Index. 23 cm. [94 ref]

• **Summary:** This book looks very commercial because it mentions many natural products by brand name. We wonder if companies paid to be mentioned. Contains scattered recipes for branded products, and scattered sidebars titled "Hippie wisdom." Discusses: Almonds, almond butter, almond milk, American Miso Co., antibiotics (used in agriculture in 4 different ways; prevention, treatment, and control or disease, and growth promotion. In 1998 the European Union banned the use of antibiotics to promote growth in livestock. In Oct. 2000 the FDA proposed a ban on two antibiotics also used to treat humans), antioxidants, Bifidobacterium (bifidus), bovine growth hormone, bovine somatotropin (BST), Bragg Live Foods, Bragg Liquid Aminos, breast cancer, calcium, canola oil, celiac disease, cereal & Kellogg Brothers, cheese alternatives, dulse, edamame, Eden Foods (says "Eden Foods opened shop in 1968. By 1969 they were grinding their own flours and bottling their own oils and nut butters"), FDA, flaxseed oil, Galaxy Foods (says they "started in 1972 when founder Angelo Morini invented a new way to make a cheese product free of saturated fat, cholesterol, and the milk sugar, lactose"), genetically engineered foods, ghee, ginger, gluten sensitivity, glycemic index, GMO [genetically engineered] crops, Graham-Sylvester, heart disease, hippie foods, Horizon Organic, hormones, Lactobacillus, lactose intolerance, Lappe-Francis Moore, Lightlife Foods, magnesium, Maine Coast Sea Vegetables, Messina-Mark, milk-problems with, miso, Miso Master brand, nutritional yeast, oils, olive oil, omega-3 and omega-6 fatty acids, organic farming, palm oil, phytochemicals, phytoestrogens, prostate cancer, protein, Red Star nutritional yeast, quinoa, saturated fat, sodium, soymilk, soy products, soy sauce, soy supplements and concerns, soy yogurts, spelt, Stonyfield Farm, tahini, tamari, tempeh, trans fats (hydrogenated oils), WholeSoy Company. Near the back are many color coupons for the companies mentioned in the book by name. Address: MPH, RD, Asheville, North Carolina.

4283. Smith, Fiona. 2004. Easy sushi rolls and miso soup. London and New York: Ryland Peters & Small, Inc. 64 p. Illust. (Color photos by Diana Miller). Index. 20 x 20 cm.

• **Summary:** Contents: Serving sushi rolls. Cooking rice. Vegetarian. Fish and seafood. Meat and poultry. Miso soups. Accompaniments.

The page facing each recipe is a full-page color photo. Nori is used to wrap or roll most of sushi. Contains a selection of miso soup recipes that traditionally end a sushi meal: Dashi and combination miso soup. White miso soup with wakame, tofu and lettuce. Red miso soup with pork and noodles. Red miso soup with scallions and tempura croutons.

The vegetarian sushi recipes include: Miso-marinated asparagus roll. Broiled tofu roll. Address: Food writer and food stylist, New Zealand.

4284. Steinkraus, Keith H. ed. 2004. Industrialization of indigenous fermented foods. 2nd ed. Revised and expanded. New York, NY & Basel, Switzerland: Marcel Dekker. xix + 796 p. Illust. Pseudo-Index. 24 cm. Series: Food Science and Technology No. 136. [508 soy ref]

• **Summary:** This book contains the following chapters on soyfoods: 1. Industrialization of fermented soy sauce production centering around Japanese shoyu, by Danji Fukushima. 2. Industrialization of Japanese miso fermentation, by Hideo Ebine. 4. Industrialization of Japanese natto, by Kan Kiuchi and Sugio Watanabe. 11. Industrialization of tempeh fermentation, by Kapti Rahayu Kuswanto. 12. Tempe production in Japan, by Michio Kozaki. It also contains chapters on the industrialization of the production of sake, tapai, African beers, magehu, ogi, gari, Mexican pulque, Thai fish sauce (nam pla), Thai fermented fish and related products, and Myanmar fish paste and sauce.

The final chapter is titled "Industrialization of indigenous fermented food processes: Biotechnological aspects."

Soy-related chapters are also cited separately. Address: Inst. of Food Science, Cornell Univ., Geneva, New York.

4285. Veer, Christine. 2004. Un aliment aux mille vertus: le miso [A food with a thousand virtues: Miso]. Brossard, Quebec, Canada: Pure Simple Nutrition. 46 p. 14 cm. [Fre]* Address: Quebec, Canada.

4286. Zenkoku Miso Kogyo Kyodo Kumiai Rengokai (Japanese National Miso Association). 2004. Mukashi to ima no miso reshipi nihyaku [200 miso recipes, both old and new]. Tokyo: Shokugakukan Ssukuuea (Shoaku-kan Square). 103 p. 26 cm. [Jap]* Address: Japan.

4287. Cadwallader, Keith R.; Klein, Barbara P.; Sullivan, Cheryl L.; Nash, Marilyn; Khanna, Pradeep; Weingartner, Karl E. 2005. Soy for the last minute chef. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 63 p. Illust. No index. 24 cm. Series: Soy in the American Kitchen.

• **Summary:** Contents: Illinois Center for Soy Foods. Bringing soy foods to the American table, the international

way. Why eat soy? Soy foods: Soy flour, soy protein isolate, soymilk, tofu (sidebar: What can you do with half a carton of tofu?), textured vegetable protein, edamame, black soybeans, soy nuts, tempeh, miso, soy analogs. Nutrient information. Purchasing soy foods. Recipes. One recipe per page. Contains many excellent full-page color photos (by David Riecks) of prepared dishes. Photos (p. 57) show: Marilyn Nash, Barbara Klein, Cheryl Sullivan, Megan Puzey, and David Riecks. Address: 1. PhD, Director, Illinois Center for Soy Foods, 170 National Soybean Research Center, 1101 Peabody Dr., Univ. of Illinois, Urbana, IL 61801. Phone: (212) 244-1706 or www.soyfoodsillinois.uiuc.edu.

4288. Pulmuone U.S.A. Inc. 2005. Pulmuone USA Inc. (Website printout-part). [Http://www.pulmuone-usa.com](http://www.pulmuone-usa.com). Printed Feb. 13.

• **Summary:** Contents: Home page. 1. Company. 2. Products. 3. Recipes. 4. Food Library. 5. Community. Atop the home page is the Pulmuone logo and the Soga logo. In large letters below the menu bar: "Welcome to Pulmuone. A plate full of nature." Below that in smaller letters: "Pulmuone brings out the nature to your meals: We at Pulmuone believe in bringing the foods as close to nature's way as possible, instead of making foods. To do so, Pulmuone adheres to the following principles; 1. Use only the very best grade raw materials. 2. Never use any artificial ingredients, flavors such as MSG or preservatives. 3. Maintain immaculate, state-of-the-art manufacturing processes." Below that, under the banner "New products," are color photos of the labels of a new line of Soga products in four flavors: Grilled & Marinated Tofu in Tomato Basil, Santa Fe Chili & Lime, Korean Barbecue, and Ginger Miso. Below that: "Pulmuone donates part of its profit to various environment preservation organizations." A window shows four "Pulmuone downloads: Pulmuone Annual Report 2002, Pulmuone IR, Pulmuone Group IR, Daewoo Security Analyst Report.

Under Company is a "Pulmuone History" (actually chronology). 1981 May-Pulmuone Organic Foods opened to sell organic vegetables from its own farm. 1984 May-Pulmuone Foods Co., Ltd. incorporated. 1984 June-Tofu and Bean Sprout Plant: Yangju, east of Seoul. 1986 Nov. Mineral spring water plant: Chungju, South of Seoul. 1987 May-Pulmuone Kimchi Museum, Seoul. 1988 Dec.-Natural House opened (Natural retail chain): Korea. 1989 Jan.-Pulmuone Food Standards Committee (Establish standards for food formula, ingredients and manufacturing process): Korea.

1990 Jan.-Soybean paste plant [jang] opened in Doan, south of Seoul. 1991 Jan.-Pulmuone U.S.A. Inc. founded. 1991 June-Fresh noodle plant: Chuncheon, northeast of Seoul. 1993 Aug.-Ilsongjung Foods Ltd., Korean-Chinese joint venture: China. 1995 June-Tofu Plant #1: South Gate,

California, USA. 1995 Sept.-ISO 9002 certificate obtained. 1995 Oct. IPO at KASEC. 2002 March-Tofu Plant #2: Tappan, New York, USA. 2002 Oct.-Soga Soy Foods Center (Research & development of soy foods). 2003 Aug. Tofu Plant #3: Fullerton, California, USA. A photo shows Pulmuone's headquarters in Fullerton, California. Caption: Pulmuone was founded in 1981 with 40 employees. It has grown to become a multinational company of 2,000 employees with annual sales of \$450 million. "The secret to success lies in uncompromising commitment to better foods and better life." Address: California.

4289. Narayan, Shoba. 2005. Amuse bouche: Food fight. *Time (Asia)*. Feb. 20.

• **Summary:** In the early 1990s, Singapore was in the avant-garde of the fusion food trend. "Some combinations were daring-such as naturally sweet cod fish and salty miso-but others were mediocre at best."

4290. Hikari Miso Co., Ltd. 2005. Shinshu miso: Hikari Miso (Brochure). 4848-1, Shimosuwa-machi, Suwa-gun, Nagano-ken 393-0041, Japan. 4 p. 30 cm.

• **Summary:** This handsome color brochure has a photo of a bowl of miso soup with tofu and snow peas on the cover. Contents: About the company and its location. Types and classification of miso. How miso is made. Miso's value as a health food.

Hikari Miso was founded in 1932. Their organic miso was introduced in 1988. The Shinshu area is currently known as Nagano prefecture. The company makes light miso (Shinshu miso), dark red miso, and kome-koji miso.

Photos show: (1) The 3 types of miso made by the company. (2) Inside of the automatic koji-making machine. (3) Multi-level automated warehouse. (4) The head office and the Iijima Green Plant. An outline map shows the location of Nagano Prefecture in Japan. Address: Shimosuwa-machi, Suwa-gun, Nagano-ken, Japan. Phone: +81 266-27-8848.

4291. Jacobi, Dana. 2005. 12 best foods cookbook: Over 250 recipes featuring the 12 healthiest foods. Emmaus, Pennsylvania: Rodale Press. 336 p. April. *

• **Summary:** Among these 12 foods rich in nutrients and phytonutrients, the author considers soy the best of all. 28 of the 200 recipes include soyfoods. Address: Food writer, New York, NY.

4292. Cadwallader, Keith R.; Klein, Barbara P.; Khanna, Pradeep; Chen, Dejun; Nash, Marilyn; Puzey, Megan; Sullivan, Cheryl L. 2005. Around the world with soy. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 62 p. Illust. No index. 24 cm. Series: Soy in the American Kitchen.

• **Summary:** Contents: Illinois Center for Soy Foods. Bringing soy foods to the American table, the international way. Why eat soy? Soy foods: Soy flour, soy protein isolate, soymilk, tofu, textured vegetable protein, edamame, black soybeans, soy nuts, tempeh, miso, soy analogs. Nutrient information. Purchasing soy foods. Recipes. One recipe per page. Contains many excellent full-page color photos (by David Riecks) of prepared dishes.

Photos (p. 61) show: Marilyn Nash, Dejun Chen, Megan Puzey, and David Riecks. Address: 1. PhD, Director, Illinois Center for Soy Foods, 170 National Soybean Research Center, 1101 Peabody Dr., Univ. of Illinois, Urbana, IL 61801. Phone: (217) 244-1706 or www.soyfoodsillinois.uiuc.edu.

4293. Beech, Hannah. 2005. The wasted asset: Japan's gender crisis. *Time (Asia)*. Aug. 22.

• **Summary:** Cover story: "Japanese society... venerates the winner dog, the housewife who waits at home with a vat of miso soup for her husband and kids." It still doesn't have much respect for women who are single, childless, happy, affluent, and independent.

4294. Shurtleff, William; Aoyagi, Akiko. 2005. *Doufu zhi shu* [The book of tofu]. Taipei, Taiwan: Persimmon Cultural Enterprise Co., Ltd. viii + 270 p. Sept. 1. Illust. by Akiko Aoyagi. No index. 26 cm. [Chi]

• **Summary:** A very attractive, complex character, Chinese-language edition of *The Book of Tofu* (2nd ed. Ten Speed Press). Address: 1. Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4295. United Soybean Board. 2005. Consumer attitudes about nutrition—Insights into nutrition, health and soyfoods: 12th annual national report. Seattle, Washington. 8 p. Sept.

• **Summary:** This 12th annual nationwide survey, commissioned by USB, was conducted in early 2005 by an independent research firm in Seattle, Washington. Random telephone interviews were completed with 1,000 consumers, "providing a sample that is consistent with the total American population. The study's margin of error is ± 1.9 to 3.1 percentage points and has a confidence interval of 95%."

Contents: Introduction and methodology. Nutritional habits and obesity concerns. Healthy food decisions. Cooking oil impressions. Consumer attitudes about fats. Awareness, usage, and trial of soy products. Occasion preferences for consuming soy (Of consumers who use soy products at least once a month: Dinner 40%, breakfast 27%, lunch 23%, other times 10%). Soyfoods and health: Perceived healthfulness of soy products (78% say healthy, 17% neutral, 5% unhealthy), unaided awareness of health benefits of soy (prevent obesity / promote weight loss 17%, heart health 14%, menopause relief 12%, good protein

source 11%, cancer prevention 10%, reduced risk of osteoporosis 2%). Biotechnology [genetic engineering] in food and agriculture. Restaurants and soy products.

Perceptions of biotech and food: 46% (up from 39% last year) of consumers consider themselves at least somewhat familiar with biotechnology." Of this group, 62% "report a positive perception of its role in food production."

Perceptions of biotech in agriculture: Of that 46% who are at least somewhat familiar with biotechnology: 33% feel that its role within agriculture is to improve the nutritional make-up of crops, 25% don't know enough about biotech to say what role it plays, 13% think that biotech enables farmers to use fewer pesticides, herbicides, and toxins, 13% have a negative perception, other 4%.

Restaurants and soy: A new question added to the survey this year shows that 20% of consumers would order soy products in restaurants if they were available. Types of soy actually ordered in restaurants: Plain white tofu 37%, veggie burger 28%, soymilk 11%, miso 11%, edamame 10%, other products 19%.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com/health_nutrition/pdf/.

4296. Toyama, Michiko. 2005. Nobu: Japan's celebrity chef to the stars. *Time (Asia)*. Oct. 3.

• **Summary:** This is part of a cover story titled "Asia's heroes." Nobu, a humble sushi chef from Saitama, has become one of the biggest names in the restaurant world. Of course it helps that Nobu's business partner is Robert De Niro, whose favorite recipe (made by Nobu) is "black cod with miso."

4297. Barrett, Walter. 2005. Work with soybeans in Central Asia (Interview). *SoyaScan Notes*. Oct. 4 and 6. Conducted by William Shurtleff of Soyfoods Center. Preceded by letter (e-mail) of Oct. 3.

• **Summary:** Walter has worked with soybeans in 4 Central Asian nations: Kazakhstan, Uzbekistan, Turkmenistan, and Tajikistan. Kazakhstan and Georgia have the most history with commercial soybean production, because Soviet planners made it happen there. They designated other Central Asian countries for cotton production, in part because cotton needs less water. Latitude is part of the reason. The climate is also very dry, so that all soybeans (and almost all crops) in these countries must be irrigated, but with river water carried by gravity. Of all the Central Asian countries, Kazakhstan has been the most successful at understanding a market economy and making it work.

Walter has many contacts in these countries. He is willing to help Shurtleff try to get a better history of soybeans in each of these countries. First, Shurtleff will send Walter an e-mail containing a table showing the dates he has for the earliest document seen showing soybeans in

each in each country, and soybean cultivation in each country. Then the earliest date seen for soybean cultivation in each country. Walter will forward this e-mail to an intermediary (Winrock International or Mercy Corps), who will then mail or phone or hand deliver the message to the network of indigenous researchers Walter has developed over the years. The message will encourage them to contact other researchers who might be interested; then Walter will wait for replies.

Walter believes that Korean communities in at least four of these countries (Turkmenistan, Uzbekistan, southern Kazakhstan, and Tajikistan) were growing soybeans for their own use at an early date—probably since the early 1900s and using them almost entirely for food—such as tofu, soy sprouts, Korean-style miso and soy sauce, green vegetable soybeans, etc. The Koreans raise chickens, for example, but they forage for food and are not fed soybeans. Walter has no idea when, or, why, or how these many Korean communities came to be established in Central Asia. He has no idea where the varieties they grow came from. These Korean communities are all found within a horizontal oval that cuts across national boundaries, and includes the cities of Almaty [Alma-Ata] (in southwest Kazakhstan), Tashkent [Tashkent] (capital of Kyrgyzstan), Dushanbe (capital of Tajikistan), and Ashgabat (capital of Turkmenistan). In this area are numerous Korean restaurants where Walter has eaten; but he has no idea how many Koreans live in this area. Most individual Korean communities grew only one variety, but each Korean community had its own variety. By contrast, there are not many Chinese communities in these areas.

Walter expects his next trip to Central Asia to be in the spring of 2006—probably Uzbekistan and possibly Turkmenistan or Tajikistan. He is given drivers and interpreters by the NGO sponsoring his trip. One of the ongoing problems he faces is the limited abilities of interpreters; communication is often difficult, and it is hard to pursue agricultural or academic questions with farmers. It is less difficult with educated researchers or academicians (best is Tajikistan, followed by Turkmenistan—who might help find others). The researchers in these countries don't talk much with each other, either within a country or among countries. They have few opportunities to travel, and little access to the Internet or e-mail. This is because of government restrictions, difficulty of getting visas or money, etc. Researchers are lucky if they have a working computer, but most have a telephone and some have a cell-phone.

Of all Central Asian countries, Kazakhstan is the one in which the soybean is the most important as a commercial crop—by far. They probably have at least several thousand hectares planted to soybeans. The soybeans in Kazakhstan are run through an extruder (extrusion cooker) to make soybean oil and meal. These same extruders are also used to

process cottonseed. Soybeans are grown in Central Asia largely because of the demand for meal by the local poultry industry for use in chicken feeds. Poultry is the driving force, and Central Asia is a “protein-poor” region. Walter's main reason for being there is because of poultry and (to a lesser extent) livestock; it is to help educate them about the soybean, its value for producing soybean meal and oil, and about the importance of protein. He helps farmers to grow soybeans and to develop markets for their beans. Actually, there is a ready-made market from poultry growers—who now have to pay a lot of freight to import their soybeans from Kazakhstan, Iran, Turkey, or India. The key is for Walter to serve as the bridge—to help bring the poultry growers and the potential soybean farmers together, to discover that they have a common interest, and then to work out agreements.

NGOs do lots of impact studies; they want their volunteers to work on projects that will have economic impact. They believe that increasing poultry production will have a positive impact on the economy and the people. The oil is also appreciated, and refined using modern technology within each country for use as a high-quality edible oil, sold in bottles at retail stores. Kazakhstan is about one-half the size of the United States, and is quite a progressive country with a market economy, fairly advanced education and technology. Soybeans are grown mostly in the very south. They were major crop during Soviet times (Russia was a major market for the oil and meal), but after Kazakhstan became independent in 1990, soybean production fell off to near zero. The economies of Central Asian countries plunged at about the same time (1989-91). They are now slowing getting back to where they once were.

The second most important country for soybeans (a very distant second, with maybe 300-500 hectares planted to soybeans) is the Republic of Georgia, where the western half is quite moist and the eastern half is very dry. They have a long history of growing soybeans. Walter knows of one company there that is processing soybeans using an extrusion cooker (similar to that made by Insta-Pro).

In third place might be Uzbekistan, followed by Turkmenistan, and Tajikistan—but all with only about several hundred hectares in soybeans.

Walter believes that soybeans could become a valuable double crop in Central Asia, planted after the wheat harvest in June. That would earn farmers more income, improve the soil, and break various insect and disease cycles. They need a legume in the rotation. The government does not help. They seem interested only in short term profit, keeping the status quo, and staying in power, not in innovation or long-term thinking.

In Tajikistan, he met a village farmer, Mr. Mahmaddullo, who had the ability to build machines. He already had a small business making wheat flour using two motor-powered millstones. He worked with Walter to build a

revolving soybean drum roaster; the outside was heated by natural-gas flames. After roasting a batch of about 20-25 kg of soybeans, he ground them into flour.

In Turkmenistan, Dr. Ashraf spent quite a bit of time working with a Korean community in the town of Dashoguz in making tofu. She also worked a lot with Peace Corps Volunteers (PCVs) in that same town; one of the PCVs was a Korean-American. Walter has not heard of any TVP being made in Central Asia; if its is made, it must be in very small quantity. In Uzbekistan, technologically the most developed, soybeans are being grown—often spread by volunteers. Address: 2804 Trent Drive, Fort Wayne, Indiana 46815. Phone: 260-484-7493.

4298. Shurtleff, William; Aoyagi, Akiko. 2005. *Wei ceng zhi shu* [The book of miso]. Taipei, Taiwan: Persimmon Cultural Enterprise Co., Ltd. 280 p. Nov. 14. Illust. by Akiko Aoyagi. No index. 26 cm. [Chi]

• **Summary:** A very attractive, complex character, Chinese-language edition of *The Book of Miso*. Address: 1. Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

4299. Richmond, Akasha. 2005. *Hollywood dish: More than 150 delicious, healthy recipes from Hollywood's Chef to the Stars*. New York, NY: Avery—A member of the Penguin Group (USA) Inc. xi + 310 p. Illust. Index. 25 x 20 cm. [125 ref]

• **Summary:** One of the most original and interesting cookbooks seen in decades. This book, originally titled *Healthy Hollywood*, is much more than just a collection of superb recipes and stories about Hollywood celebrities and glitterati. In carefully researched and well-written sidebars, it documents the history of health foods in Hollywood and southern California. The introduction to each chapter tells the history of that type of food, and every recipe has a long and interesting historical headnote. The acknowledgments show vividly Chef Akasha's high and wide circle of Hollywood friends. The introduction—"The Road to Hollywood" tells the story of how Akasha got interested in and researched this subject. History is woven into every page of this book—in the most palatable way. In short, this is a cookbook with a remarkable tale to tell—one to read and study—as well as one to cook from.

Sidebars and illustrations: (1): "The stars and the Hollywood Diet"—Sue Carol (lovely future wife of Alan Ladd) on the cover of *Motion Picture* magazine, Oct. 1929. (2) Mildred Lager (1908-1960). (3) Harry Chandler (1864-1944). (4) Granola (Layton Gentry, Adelle Davis, Dorothea Van Gundy Jones). (5) Photo of silent film star Anita King eating Sun Maid Raisin Pie, 1916. (6) Adelle Davis (1904-1974). (7) Clarke Irvine, 1892-1975. (8) Photo of Radiant Radish health food store, owned by Beach Boy Brian Wilson, Los Angeles, 1969. (9) Otto Carque, 1867-1935, with a photo of his health wagon, around 1912. (10)

Gayelord Hauser (1895-1984). (11) "Nature Boy"—Bill Pester and the 1948 hit song by Eden Ahbez. (12) The Ashram—Hollywood restaurant founded by Anne-Marie Bennstrom. (13) The Hollywood diet, with a photo of page 1 of the "18-Day Diet" from *Motion Picture* magazine, Oct. 1929. The sidebar begins: "The first best-selling diet book in America, *Diet and Health, with a Key to the Calories*, was written by Los Angeles-based Dr. Lulu Hunt Peters in 1918, and sold over 2 million copies. The book introduced the concept of counting calories." (14) Alan Hooker (1902-1993). The grandfather of California cuisine, he opened the Ranch House restaurant in 1956 in Ojai, California. (15) Gloria Swanson—Hollywood's Green Goddess. She "was the highest paid and most popular, influential star of the 1920s." (16) Jim Baker (1922-1975). A pioneering organic restaurateur, he Opened the Aware Inn in 1957, then the Source restaurant in 1969. (17) Raw, raw, raw (Arnold Ehret, Vera and John Richter, and raw foods). (18) Photo of silent film star Mary Pickford drinking orange juice made with Sunkist fruit and juicer. (19) The godfather of fitness—Jack LaLanne. Master chef Danny Kaye (1913-1987). (20) The Farmer's Market in Los Angeles, started in 1934. (21) Paul Bragg (1881-1976), with photo of Rita Hayworth on the cover of his *Health Builder* magazine. (22) Books and cooks—"150 Recipes of the Stars" (1928), Helen Evans Brown. (23) Health foods—Dr. John Harvey Kellogg, the rise of health food sections in the late 1800s in L.A. department stores, the rise of health food stores, Sandy Gooch. (24) Mae West (1893-1980). *Gypsy Boots* (1914-2004). Photo of Boots and Paul Bragg. (25) Food and film. (25) Photo of Donna Reed and Paul Bragg, sometime in the 1950s. (26) Bernarr Macfadden (1868-1955). (27) Celebrity stew and Leo Pearlstein. (28) Vegetables, fruits, and nuts (incl. Frieda Caplan, Albert's Organics). (28) Rancho La Puerta and the Golden Door. Photo of young Burt Lancaster baking bread at La Puerta. (29) Fred Waring (1900-1984), the blender, and smoothies. (30) Hain Pure Foods. "Harold Hain opened his first health food store in downtown Los Angeles on October 17, 1926." (31) Swamis and yogis. Paramahansa Yogananda arrived in L.A. in 1925; he advocated a healthy vegetarian diet, including in his magazine *East West*, first issued in 1926. On 8 April 1951 he opened SRF India Café at his India House compound on Sunset Boulevard. "Yogi Bhajan (1930-2004) came to Los Angeles in 1969, bringing the teachings of Kundalini Yoga and his own unique style of Indian and Ayurvedic cooking. In 1974 his students opened Golden Temple Conscious Cookery in Los Angeles. I [Akasha] was a cook there from 1979 to 1984..."

Soyfoods are used in recipes (and recipe titles) throughout this book: Edamame of fresh green soybeans (used in 2 recipes), miso (1 recipe), soymilk (many, especially in place of milk in desserts, incl. "Chocolate Jack Daniel's soy gelato" and "Soya chocolate" milk), soy flour

(1, Bill Baker's bread), soybeans (whole, 1, "Soybean casserole), tofu (10), and tempeh (4).

Also discusses: Sophie and Harry Cubbison (p. 47), El Molino Mills (p. 106). Early veggie burgers (p. 106). Silk soy milk and Steve Demos (p. 266).

The recipes in this book are largely vegetarian (including 17 vegetarian main dishes), all call for organically grown ingredients, and many are dairy-free (using soy milk instead of cow's milk). However: Beef (used in 2 recipes, incl. "Filet mignon Japanese"). Pork (used in 1 recipe, "Citrus roasted pork chops with rosemary potatoes"). Chicken (used in 6 recipes, incl. "Endive petals with curried chicken salad"). Turkey and duck (3 recipes). Fish (many recipes as for cod, halibut, salmon, whitefish). Shellfish (crab, scallops, shrimp).

Talk with Akasha Richmond, who calls. 2005. Dec. 7. Her favorite parts of the book are: The smoothie story. Otto Carque. Gloria Swanson. Yogis and Swamis, Granola. She is very happy with everything about the way the book and its promotion turned out ("It looks great")—except she wishes she could have included more photos. Address: Los Angeles, California.

4300. Andoh, Elizabeth. 2005. Washoku: Recipes from the Japanese home kitchen. Berkeley, California: Ten Speed Press. vii + 320 p. Illust. (many color). Index. 25 x 25 cm. • **Summary:** A beautiful book. Contains a section titled "Tofu and eggs" (p. 268-93), plus many recipes that use miso, shoyu, edamame, kinako, and amazake. Address: Japan.

4301. Fu, Peimei. 2005. Peimei shi pu. Di er ce [Pei Mei's Chinese cook book. Vol. II]. Taipei, Taiwan: Ju zi wen hua shi ye you xian gong si. 386 p. Illust. (color). No index. 22 cm. [Chi; Eng]

• **Summary:** Fu Pei Mei is considered by many Chinese to be one of the best Chinese chefs alive today. This book, which first appeared in July 1974, contains 110 recipes categorized by ingredients under 11 separate headings, such as chicken, duck, pork, beef, fish, shrimp and seafood. The majority of the recipes in this book are based on meat, poultry, fish or eggs (animal products). Contents: Foreword. Introduction. About the Chinese menu. About Chinese condiments and spices: Glossary includes: 1. Soysauce (made from fermented soybeans, comes in light, medium, and dark colors. Kikkoman is a good example of medium). 9. Hot bean paste ("Made from red hot peppers, flour, soybeans, salt, and other condiments"). 11. MSG. 18. Bean curd. 19. Dried bean curd sheets (skin). 20. Bean sprouts (mung or soy). 21. Bean pastes ("Thick brown pastes prepared from soy bean flour and flavorings. Sweet types have sugar added and resemble pureed dates"). 22. Sweet red bean paste ("Made from red [azuki] beans. Almost all Chinese desserts use this for the filling. Mash the cooked

beans in a strainer. The paste will come out leaving the skin"). Contents of recipes. Abbreviations, weights & measures. Contents of color photos. Index of recipes Vol. I. English-Chinese list of foodstuffs. About the author. Copyright.

Seating: The guest of honor sits in the seat at the inner side of the room, facing the entrance, while the seats on the serving side are for the host and hostess. The guest of honor always sits facing the host (p. 10).

After the "abbreviations" page are 4 full-page numbered color photos of Chinese tableware, vegetables, special ingredients, and Chinese individual place setting used in this book, and the numbered name of each item, in both Chinese and English, facing the photo. Among the vegetables is: 27. Fresh soybean (*maodou*). Among the special ingredients is: 2. Beancurd sheet (*doufu-pi*). 14. Bean curd threads (*gansi*). 21. Bean curd (*doufu*). 26. Fermented black [soy] beans.

For every recipe there is a large (often full-page) color photo with the recipe name in Chinese and English, and the page number of the recipe. All the recipe photos come in a block before the recipes themselves. Each Chinese recipe is on the left page of the 2-page spread, and its English counterpart is on the right page. The ingredients for each recipe are in two rows at the top, in exactly the same relative place, to make finding the Chinese characters easy.

Recipes include: Braised soysauce duck (p. 157). Spareribs with fermented black beans (*Shih chih p'ai ku*, p. 177). Shredded pork with bean sauce (*Ching chiang jou szu*, with 2 tablespoons "sweet bean paste," *t'ien mien chiang* [pinyin: *tian mian jiang*], and soysauce, p. 186-87). Diced fish with fermented black beans (*Shih chih yü ch'iu*, p. 216-17). Steamed fish with fermented black beans and hot pepper (*Tou shih la chiao cheng yü*, with 2 tablespoons *dou shih* / fermented dried black beans," p. 226-27).

The chapter titled "Egg and bean curd" (p. 256-75) contains 10 recipes. Examples of the descriptions of bean curd in the ingredients listing are: "6 squares bean curd (3" x 3")." "8 pcs. [pieces] bean curd (1" x 2" x 1")." "4 pcs. tender bean curd (3" x 3")." "10 oz. thin dried bean curd strips" (*gansi*). On p. 276 is a half-page description of bean curd and related products.

More recipes: Assorted vegetarian dish (*Lo han chai*, with "1 bean curd stick," *fu chu / fuzhu* [bamboo yuba], p. 289). Spinach and bean curd soup (*Po ts'ai tou fu keng*, p. 317). Chicken, ham and shrimp with bean curd shreds soup (*San hsien kan szu t'ang*, p. 319). Yu-T'iau ([crullers] p. 335). Noodles with minced pork and bean sauce (*Pei fan cha chiang mien*, with *maodou* / green beans, p. 339). Fried taro dumplings with sweet bean filling (*Tou sha yü tsao*, with "sweet [azuki] bean paste," p. 349).

A good portrait photo of Miss Fu appears on p. 371. Taiwan's popular T.V. chef, she "is also a producer and director. She has demonstrated over 600 different recipes

from 1964 to the present. In 1955 Pei Mei's Chinese Cooking Institute was founded, In 1962 Taiwan's first television station was established. She accepted an offer to teach a demonstration cooking program once a week, starting in 1967. In 1969 she wrote her first volume, *Pei Mei's Chinese Cookbook*. The dishes were divided according to the geographical areas of China—North, East, South, and West. In 1977 Miss Fu began a weekly program on Japanese television.

The copyright page states that this book was published in the 80th year, 9th month of the Chinese calendar. Address: Cooking teacher, Taipei, Taiwan.

4302. Fu, Peimei. 2005. Peimei shi pu. Di san ce [Pei Mei's Chinese cook book. Vol. III]. Taipei, Taiwan: Ju zi wen hua shi ye you xian gong si. 388 p. Illust. (color). 22 cm. [Chi; Eng]

• **Summary:** Chinese cooking can be divided clearly into five major schools or branches: Shanghainese, Cantonese, Szechuanese, Peking-style, and Hunanese. These correspond roughly to Eastern, Southern, Western, Northern, and Central China. This 3rd volume, containing 130 recipes, consists of nine complete formal Chinese banquet dinners from different provinces: Kiangche (Shanghai style), Canton, Szuchuan [Szechwan], Peiping, Hunan, Fuk-ien, Taiwan, Vegetarian style, and Buffet dinner.

The number of special ingredients in the numbered color photo has been increased to 47 from 32. Interesting new ingredients include: 29. Sweet red bean paste [azuki]. 31. Green sea weed. 32. Laver [sheets of nori]. 34. Fresh bean curd skin. 35. Dried bean stick [dried bamboo yuba, fuzhu]. 36. Bean curd sheets. 37. Bean curd, dried. 39. Wheat gluten. 40. Steamed wheat gluten. 41. Fried gluten puff.

The basic format of this book is quite similar to that of Vol. II, but the color photos of recipes are arranged together in a group of about 12 pages at the beginning of each of the nine sections, and quite a few pages have two recipes per page.

Recipes include: Sauteed black mushrooms with soy sauce (p. 35). Stir-fried crab with bean sauce (*Chiang pao ch'ing shieh*, with 1 tablespoon "sweet soy bean paste" / *t'ien mien chiang* / *tian mian jiang*, p. 46-47). Stewed beef with hot bean sauce (*Yu hsiang nyu nan*, with 1 tablespoon "hot bean paste," (*la dou ban jiang*), p. 122-23).

The introduction to the section on vegetarian dishes notes: "Centuries ago in China, devout Buddhists and Taoists followed a strictly vegetarian diet, in keeping with their religious sanctions against the killing of sentient beings." The recipes in this section call for: Soy sauce (almost all). Soy bean soup stock (p. 313). Wheat gluten sticks (*su chang*) (each of which is made by rolling up a big sheet of wheat gluten, p. 315). Pieces of steamed wheat gluten and Pressed bean curd (*dou fu gan*) (p. 317). Cooked

green vegetable soybeans (*shu mao dou*, p. 323). Sheets of bean curd skin, fresh or dried [*yuba*] (*toufu p'i* / *dou fu pi*, p. 323, 325, 331). Shredded dried bean curd (p. 327). Bean curd (p. 328).

More recipes: Braised beef with brown sauce (with 1 tablespoon "hot bean paste" (*la dou ban jiang*) and ½ tablespoon "soybean paste" (*tian mian jiang*), p. 360-61). Sautéed bean curd balls (p. 369). Two good portrait photos of Fu Pei Mei appear on page 296. Address: Cooking teacher, Taipei, Taiwan.

4303. Hellmiss, Margot. 2005. Mit Soja durch die Wechseljahre [Using soy through the menopause years]. Munich, Germany: Suedwest Verlag. 96 p. Illust. (color). Index. 20 x 18 cm. [Ger]

• **Summary:** An attractive book, with many fine color photos on glossy paper. Contents: Soybeans—Tradition and history (Healing plant from China): Productive source of protein, tofu—quark with a longer tradition, triumphal procession around the world, great economic significance, soya and genetic engineering. Fundamental changes of the menopause years (What happens during these years?): Hormonal changes, the right attitude helps, the new understanding of women, many hormones influence the body, men also experience menopause, questionable preparations, Hormone Replacement Therapy—Pros and cons. Natural help from soy isoflavones (remarkable phytoestrogens): The active agent of plant hormones, the effectiveness of isoflavones, natural SERMs, safeguard against osteoporosis, estrogen protects the circulatory system, soy hormones as free-radical catchers, the end of hot flashes, strong powers of resistance and smooth skin, isoflavones will take good care of you.

Soyfoods that contain isoflavones (A great variety): Whole dry soybeans, soymilk, tofu, soy oil, soy flour (*Sojamehl*), soy flakes (*Sojaflocken*), soy bran (*Sojakleie*), tempeh, natto, soy granules, soy sauce, shoyu and tamari, miso, lignans. Soybeans: A powerful package for your health (Plant protein as an alternative): Indispensable protein, lecithin, minerals, B vitamins for strong nerves, vitamin E—the fountain of youth. Recipes for enjoying soya (Basic recipes): Hors d'oeuvres and salads, soups, pasta, main dishes, sauces, dips, and bread spreads, mueslis, desserts, and backed goods, beverages.

4304. Ito, Etsuo; Chinen, Michiko. 2005. Kantan yakuzen miso no tsukurikata: gan ni naranai Okinawa gohan [How to make easy medicinal foods using miso: Okinawan dishes prevent cancer]. Tokyo: Gendai Shorin. 102 p. 21 cm. [Jap]*
Address: Japan.

4305. Khachatourians, George G.; Arora, Dilip P.; Bera, Randy M. eds. 2005. Applied mycology and biotechnology.

Vol. 5: Genes and genomics. Amsterdam, New York: Elsevier. 428 p. See p. 163. *

• **Summary:** Contents: Fermented soybean products: Korean kanjang and doenjang: Page 162: The ripening of *kanjang* mash in the brine is ended in 1-2 months... Fig. 12 is a combination and flowsheet showing the process of making Korean kanjang and doenjang.

4306. Mullin, W.J. 2005. Miso as a functional food. In: John Shi, C.-T. Ho, and F. Shahidi. 2005. Asian Functional Foods. Boca Raton, Florida: CRC Press. xxi + 647 p. See p. 537-53. Chap. 19. [34 ref]

• **Summary:** Contents: Introduction. Raw materials: Soybeans (preferred qualities), rice, barley, salt, water, [yeast and] bacterial cultures (halophilic yeasts: *Zygosaccharomyces rouxii*, *Candida versalitis*; lactic-acid producing bacteria: *Tetragenococcus halophilus*), koji starter (*tane-koji*). Processing technology: Organoleptic properties. Nutritional properties. Standards and regulations.

Of the macronutrients in soybeans, the carbohydrate content is the most important, particularly the level of oligosaccharides.

Page 242: Traditionally, making miso was a family operation that took place after the fall harvest; the food was preserved in times of plenty, which were followed by times of uncertainty in the food supply.

Miso cooperatives: The system of miso cooperatives is very well organized. Local cooperatives throughout Japan are organized into 51 unions, and these are grouped into eight national blocs based on geographical location. The blocs have joined to form a national organization called the Japan Federation of Miso Manufacturers Cooperatives (JFMMC) [*Zenkoku Miso Kogyo Kyodo Kumiai Rengokai*], with headquarters in Tokyo. JFMMC represents about 1,400 miso manufacturers of all sizes. All miso makers are eligible to become members of the local organization, and the vast majority take advantage of the membership, which can provide many benefits. "The JFMMC operates the Central Miso Research Institute, which conducts basic research, tests new domestic and imported varieties, troubleshoots processing problems, and prepares and distributes cultures for fermentation." The JFMMC is very active in public relations and publicity; it also sponsors research into the health benefits and nutritional value of miso. It publishes an annual report which includes detailed statistics on miso production in Japan, as well as discoveries based on new miso research.

Annual miso competitions are held at the local and national level to keep miso in the spotlight; they do much to maintain and improve the quality of miso. Most take place in the fall, with the national JFMMC competition held last of all in early November in Tokyo—a climax of the miso production year. "The competitions are keenly contested with several hundred entries and are widely reported in the

national and local media." "Winning a class can be of great promotional benefit to the winner." New uses for miso are also on display with leading chefs preparing dishes that are offered to members of the JFMMC, competition participants, and to the media. Address: Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada.

4307. Nagata, Juzo. 2005. Daredemo dekiru tezukuri miso: hajimete demo dekiru gokujô no aji [Handmade miso that anyone can make at home: You can make the very best flavor even if its your first try]. Tokyo: Nosan Gyoson Bunka Kyokai. 142 p. 21 cm. [Jap]*
Address: Japan.

4308. Park, Kun-Young; Jung, Keun-Ok. 2005. Fermented soybean products as functional foods: Functional properties of doenjang (fermented soybean paste). In: John Shi, C.-T. Ho, and F. Shahidi. 2005. Asian Functional Foods. Boca Raton, Florida: CRC Press. xxi + 647 p. See p. 555-96. Chap. 20. [121 ref]

• **Summary:** Contents: Introduction. History of Korean soybean fermented foods. Manufacturing methods and characteristics of doenjang fermentation. Functional properties of doenjang: Nutritional and functional components in soybean and doenjang, safety of doenjang, antimutagenic activity of doenjang. Anticancer effect of doenjang. Increased chemopreventive effect of doenjang: Antioxidant effects, reduced cardiovascular diseases (fibrinolytic effect {as in chungkookjang and natto which secrete strong fibrinolytic enzymes}, antihypertensive effects, reduced serum cholesterol level), other possible functions of doenjang. Conclusion.

Doenjang is "Korean fermented soy paste" and kanjang is Korean-style fermented soy sauce that is obtained by filtering off the liquid from doenjang. "Historically soybeans and processed soybean foods have been the main protein sources in the Korean diet" (p. 555). "The medicinal functions of doenjang were first described in the *Dongeuibogam* [*Dongui Bogam* (RR), *Tongui Pogam* (MR)] (1613 A.D.), which was a popular traditional Korean medical text" [no citation given].

The section titled "History of Korean soybean fermented foods" contains what promise to be a number references to early and possibly very interesting documents that mention soybeans and soyfoods in Korea. Yet the authors fail to cite any of them properly, so for the time being, we must accept their account of what the documents say. The problems are: (1) None of these documents (except one, Ref. #46) is cited in the long list of references at the end of the chapter. (2) The title of all these documents is given only in Korean, even though at least two should have Chinese titles; one of those two (described as "The Chinese agricultural technology book, *Jeminyosul* {A.D. 530 to 550} written by a governor, Maaeunsa,...") is actually the famous *Qimin*

Yaoshu, by Jia Sixie. (3) We are never told in what language the original document referred to is written. (4) The page number(s) on which the ancient, important information appears is not given for any of these documents. (5) For some documents no date is given, whereas for others no author is given. (6) It is not clear what names were used to refer to each of the various soyfoods in the original documents. (7) The authors never tell us whether they examined the original document, or read a contemporary version, or simply got the information from a secondary source.

For example (all dates are A.D.): 99—It has been reported [by what document?] that soybeans were cultivated—Where were they cultivated?

530-550—The *Jeminyosul [Quimin Yaoshu]* states (in Chinese) that shi [soy nuggets], soybeans fermented with bacteria, in Korea were disseminated to China and Japan.

683 Feb.—An article [no title given] by King Sinmoon, that appeared in the 3rd year of his reign (during the Silla dynasty), mentioned the words *jang* (mold-fermented soybeans) and *shi* (bacteria-fermented soybeans).

701—*Daeboyulryong* mentioned the words *jang*, *shi*, and *maljang*, which referred to soybean products.

739—*Jungchang Wonmooseu* also mentioned the word *maljang*.

Donga (no date given), which was written by Shinjungbaesuk (is that the writer's real name?) in Japan, "indicated that *maljang* was imported from Korye (the old name of Korea);" it was renamed "miso" (Source: Ref. #46—35th Chronicle of Korea Soy Sauce Industrial Cooperative. 1997. Seoul. p. 27-32). Korean *jang* is said to have developed into traditional Japanese miso using *meju* made of soybeans and rice instead of *maljang*, which was made from soybeans only.

918-1392—During the Korye [Goryeo] dynasty, [in Korea] the name "*maljang*" changed to "*maejyo*" and then to "*meju*" [meaning soybean koji in the shape of balls or cones]; it was soaked in brine in a clay pot and ripened [then filtered]. The liquid was called *kanjang* (soy sauce) and the solid sediment was called *doenjang* (soy paste).

1613—*Donguebogam* [see above], written by Hurjun, described how to make medicinal *doenjang* using soybeans and how to fix soured *doenjang*.

1760—*Jungbosan Limkyunge*, written by Yojungim, "introduced 45 different processing methods for soybean foods, describing how many days fermentation for *jang*, selection of water, salt quality, how to handle the pottery, fixing *jang* with an off-taste, etc."

1790 ca.—*Kyuhap Chongseo*, written by Madam Lee (lived 1759-1824) described the proper methods for making the various types of *jang* in great detail.

1930 ca.—Commercial production of fermented soybean products ("jang" in Korean) started in Japanese-built *jang*

factories in Korea during the occupation (1909-1945) to supply soybean products for the Japanese in Japan.

1945—After gaining independence from Japan, Koreans took over the factories. Since the Korean war (1950-1953) military personnel and people living in large cities have mostly consumed commercial fermented soybean products, whereas families living in rural areas still prepare their own. Address: Pusan National University, Busan, Korea.

4309. Shi, John; Ho, Chi-Tang; Shahidi, Fereidoon. 2005. *Asian functional foods*. Boca Raton, Florida: CRC Press. xxi + 647 p. Illust. Index. 24 cm. Series: Nutraceutical Science and Technology.

• **Summary:** Contents: Preface. About the editors. Series introduction. Contributors. Table of contents. 1. Functional foods and their impact on nutrition and health: Opportunities in the Asia Pacific... Contains two chapters on fermented soyfoods (Chap. 19, Miso, and Chap. 20, Doenjang) which are cited separately.

The Preface begins (p. v): "Health and 'healing' foods have a long history in Asian cultures." Asians such as the Chinese and Indians have long known that food and medicine come from the same source; they can treat illnesses and build a healthy life. Since ancient times, Chinese have compiled a remarkable amount of information about the materia medica, the use of natural substances—plants, animals, and chemical—to treat illness.

Kudzu (*Pueraria lobata, ge geng*), one of the earliest medicinal plants used in traditional Chinese herbal medicine, is discussed on pages 83-86.

In chapter 7 titled "Traditional Functional Foods in Korea," the section on "Fermented soybean foods" (p. 165-66) states that typical daily per capita consumption of these foods are: Soy sauce 20 ml, soy paste 20 gm, and hot soy paste 10 gm. In recent years there has been a decrease in soy intake due to increased use of Western seasonings such as mayonnaise, tomato ketchup, meat sauces, etc.

In Chapter 8, titled "Evolution of Korean dietary culture and health food concepts," the section on "Food as medicine" begins (p. 210): In traditional Korean culture, food was regarded as the basic source of health. It was believed that all diseases could be cured by foods. Korean knowledge of the medicinal effects of foods came, not through the sciences of nutrition, medicine, chemistry, or physiology, but through long human experience. Moreover, a key practice and discipline has long been to eat only when hungry, and not to overeat. The enormous size of the health food market in Korea today reflects the country's long tradition of 'food as medicine.'"

Page 229: "Micronutrients." Asian fish sauces are good sources of vitamin B-12 (cobalamine) because they are made from animal protein. Fish sauce from Thailand contains 1.91 mcg (micrograms) per 100 ml. This amount protects the Thai population from megaloblastic anemia

caused by vitamin B-12 deficiency. The estimated average requirement for vitamin B-12 is only 2 mcg per day. However fermented soybean sauce contains very little (0.14 mcg per 100 ml); the small amount present is attributed to microbial synthesis.

Page 230: “The high salt problem.” Japanese men rank highest in daily per capita sodium intake at 5.4 gm; the United States, Thailand, and New Zealand each average about 3.9 gm.—72% as much. Some cultures consume as little as 0.69 gm / day.

Pages 248-49: “Future potential for fish sauce.” It is unclear whether fish sauce was first developed in Asia or Europe. But while it has vanished in Europe, it has become a thriving industry in Southeast Asia—perhaps because the extensive use of bland-tasting rice requires a salty and tasty protein-rich seasoning. Several species of anchovy are the preferred raw material for fish sauce. Some say that soy sauce was first developed in Japan. Address: 1. Research Scientist, Federal Dep. of Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada; 2. Rutgers Univ., Rutgers, New Jersey; 3. Memorial Univ. of Newfoundland, St. John’s, Newfoundland, Canada.

4310. Shipp, Steve. comp. 2005. North Korea in quotation: A worldwide dictionary, 1948-2004. Jefferson, North Carolina: McFarland & Co., Inc. v + 384 p. See p. 149. 25 cm. [1 soy ref]

• **Summary:** The chapter on “Kim Il Sung” states (p. 149) that he can be found in every village, town, and city of North Korea. He is everywhere!—even “simply averring (in the National Folk Museum) that ‘Koreans can hardly be Korean if they don’t eat *toenjang*’ (fermented bean paste).”

Quoted from: Cummings, Bruce. 1997. *Korea’s Place in the Sun: A Modern History* (Observation in 1997).

4311. Gandhi, A.P. 2006. The ‘greater bean’: Scientists continue to find new food and industrial uses for soybeans. *World Grain* 24(2):59-62. Feb.

• **Summary:** About 70% of world soybean production is crushed to make oil and meal, 20% is used directly for food, and the rest for seeds. Soybean meal used for human food “must be devoid of residual solvents that may cause various psychological disorders in humans. The International Standard Organization (ISO) recommends a maximum level of 50 parts per million (ppm) of residual hexane, which is used in the solvent extraction process.”

A pie chart shows world soybean production in 2004.

4312. **Product Name:** Tempeh (bulk for Restaurants and Institutions).

Manufacturer’s Name: Arto Moro Inc.

Manufacturer’s Address: 125 N.W. 23rd Ave. #17, Gainesville, FL 32601. Phone: 352-226-5561..

Date of Introduction: 2006. March.

Ingredients: Organic soybeans, water, tempeh culture (*Rhizopus oligosporus*).

Wt/Vol., Packaging, Price: Frozen: 5 x 4 lb cakes, or 10 x 2 lb cakes (20 lb per package).

New Product–Documentation: Talk with Sam Guy. 2008. Dec. 29. His son is Art and the tempeh business was Art’s idea. First Art bought a microbrewery, then a small restaurant in the early 1990s. He started making tempeh for the restaurant. The tempeh did well, so he sold the restaurant (which is still in business) to focus on the tempeh. For the first 3-4 months they sold their tempeh only locally, in Gainesville; then they expanded to Jacksonville and Tallahassee. His son delivers his tempeh locally on a bicycle—which has attracted media attention. The business provides detailed nutritional, health inspection, and microbiological info on its product; this as made it possible to attract large customers, such as Aramark food service, a university cafeteria, Mexican restaurants, and vegetarian restaurants. Their tempeh is frozen but not pasteurized. Sam’s two favorite ways of serving tempeh: (1) Saute squares in olive oil with miso. (2) Little chunks of crispy fried tempeh in a salad with Mandarin orange pieces, cranberries, walnuts, and Veganaise.

Artie’s Tempeh Burgers color postcard. The front has a bold heading with a large photo of the burger and a rayed sun in the background. Text: “Artie’s Tempeh is made the traditional way, using a slow fermentation method unlike any other commercial varieties.” On the rear is a “Nutritional facts” panel, the company address (factory) and phone number, the ingredients, and round logo, and “12 oz. A vegan food.”

4313. Source Foods. 2006. Source Foods: Organic miso makers (Website printout—part). [Http://www.miso.co.uk](http://www.miso.co.uk). Printed May 12. [Eng]

• **Summary:** Home: New products. Miso products. How miso is made. Recipes. Info link. Various links.

Home: Source Foods started making Miso Mustard & Wild Horseradish in 1988 and in 1991 the first production of Miso began a whole new way of miso. Organic ingredients have always been a priority. Reducing the sea salt content a mission. We use whole brown rice, soy and also use local ingredients e.g., Field bean & Barley Miso, Hemp Miso, and soon Organic Soy beans from UK. We Do Not Use Genetically Manipulated Crops as Ingredients.

New products: Instant Miso Soup. Oh So Organic Yummo Sesame Miso (240 gm). Low Salt Organic Miso (Sweet Brown Rice & Soy, Mellow Brown Rice & Soy). Herbs of the Sea is a mix of nori, dulse, and sea lettuce [not a type of miso].

Miso products (Organic fresh live miso, handmade in Wales): Misos are sold in 213g/240g yogurt style pots with clip lid for retail and bulk 500g upwards packed in simple plain plastic bag. Organic Solo Low Sodium Sea Salt

Brown Rice Miso. Organic Solo Low Sodium Sea Salt Mellow Brown Miso. Organic Sweet Brown Miso. Organic Mellow Brown Miso. Organic Mellow Barley Miso. Organic Mellow Field Bean Barley Miso. Organic Ginger Miso. Organic Mex Chilli Miso. Organic Hemp Miso. Address: 9 Cwm, Business Centre, Marine Street, Cwm, Ebbw vale, NP3 6TB, Wales, UK.

4314. Aihara, Cornellia. 2006. The secret of cooking, from *The Do of Cooking. Macrobiotics Today (Oroville, California)* 46(3):22-27. May/June.

• **Summary:** Contents: Eat locally grown foods in season. Do not waste. The yin yang game / principle in selection of foods. The three stages of cooking (beginner, skillful, master). Don't hurry. Basic suggestions (Main foods should be whole grains. For seasonings use traditional, naturally fermented miso and soy sauce. Tekka, gomashio, hiziki [hijiki], shio kombu). Condiments and spices (incl. soy sauce and miso). Food combination (based on yin and yang). Lunchbox and other tips. Kitchen hints.

Photos show: (1) Portrait of Cornellia. (2) Lima Ohsawa and Cornellia standing together. (3) Cornellia teaching foot massage to David Hammon.

4315. Thottam, Jyoti 2006. Catering to the melting pot. *Time*. June 12. Published online only.

• **Summary:** David Overton is founder and CEO of the Cheesecake Factory—a famous chain of restaurants that begin in Beverly Hills in 1978. Overton is changing the way America eats, by traveling the world with a team of experts to find the most delicious recipes. A man of Falstaffian proportions, he is famous for his fine taste—and business abilities. “Not everyone can afford the \$30 miso-glazed black cod made famous by Nobu, but the Cheesecake Factory’s best-selling miso salmon is only \$18 and three times the size.”

4316. United Soybean Board (USB). 2006. Consumer attitudes about nutrition: Insights into nutrition, health, and soyfoods. 13th annual national report. Seattle, Washington. 8 p. Oct. 28 cm.

• **Summary:** The methodology used in this survey changed significantly in 2006. Previously, random telephone interviews were completed with 1,000 consumers. This year an online self-administered survey was used. “Conducted by an independent research firm [in Seattle, Washington] in February and March 2006, the study includes 1,000 random surveys, providing a sample that is consistent with the total American population. The study’s margin of error remains \pm 1.9 to 3.1%, with a confidence interval of 95 percent.”

Contents: Introduction. Methodology. About USB. Nutritional habits and obesity concerns. Healthy food decisions. Cooking oil impressions. Consumer attitudes about fats. Awareness and usage of soy products. Occasion

preferences for consuming soy. Restaurants and soy products. Soyfoods in health.

Awareness and usage: 30% of Americans consume soyfoods or soy beverages once a month or more. A table shows the “Top 20 soy products by awareness.” Soymilk 87%. Soybean oil 61%. Soy veggie burger 60%. Plain white tofu 59%. Soy infant formula 44%. Soy nuts 43%. Soy latte 35% (Soymilk in espresso coffee drinks [as at Starbucks]). Soy protein bars 32%. Soy hot dogs 30%. Soy yogurt 29%. Dried or canned soybeans 29%. Soy flour 28%. Soy ice cream / cheese 28%. Cereal bar / Energy bar 28%. Flavored / Marinated tofu 26%. Miso 24%. Soy supplements 23%. Soy breakfast cereal 23%. Textured soy protein. Edamame 17%. All others mentioned 12% or less.

Occasion preferences for consuming soy (in descending order of preference): dinner 40%, breakfast 29%, lunch 22%, mid-morning snack 16%, mid-afternoon snack 16%, etc.

Soy products ordered in restaurants: Soy veggie burger 29%. Tofu 29%. Soymilk 28%. Miso 14%. Edamame 8%. Tofu (prepared) 6%, etc.

“In 2006, 82% of consumers rate soy products as healthy, significantly more than in previous years” (78% in 2005, 74% in 2004, 67% in 1998). Why? Low-fat profile 20%. Protein content 15%. Heart health 15%. Cholesterol-lowering properties 12%. “Being good for you” 10%. “A lactose-free option 10%.”

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com/health_nutrition/pdf/.

4317. Hymowitz, Ted. 2006. Why did the West (Europe and the Middle East) know so little about China in the 12th and 13th centuries? (Interview). *SoyaScan Notes*. Sept. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Because the Arabs blocked most European travel over the Silk Road / Route from about the 7th century until the 12th or 13th century. The Arab conquest blocked the overland route, in part to control the trade. There were actually two phases in the history of the Silk Road. The first phase ended in about the 6th or 7th century, before the origin of Islam.

Note: Both of these “Silk Roads” was actually a series of interconnected routes than ran from about Xian (Chang’an) in eastern China, along the northern part of China, branching into today’s Central Asia, south of the Caspian Sea, through today’s Turkmenistan, Iran (formerly Persia), and Iraq, to Damascus (today’s Syria) and Antioch (in today’s Turkey). The first famous and documented Chinese traveler, Zhang Qian (W.-G. Chang Ch’ien) led two expeditions to the Western Regions in the 2nd century BC, during the Former / Western Han dynasty.

As early as the 1st century AD, there were already some oceanic routes that were part of the “Silk Road.” They

hugged the coast from central China, around India, into the Persian Gulf and the Red Sea, then on to Italy!

This Arab blockade was one of the reasons for the search for a water route to China. The blockade began to fail as sea routes were developed. For example, in May 1498, Vasco da Gama was the first European to discover a sea route to India.

Another reason it took so long for information about the soybean to reach Europe from China was that the soybean is unlike rice, wheat, and maize / corn, where the product of the crop is associated very closely with what is growing in the field; everyone knows what rice, wheat and corn look like because they are so widely consumed as food. The main products of the soybean, especially those in commerce (such as soy sauce), bear no resemblance to the seed or plant from which they are made. It took a long time before Europeans realized that soy sauce (for example), which was known in Europe by the late 1600s, was made from the soybean—which did not arrive in Europe until the late 1730s. Even in Asia, the various names of the soybean were very different from the names of its major products. For example in China: Soybean is *dadou* or *huangdou*, soy sauce is *jiangyou*, tofu is *doufu*, and soymilk is *dounai* or *doujiang*. In Japan: Soybean is *daizu*, soy sauce is *shoyu*, tofu is *tofu*, soymilk is *tonyu*, miso is *miso*, natto is *natto*, and green vegetable soybeans are *edamamé*. In Indonesia, *tempé* is *tempé*. Even in the Western World today, many of these traditional foods and condiments do not have “soy” as part of their name. Moreover, the foods look totally different from the seed / bean from which they are made.

The first European to understand the connection between the soybean and its products was Engelbert Kaempfer; he made this clear in his book *Amoenitatum exoticarum...* vol. 5. Yet most Westerners did not understand this connection until more than a century later, and quite a few even today don't realize that tofu (for example) is made from soybeans.

Ted is convinced that Marco Polo and the various early Western missionaries who traveled to China probably tasted soyfoods over and over again—but they didn't realize they were made from soybeans. A good example is milk. The early Western travelers in China often mentioned that Chinese drank milk; in some cases they were probably drinking soymilk. Address: Prof. of Plant Genetics (retired), Dep. of Crop Sciences, Univ. of Illinois, Urbana, Illinois.

4318. *SoyaScan Notes*. 2006. Another dimension of the macrobiotic and natural foods movements: Preserving traditional ways of making foods (Overview). Oct. 10. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** George Ohsawa, and the founders of Nippon C.I. and Muso Shokuhin—both Japanese-run companies based in Japan—were the first to seek out these Japanese

makers of traditional foods. Soon Mr. Akiyoshi Kazama, founder of Mitoku Trading Co., joined them in the search.

In the mid-1960s, Paul Hawken of Erewhon went to Japan to find and place orders from companies and craftspeople who made foods in the traditional, natural way. Many of these companies were facing financial difficulties as modernization was sweeping Japan, and this new business and new market gave them a new lease on life.

Phase 2 began when companies in the USA and Europe started making Japanese foods (such as miso) and European foods (such as whole wheat bread) in the traditional, natural way.

4319. Dee, Joel. 2006. History and present status of Edward & Sons Trading Co. (his company) and of his work with miso and tamari (Interview). *SoyaScan Notes*. Oct. 23. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** A far-ranging interview on his many important innovations and success. Joel appears to have been the first person in the Western world to add flavor to soy sauce, with Lemon Tamari (Aug. 1985), Ginger Tamari (Feb. 1988), and many other related products.

Joel developed the Premier Japan line because he believed the two main importers from Japan (Eden Foods and Westbrae) both defined their market too narrowly—as macrobiotic. He soon came up with the tagline “Traditional Gourmet,” just as the specialty foods market was taking off in the USA. But the macrobiotics criticized this line as not being “medicinal quality” so it never took off in the macro or natural foods markets.

Joel does not supply Trader Joe's with their Instant Miso Soup; he is not at liberty to reveal the name of the supplier. The TJ product contains dextrose, clam extract, and bonito powder (all for flavor) which Joel's Miso Cup does not contain.

The main segments of his company are now: Soy seasonings (miso and tamari), rice crackers, organic canned foods (coconut milk, pineapple, etc.), candy, and baked goods. Address: President, P.O. Box 1326, Carpinteria, California 93014-1326. Phone: 805-684-8500.

4320. Budra, Beth. 2006. Magic miso: A guide to Japanese soybean pastes and how to use them. *San Francisco Chronicle*. Nov. 1. p. F1, F6.

• **Summary:** “In my quest to make the most of miso, I turned to Ayaki [sic, Ayako] Iino, who teaches Japanese cooking classes in the East Bay” (www.ayakoiino.com). The title of p. F6 is “Discovering the secrets of miso.” Gives the names of some miso varieties and their uses. Contains recipes for: Orange almond miso vinaigrette. Miso-broiled black cod. Sesame-miso dipping sauce (with Japanese sesame paste, tahini, or natural peanut butter, and sweet white miso).

4321. Itoi, Lydia. 2006. A Zen palette. *Time (Europe and Asia)*. Nov. 20 and 27.

• **Summary:** Umu is London's most ambitious kaiseki restaurant. Executive chef Ichiro Kubota goes to great lengths to bring the refined taste of Kyoto to the land of fish and chips. "Dishes like sesame tofu are nods to Kyoto's Buddhist vegetarian cuisine. At the end comes the spiritual heart of the meal: rice, pickles and the best miso soup around."

4322. Mutual Trading Co., Inc. 2006. *Kyôdô Bôeki K.K. 80 nenshi: Nihon no aji o sekai no hitobito ni* [Mutual Trading Company, Inc.: An eighty years' journey]. Los Angeles, California. 56 p. 28 cm. [Eng; Jap]

• **Summary:** This excellent history of Mutual Trading Co. (MTC) is divided into two parts, each written in both Japanese and English on facing pages. Part I is the general company history (p. 1-27). Part II is the very interesting "Chronology" (p. 28-56), which starts in 1635 (the year of Japan's self-imposed national isolation and ban on Japanese traveling abroad), contains numerous photos, and gives a chronology of the company in the context of major world events, with an "Economic overview" for each year from 1996 to 2006. On page 56 are two large bar graphs related to Mutual Trading Co. Group: (1) Annual sales from 1950 to 2005. (2) No. of employees in 5-year periods from 1950 to 2005. The inside rear cover give the contact information for MTC's 9 offices in the USA (6), Hawaii (1), and Japan (2).

Located in Los Angeles, Mutual was a pioneer in bringing Japanese foods to America. See also the company's 70th anniversary history. Address: 431 Crocker St., Los Angeles, California 90013. Phone: 213-626-9458.

4323. **Product Name:** Miso-Cup: Japanese Restaurant Style Natural Instant Soup (Soft-Pack Miso Soup).

Manufacturer's Name: Edward & Sons Trading Co., Inc. (Importer). Made in Japan.

Manufacturer's Address: P.O. Box 1326, Carpinteria, CA 93014.

Date of Introduction: 2006. December.

Ingredients: Soft-Pack: Organic miso (Organic soybeans, cultured organic rice, sea salt, yeast), water, kombu seaweed extract, salt, shiitake mushroom extract, onion powder, yeast extract, alcohol. Tofu and vegetable packet. Freeze dried tofu (water, soybeans, calcium sulfate, rice starch), wakame seaweed, freeze-dried green onions.

Wt/Vol., Packaging, Price: Three 8-oz. servings.

How Stored: Shelf stable.

New Product-Documentation: Product with Label sent by Joel Dee of Edward and sons. 2006. Dec. 8. Gusseted plastic stand-up pack 6 by 7.75 inches. Green, yellow and white on red and black. A color photo on the front shows a bowl of miso soup. A small illustration to right of bowl

shows a Japanese lady serving miso soup. Text on front panel: "Made with organic miso. 3 individual servings. Convenience without compromise. 60 calories per serving. No MSG. Vegan logo. Gluten-free logo. Delicious miso soup-To go. Just add hot water. Back panel text. The story of miso cup. Directions. Source: The Book of Miso by Shurtleff & Aoyagi, Ten Speed Press. Ingredients. Copyright Edward & Sons Trading Co., Inc. a vegetarian company." Nutrition facts. Special offer for Miso-Cup Travel Mug.

4324. Golbitz, Peter; Jordan, Joe. 2006. Soyfoods: Market and products. In: Mian A. Riaz, ed. 2006. *Soy Applications in Food*. Boca Raton, Florida, London, New York: CRC Press (Taylor & Francis Group). [x] + 288 p. See p. 1-21.

• **Summary:** Contents: History of soyfoods: Growth and development in the Western world, soybean industry blossoms in the United States, soybeans grow around the world. Soybean production and utilization for food: Soyfoods in Asia, soyfoods in Europe, soyfoods in Africa, soyfoods in the United States: Development of the U.S. soyfoods industry, Americanization of soyfoods. Soybean nutritional components: Soy protein, soy oil, carbohydrates and fiber, vitamins and minerals, isoflavones. Soyfoods and protein ingredients: Whole dry soybeans, tofu, soymilk, tempeh, soymilk yogurt, miso, soy sauce, okara, natto, soynuts, meat alternatives, cheese alternatives, nondairy frozen desserts, green vegetable soybeans (edamame), soy sprouts, full-fat soy flour, defatted soy flour, textured soy flour, soy protein concentrate, soy protein isolate.

Conclusions.

Tables: (1) World soybean production by major producers. (2) Annual per capita consumption (2001) of soybeans for direct food. (3) U.S. soyfoods market (1996 to 2005).

This chapter suffers from a lack of references, and contains several basic errors concerning the early history of the soybean. Contrary to what Mr. Golbitz says: (1) The Chinese have not considered the soybean a basic source of nutrition for almost 5000 years (see Hymowitz 1970, "On the domestication of the soybean"). (2) The first reference to soybeans in Chinese literature does not date back to 2853 B.C. (see Hymowitz 1970, and Hymowitz and Shurtleff 2005, "Debunking soybean myths and legends in the historical and popular literature"). (3) Natto was not developed at least 3000 years ago in Japan (the earliest known document that mentions natto dates from 1450 CE— or about 560 years ago). Address: Soyatech, Inc., Bar Harbour, Maine.

4325. Chalmers, Elizabeth. 2007. Business history of the Chalmers family: Making soyfoods in New Zealand (Interview). *SoyaScan Notes*. Jan. 16. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** At Easter 1980 Rick & Elizabeth Chalmers, together with Rick's brother Greg (his formal name is "Stephen"), opened Harvest Wholefoods, 403 Richmond Road, Grey Lynn, Auckland. They borrowed the money from Elizabeth's mother, and were all equal owners. It was New Zealand's first wholefoods / natural foods store as well as the country's first macrobiotic foods retail store. They were idealists and purists, refusing to sell any vitamins, or minerals, or dairy products.

They started the store partly as a result of becoming interested in macrobiotics, and partly because Elizabeth and Rick had a 3 year old son (Daniel) who could not tolerate dairy products. As the Chalmers could not get the food they wanted anywhere, they thought that they would open a shop to also provide it to others. Moreover, Greg, who had been overseas in London (where he had worked in a restaurant) and the USA, was a pioneer in bringing macrobiotics to New Zealand. "He brought home miso and some seaweeds—foods we had never seen before."

After about six months, in Oct. 1980, in order to attract customers to the shop, they started to make nigari tofu (for their own store only) in a small room at the back of the store, designated just for that purpose. They made the simple equipment themselves, and they learned the process from *The Book of Tofu*, by Shurtleff and Aoyagi.

After another six months they were inundated with other store owners, and cafe & restaurant owners from all over New Zealand wanting to buy their tofu. "It was just amazing." The tofu was completely unpackaged and they sold under water it in bulk buckets only. So in about April 1981 they started to sell their tofu outside of Harvest Whole Foods. "Sometimes they would pick it up, and sometimes we would deliver it."

Sanitarium Health Food Co. was making many kinds of breakfast cereals and canned nut meats, but no soyfoods. Several Chinese restaurants were making tofu (they called it "bean curd"), but only for use in their own restaurants; they did not sell it elsewhere. One of these was named Sun Sun, located in Khyber Pass, Auckland.

Their daughter, Jesse, was born on 1st October 1981, and by this time it was becoming difficult to manage both the shop and making tofu. So they sold the shop and with the capital gained they brought in special tofu making equipment from Japan, moved to new premises at 1 Wallingford St., Auckland, and started Harvest Soyfoods. Harvest Whole Foods is still at its same original location today; it is going strong and doing well financially.

Harvest Soyfoods' first product was nigari tofu; to this they soon added Tofu Spreads (Feb. 1981) then Tempeh (April 1981). The business grew very rapidly, and during this period Greg also had a child, so they all had very young children and were trying to manage their lives as well as an extremely rapidly increasing business.

Greg's partner decided that she wanted to leave Auckland, and as they could not picture another partner in his place and were feeling very overloaded anyway they decided in 1983 to sell the business to Paul and Trevor Johnston, who renamed it Bean Supreme. The Johnstons paid half the money at the time of sale and the remainder a year later; Elizabeth and Rick Chalmers worked for the Johnstons during that year. This business is also still in existence, although it was bought out by Sanitarium Health Food Co. in about Aug. 1986. Note: Trevor is no longer with the company; Paul sold the company to Sanitarium Health Foods.

From 1983 to 1986 Rick and Elizabeth had a commercial cleaning business, which suited the family structure very well, but was very unsatisfying workwise and environmentally.

In about 1980 or 1981 Austin Holden had started a largely macrobiotic import and wholesale business, Kiaora Naturals, at 374 West Coast Road, Glen Eden, in west Auckland. Holden soon started a very small shop in the corner of his warehouse and called it East West Wholefoods. For the first few years, his only customer was Harvest Wholefoods. "We kept him going."

Then in 1986 Rick and Elizabeth started East West Organics, taking over the building (and business) formerly occupied by Austin Holden and Kiaora Naturals. They knocked out all the walls, resulting in a much larger shop that specialised in organic food, with a big emphasis on fruit and vegetables.

They had no intention of making soyfoods. However there was suddenly an influx of Asian immigrants to New Zealand and Asian Tofu (usually made with calcium sulfate in aluminum pots) became widely available. By this time organics was really growing in New Zealand. Elizabeth and Rick wanted to stock organic tofu in their store, but they couldn't find a source. They talked with Trevor and Paul Johnston about making it for them, but the brothers felt there was no future in it, so they declined to do it.

So in 1996 Elizabeth and Rick started The Organic Soy Company, again in a small food factory out the back of East West Organics. They started making nigari tofu again—for their own store only. For the first time, they started to use organic soybeans, and as many other organic ingredients as they needed and could get. "We were right back where we started. And then exactly the same thing happened again. Once the word got out that organic nigari tofu was available again, people started coming from everywhere to buy it. It was not our intention to get back into the soyfoods business; we'd already sold our company. But we wanted the quality, so we had to make it ourselves." East West Organics is still operating today, although out of new premises (outgrew old one), and has just moved up the road slightly.

Their son Daniel joined them in January 1998, and in October of 1998, they sold East West Organics and moved

the Organic Soy Company to their current premises at Unit A, 2 Corban Avenue, Henderson, Auckland.

Elizabeth and Rick separated the same year, but continued on in the family business together. In 2001 their daughter Jesse returned from Europe and also joined us in the business. Later that same year Rick left the business to go to University and currently, Elizabeth, Daniel and Jesse are in joint ownership, with Rick still having a 10% share. They started using the brand names (the first being Tonzu) in 2002.

The business is growing slowly, currently producing tofu, tempeh, soy yoghurt, tofu burgers and teriyaki sauce, all 100% organic. Elizabeth has moved to part time as the younger generation are taking on the responsibility for the business. They currently have 3 full time employees as well as themselves, so are still reasonably small.

“We see a great future for the business and will probably outgrow our current premises within the next few years. We love making traditional soy products, and eventually hope to make miso and tamari, which will be export products as well as for the domestic market.”

First sold commercially by the organic soy company: Tofu (1996), Teriyaki Tofu (1999), Tempeh (1999), Tofu Burgers (2001), Teriyaki sauce (2003).

All current labels and packaging are new, and have changed very much from the original. They once made two tofu spreads, one teriyaki and the other curry flavour. However it was hard to get a good enough shelf life out of them to make them viable, so reluctantly they discontinued them. They have also changed their burgers significantly. When they first produced a burger in 2001, they had 3 varieties: Garlic and Cheese, Sundried Tomato, and Feta, and Vegan. They have discontinued them all and now just make one that is actually Vegan, although they do not call it that. The burgers did not sell well; they are not certain why that was, maybe they were too expensive with all the organic ingredients and very labour intensive. So they have simplified and streamlined our current burger making the whole process more viable.

As the population of the whole of New Zealand is around 4 million and only 15% of them are vegetarian, they are playing to quite a small market, this can sometimes be quite a challenge. In the long term it will be sensible to develop products that they can export. Address: Founder and owner, The Organic Soy Company, Ltd., Unit A, 2 Corban Ave., Henderson, Waitakere, Auckland 0612, New Zealand. Phone: +64 9 835 3617.

4326. Conklin, Dave. 2007. History of Japanese food in Portland, Oregon until 1941 (Interview). *SoyaScan Notes*. March 23. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** Dave is writing his master’s thesis at Portland State University on the social history of Japanese food in

Oregon; it looks at the Japanese culture through the lens of food. He has been reading Japanese-language newspapers in Portland and he found an ad that mentioned Ota Tofu (at 86½ N. 5th Street, Portland) on 1 Jan. 1915 in the *Oshû Nippô* (*The Oregon News*). It mentions “Ota Kyodai” (Ota brothers), as if they owned the shop at that time. The newspaper started about 1908 and was published in Portland 6 days a week, usually 6 pages per issue, and he found the 1915 issues on a roll of microfilm from the University of Washington. This special New Year’s Day issue was about 30 pages long. He has most issues of the *Oshu Nippo* printed between 1917 and 1928. Using a grant, they were recently put on a CD for the Oregon Nikkei Legacy Center in Portland (NW 2nd St.); they are not digitized. The center is open most weekdays. Becky Patchett is the archivist.

After the Japanese invaded Manchuria and China in the 1930s, there was a great deal of conflict between Japanese and Chinese in Portland. The children would have to walk to school on opposite sides of the street. They weren’t allowed to play with each other. However certain Chinese grocers would still sell particular foods, such as bean sprouts, to Japanese customers. The Japanese wouldn’t eat at the Chinese restaurants—maybe because they wouldn’t be served. So Japanese restaurants started serving Chinese food. In the 1920s *Shina udon* (“China noodles,” which we now call “ramen noodles”) was common in all the Japanese restaurants—as shown by ads. But by the late 1930s this food was no longer mentioned in ads by Japanese restaurants.

Dave is also interested in how American anti-Japanese racism played out through food. In 1924 Congress passed the National Origins Act (also known as the Immigration Act of 1924, the Asian Exclusion Act, or the Johnson-Reed Act). A sweeping law to keep out “undesirables,” it limited the number of immigrants who could be admitted from any country in any given year to 2% of the number of people from that country living in the United States in 1890, according to the 1890 U.S. census. Essentially, it put an end to all immigration from Asia. Moreover, all Asians were forbidden from being naturalized as citizens, and it had the effect of preventing Japanese Americans from legally owning land. From 1924 on anti-Japanese racism rose steadily in the USA even though Japanese were making huge contributions to American life and the economy in areas such as farming. They also paid taxes. The Seattle City Council [in Washington state], for example, passed laws attempting to put Chinese hog farmers out of existence. Other laws made it illegal for Japanese to fish for salmon in the Columbia River, or to obtain hunting licenses. The whole Pacific oyster industry came from Japan; laws shut it down. Dave is not sure why they did this. It could have been resentment that they were successful, or it could have been harassment.

Nobuo Harada is a leading Japanese food scholar, who writes mostly in Japanese; his focus is the mid-Edo period. He has one article in English titled "Culinary Culture and its Transmission in the Late Edo Period," in *Written Texts–Visual Texts: Woodblock-Printed Media in Early Modern Japan*, edited by Susanne Formanek and Sepp Linhart (2005, p. 141-158).

Dave has studied numerous editions of *Zaibei Nippon-jin Kan (Directory of Japanese in the USA)*, published by Shin Sekai-sha. The 1912 edition is at Waseda University in Tokyo. The 1916, 1928, and 1936 editions are at University of Washington (Seattle). Several other universities (UCLA, Univ. of Oregon) also have the 1936 edition. He has not seen the 1922 ed.

Another interesting source of information are the old guide books for coming to the USA; they were published in Japan, mostly in Japanese but with some English-language ads from hotels, food suppliers and importers, and labor contractors in the USA. Until 1912 the rice consumed in Oregon was grown in either Hawaii or Japan; then in 1912 Japanese-style rice started to be grown in commercial quantities in and around Sacramento, California. Rice had been milled in California since about the 1860s.

Hood River is a city on the Columbia River about 60 miles east of Portland. The Yasui Brothers Store (a general store) existed in Hood River from about 1907 until the internment in 1941. The store was the center of the Japanese community. Masuo Yasui, who owned the store with his brother, never threw any documents away for his entire life. He kept order sheets, cancelled checks, letters, telegrams—everything. These documents are now at the Oregon Historical Society, but they are just starting to be cataloged. Several scholarly books about this Yasui family have been published in English, such as *Stubborn Twig: Three Generations in the Life of a Japanese American Family*, by Lauren Kessler (1993).

Early soyfoods manufacturers in Portland that David has found include: (1) Asahi Tofu, 52 North 3rd St. Source: Oshû Nippo. 1922. May 4. p. 5. (2) Sanyo Co., which advertised miso (from Jan. 1915) and shoyu, and probably made them. (3) Kuge Tofu in the late 1930s and early 1940s until the internment.

Good books on Japanese rice in America are: (1) *A History of the American Rice Industry, 1685-1985* by Henry C. Dethloff (1988). (2) *Rice in California*, by Jack H. Willson (1979). Address: Portland, Oregon.

4327. Black, Jane. 2007. Good miso: It's all about the journey. *New York Times*. April 11. p. F6.

• **Summary:** A good introduction to and brief history of South River Miso Co in Conway, Massachusetts. Describes in detail how they make miso in the traditional way. Contains 5 photos of people making miso.

4328. Sullivan, Cheryl L.; Nash, Marilyn. 2007. Soy on the menu: Recipes for foodservice. Champaign-Urbana, Illinois: Illinois Center for Soy Foods. 52 p. Illust. No index. 26 cm. Series: Soy in the American Kitchen.

• **Summary:** This book has a creative format: (1) An outer color cover folds over the white spiral binding. (2) The pages are spiral bound across the top. (3) The bottom unfolds like a gusset so the book stands up by itself on a table with the pages angles slightly back on a table. (4) A CD-ROM comes with the book. Remarkably, the whole package sells for only \$3.00!

Contents: Bringing soy foods to the American table: Soy in foodservice, why choose soy?, soy foods, vegetarian and vegan recipes [in this book], recipe information, nutrient information, acknowledgements. Recipes: Appetizers. Breakfast. Breads. Salads. Soups. Side dishes. Main dishes. Desserts.

The recipes in this book use: Soy flour, soymilk, tofu, textured vegetable protein / TVP [texture soy flour], edamame, black soybeans, soy analogs [meat and dairy analogs].

Sidebars include: Biodiesel (p. 10). Research shows kids like soy in school lunches (p. 11). Uncommon soy foods: Tempeh, miso, okara, natto. Are you soy savvy?: Why is soy flour added to baked goods? (p. 14) U.S. soybean production, yield, exports, and domestic usage (1979 vs. 2004) (p. 16). Industrial uses of soybeans: Soy candles, ink, biodiesel, soy cleaners, waterproofing sealants, soy silk (fabric). Are you soy savvy? Edamame (p. 19). INTSOY (p. 22). NSRL (p. 24). What is the soybean checkoff? (p. 27). WISHH initiative for soy in human health (p. 29, 30). Illinois Soybean Association (p. 34). What is okara? Why should you shake up a carton of soymilk? (p. 39). Make your own tofu (p. 47). Address: 1. M.A., R.D., Research Dietitian; 2. Ph.D., Project coordinator. Both: 170 National Soybean Research Center, 1101 W. Peabody Dr., Urbana, Illinois 61801. Phone: (217) 244-1706 or www.soyfoodsillinois.uiuc.edu.

4329. Shurtleff, William; Aoyagi, Akiko. comps. 2007. Marketing miso and miso products: Labels, ads, sell sheets and other graphics, 1941-2006. Lafayette, California: Soyinfo Center. 267 leaves. May. Illust. (some color). 28 cm. Series: Marketing soyfoods.

• **Summary:** This book is a collection of 151 color and 90 black-and-white photocopies of materials. Contents: Introduction: Marketing soyfoods. Miso: Early documents. Graphics—Chronological. Company name index—Alphabetical. Other books in this marketing soyfoods series.

The books in this series, each a unique collection of graphic materials, are designed for a number of purposes: (1) To serve as a source of ideas, ingredients, inspiration, legal specifications, and basic guidelines for companies in the process of developing their own products, designing

their own graphic materials, and conceiving their own marketing strategies. (2) To document the tremendous diversity of soyfoods products and the way that each is presented and marketed. (3) By arranging the materials in chronological sequence, to help document the development and history of new product categories and soyfood types, and with them the rise of the soyfoods industry and market in the Western World. Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549.

4330. **Product Name:** [Manna Unpasteurized Organic Barley Miso].

Foreign Name: Manna Ongepasteuriseerde Bio Gerstenmiso "Mugi."

Manufacturer's Name: Natuproducs BV.

Manufacturer's Address: P.O. Box 376, 3840 AJ Harderwijk, Netherlands.

Date of Introduction: 2007. June.

Ingredients: Water, soybeans*, barley (31%)*, sea salt, *Aspergillus oryzae* (koji).

Wt/Vol., Packaging, Price: 400 gm. glass jar.

How Stored: Refrigerated.

New Product–Documentation: Label sent by Sjon Welters from the Netherlands. 2007. June. Red, black, and white on yellow. An illustration shows two white cranes flying in front of a red moon. 4 by 3 inches.

4331. United Soybean Board (USB). 2007. Consumer attitudes about nutrition: Insights into nutrition, health, and soyfoods. 14th annual national report. Seattle, Washington: USB. 12 p. Oct. 28 cm.

• **Summary:** Methodology: "This year represents the second year we have adopted an online self-administered survey as our methodology, a significant change from random telephone interviews. The survey, conducted by an independent research firm [in Seattle, Washington] in February and March 2007, includes 1,000 random surveys, providing a sample that is consistent with the total American population. The study's margin of error remains ± 1.9 to 3.1%, with a confidence interval of 95 percent."

Contents: Introduction. Methodology. About USB. Nutritional habits & obesity concerns. Healthy food decisions. Improving overall health. Cooking oil impressions. Consumer attitudes about fats. Awareness and usage of soy products. Occasion preferences for consuming soy. Restaurants and soy products. Soyfoods and health. Special health benefits of soy

Awareness and usage: 33% of Americans consume soyfoods or soy beverages once a month or more. "For the fourth year in a row, consumers reported the most familiarity with soymilk, soybean oil, soy veggie burgers and tofu."

A table shows the "Top 20 soy products by awareness." Soymilk 90%. Soybean oil 66%. Soy veggie burger 63%.

Tofu (unspecified) 60%. Soy infant formula 51%. Soy nuts 47%. Soy latte / soymilk in espresso coffee drinks [as at Starbucks] 41%. Soy protein bars 34%. Dried or canned soybeans 34%. Soy yogurt 32%. Soy flour 31%. Soy ice cream / cheese 30%. Soy hot dogs 29%. Flavored / marinated tofu 28%. Miso 28%. Soy supplements 28%. Cereal bar / Energy bar 28%. Edamame 23%. Soy breakfast cereal 21%. Textured soy protein 21%. All others mentioned 14% or less.

Occasion preferences for consuming soy (in descending order of preference): dinner 41%, breakfast 28%, lunch 27%, mid-afternoon snacking 19%, late evening snacking 14%, mid-morning snacking 10%, desserts 6%.

Restaurants and soy products: "Over half of consumers have tried soyfoods in restaurants." Tofu 25%. Soymilk 24%. Veggie burgers 22%. "Over one-third would order soy products in restaurants... if they could find soy on their restaurant's menu."

"In 2007, 85% of consumers rate soy products as healthy, up three percentage points from 2006." A graph (p. 7) shows this increase in awareness (82% in 2006, 78% in 2005, 74% in 2004, 74% in 2003, 74% in 2002, 69% in 2001, 76% in 2000, 71% in 1999, 67% in 1998).

Why? Low-fat profile 18%. Protein content 17%. Heart health function 16%. Cholesterol-lowering properties 11%. "Being good for you" 11%. Potentially providing relief for menopause symptoms 10%.

Note: As of Aug. 2008 this full survey is available gratis in PDF format at www.soyconnection.com/health_nutrition/pdf/.

4332. Fitzpatrick, Liam. 2007. Hong Kong's Zuma nights. *Time (Asia)*. Sept. 20.

• **Summary:** Zuma, a large and fancy restaurant in Hong Kong, serves "baby chicken marinated in barley miso and roasted on cedar wood, or fresh cold tofu with grated wasabi and other condiments."

4333. Belleme, John; Belleme, Jan. 2007. Japanese foods that heal: Using traditional ingredients to promote health, longevity, and well-being. Tokyo, Rutland, Vermont, Singapore: Tuttle Publishing. 224 p. Illust. Index. 26 cm.

• **Summary:** On the dedication page is a portrait photo of Takamichi Onozaki. Contents: Pronunciation guide: Foreword, by Christina Pirela. Preface, by John and Jan Belleme. Introduction: Food is medicine. 1. Miso: A health secret to savor. 2. Toasted sesame oil: The cooking oil supreme. 3. Shoyu: King of condiments. 4. Tamari: Wheat-free soy sauce. 5. Amazake: Sweet ambrosia. 6. Kuzu: The wonder root. 7. Brown rice vinegar. 8. Shiitake: Miracle mushroom. 9. Brown rice malt syrup: Heavenly sweet water. 10. Umeboshi: Venerable pickled plumbs. 11. Mochi: Sweet rice cakes. 12. Noodles. 13. Tofu: The square egg. 14. Seitan: The vegetarian alternative. 15. Sea vegetables:

Underwater harvest. 16. Mirin: Sweet rice wine. 17. Maitake: The king of mushrooms. 18. Japanese tea: A healthy tonic. Acknowledgments. Shopping resources. Glossary. Recipe index.

Note: Tuttle Publishing is an imprint of Periplus Editions (HK) Ltd., with editorial offices at 364 Innovation Dr., North Clarendon, Vermont, 05759. Address: P.O. Box 457, Saluda, North Carolina 28773.

4334. Elwell, Christian. 2008. Business is good at South River Miso Co. (Interview). *SoyaScan Notes*. Jan. 10. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Over the last seven years, annual sales have tripled. Over the last five years, production, annual production has doubled. His company makes about 100,000 lb/year of miso; that is about the maximum they can produce at their present site. Fourteen people are now on the payroll.

Christian is now starting to think about what will eventually become of his land and his miso company as he grows older.

He first met Sally Fallon at a conference at which he was talking about miso. Since that time, her attitude toward miso and other fermented soyfoods has been very positive. She sponsors conferences; Christian attended one recently, where he met Dr. Yu, an MD and surgeon who is doing research on miso. Address: Founder and Owner, South River Miso Co., South River Farm, Conway, Massachusetts 01341. Phone: (413) 369-4057.

4335. Shurtleff, William; Aoyagi, Akiko. 2008. *Le livre du tofu: La source de protéines de l'avenir—dès maintenant!* [The book of tofu: Protein source of the future—now! Translated from the English by Nathalie Tremblay]. Varennes, Quebec, Canada: Éditions AdA Inc. 430 p. Illust. by Akiko Aoyagi. Index. Feb. 28 cm. [53 ref. Fre]

• **Summary:** Contents: Preface. Acknowledgements. Part I. Tofu: Food for mankind. 1. Protein East and West. 2. Tofu as a food. 3. Getting started. Our favorite tofu recipes (lists about 80 recipe names for each of the different types of tofu, plus soymilk, yuba, whole soybeans, gô, okara, and curds; very favorites that are also quick and easy to prepare are preceded by an asterisk).

Part II. Cooking with tofu: Recipes from East and West (500 recipes). 4. Soybeans: History, cooking with whole dry soybeans, roasted soybeans (*iri-mame*), fresh green soybeans (*edamame*), kinako (roasted full-fat soy flour), soybean sprouts (*daizu no moyashi*), natto (sticky fermented whole soybeans, with “gossamer threads”), tempeh (fermented soybean cakes), Hamanatto and Daitokuji natto (raisin-like natto), modern western soybean foods (natural soy flour [full-fat], soy granules, defatted soy flour and grits, soy protein concentrates, soy protein isolates, spun protein fibers, textured vegetable protein (TVP), soy oil

products). 5. Gô (a thick white puree of well-soaked uncooked soybeans). 6. Okara or Unohana. 7. Curds and whey. 8. Tofu (includes history, and preparatory techniques: Parboiling, draining, pressing {towel and fridge method, slanting press method, sliced tofu method}, squeezing, scrambling, reshaping, crumbling, grinding).

9. Deep-fried tofu: Thick agé or nama agé, ganmo or ganmodoki (incl. *hiryozu* / *hirosu*), agé or aburagé (incl. “Smoked tofu,” p. 197). 10. Soymilk. 11. Kinugoshi (“*Kinu* means ‘silk’; *kosu* means ‘to strain’; well named, kinugoshi tofu has a texture so smooth that it seems to have been strained through silk”). 12. Grilled tofu. 13. Frozen and dried-frozen tofu. 14. Yuba (incl. many meat alternatives such as Yuba mock broiled eels, Buddha’s chicken, Buddha’s ham, sausage). 15. Tofu and yuba in China, Taiwan, and Korea (incl. Savory tofu {*wu-hsiang kan*}; see p. 258 for illustrations of many meat alternatives, incl. Buddha’s fish, chicken, drumsticks, and duck, plus vegetarian liver and tripe, molded pig’s head, and molded ham). 16. Special tofu.

Part III—Japanese farmhouse tofu: Making tofu for more and more people. 17. The quest. 18. Making community tofu. 19. The traditional craftsman. 20. Making tofu in the traditional way. Appendices: A. Tofu restaurants in Japan (many are vegetarian). B. Tofu shops in the West (Directory of 43 shops in the USA, 3 in Europe, and 3 in Latin America). C. People and institutions connected with tofu. D. Table of equivalents. Bibliography. Glossary. Index. About the authors (autobiographical sketches; a photo shows Shurtleff and Aoyagi, and gives their address as New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo, Japan 177). Sending tofu in the four directions.

pudding recipes include: Rice pudding with gô and apple (p. 76, incl. 2 cups soymilk). Tofu chawan-mushi (p. 147; Steamed egg-vegetable custard with tofu). Tofu fruit whips (p. 148). Tofu rice pudding (p. 150, incl. 1 cup soymilk). Tofu custard pudding (p. 152). Soymilk custard pudding (p. 208). Brown rice pudding (p. 208, with 2 cups soymilk). Soymilk chawan-mushi (p. 209). Chawan-mushi with yuba (p. 249).

Dessert recipes include: Tofu whipped cream or yogurt (p. 148; resembles a pudding or parfait). Tofu ice cream (p. 149, with chilled tofu, honey, vanilla extract and salt). Banana-tofu milkshake (p. 149). Tofu cream cheese dessert balls (p. 149). Tofu icing (for cake, p. 149). Tofu cheesecake (p. 150). Tofu-pineapple sherbet (p. 151). Also: Soymilk yogurt (cultured, p. 205). Healthy banana milkshake (p. 206). On p. 160 is a recipe for “Mock tuna salad with deep fried tofu.” Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549 USA. Phone: 925-283-2991.

4336. Ishige, Naomichi. 2008. Re: Early history of tataki natto, itohiki natto, and natto-jiro in Edo city, Japan. Letter

(e-mail) to William Shurtleff at Soyinfo Center, March 16. 2 p. [Eng]

• **Summary:** “Tataki natto is minced itohiki natto, chopped with a cooking knife.

“In about the 1830s, eating granulated [regular] itohiki natto started to become popular in central Edo city (today’s Tokyo). When people had granulated itohiki natto, they stirred it and put it on hot rice with soy sauce. Before that period, itohiki natto was commonly eaten as natto-jiru, which was a kind of miso soup with tataki natto, greens, and tofu. Because of this eating style, peddlers started to sell tataki natto with greens and tofu so that people could make their own natto jiru more easily and inexpensively.

“Natto-jiru was the soup for the winter season. Starting in about the 1830s in Edo city, granulated [regular] itohiki natto began to be sold instead of tataki natto. Once people got familiar with eating granulated itohiki natto with soy sauce, peddlers started to sell itohiki natto even in the summer.

“In the well-known book *Morisada Mankô*, the author, KITAGAWA Morisada, compared the way of life in Edo, Kyoto, and Osaka in the late Edo period. He wrote that natto sellers disappeared from Kyoto and Osaka in the late Edo period. Thus, people who wanted to eat natto in the region needed to make it by themselves. Even now, although natto is popular in Kanto region, which developed around Edo city, people in Kansai region, to which Kyoto and Osaka belong, do not eat natto so much.

“I do not know any record by which the origin of tataki natto can be traced. However, it is thought that tataki natto was made from olden times as one of the basic ways of eating natto.

“Today, natto-jiru is not popular for Japanese, so tataki natto is usually not sold. If you want to have natto-jiru, you need to mince natto by yourself.” Address: National Museum of Ethnology, Osaka, Japan.

4337. Liu, KeShun. 2008. Food use of whole soybeans. In: Lawrence A. Johnson et al. eds. 2008. *Soybeans: Chemistry, Production, Processing, and Utilization*. Urbana, Illinois: AOCS Press. viii + 842 p. See p. 441-481. Chap. 14. [85 ref]

• **Summary:** Contents: Introduction. Non-fermented soyfoods: Soymilk (traditional soymilk, modern soymilk {techniques to reduce beany flavors, formulation and fortification, homogenization, thermal processing, and packaging}), tofu (preparation methods, factors involved in tofu-making {soybean varieties, storage and pretreatment, solids concentration, heating, type of coagulants, coagulant concentration, coagulation temperature, coagulation time, process automation, packaging}), varieties of tofu {silken tofu, regular and firm tofus, varieties of tofu products}), green vegetable soybeans, soybean sprouts, yuba, okara, roasted or cooked soybeans. Fermented soyfoods: Terms

(Koji {fermentation, koji starter, inoculum}), fermented soy paste (preparation method {preparing rice koji, treating soybeans, mixing and mashing, fermenting, pasteurizing and packaging}), processing principles), soy sauce (preparation method {treating raw materials, koji making, brine fermentation, pressing, refining}), processing principles, chemical soy sauce), Japanese natto (preparation method, processing principles), Indonesia tempeh (processing method, processing principles), fermented soymilk, fermented tofu (preparation method, processing principles), soy nuggets (Chinese douchi, Japanese hamanatto). Conclusion.

Figures show: (1) Flowchart of a traditional Chinese method for making soymilk and tofu. (2) Photo of savory tofu dices. (3) Photo of soy sprouts. (4) Photo of yuba (soymilk film). (5) Photo of Chinese jiang and Japanese white and red miso. (6) Flow chart of a common method for making Japanese rice miso. (7) Photo of Japanese natto. (8) Flow chart of a traditional Indonesian method for making tempeh. (9) Photo of Chinese douchi (soy nuggets or fermented whole soybeans). Address: Research Chemist, U.S. Dep. of Agriculture, Agricultural Research Service, Grain Chemistry and Utilization Lab., Aberdeen, ID 83210.

4338. Bakkum, Leila. 2008. Update on Barry Evans and American Miso Co. (Interview). *SoyaScan Notes*. July 1. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Barry Evans has moved to China and is now living and traveling there and in Thailand. He is traveling throughout the country, visiting existing suppliers, trying to find new ones, and working to be able to go direct, to eliminate middle-men. He seems to be having the best time of his life.

American Miso Co., Inc. (Rutherfordton, NC) will soon be celebrating its 30th anniversary. Greg Gonzales, a former miso maker, has moved on, and Joe Kato is now the main miso maker.

Update: e-mail from Barry Evans. 2008. July 2. “I have had the most interesting, most exciting three years of my life here in Asia. I don’t know why I didn’t leave the US long ago! He has found the top expert on Thai massage and has had over 100 two-hour superb treatments from her at \$6/hour. He has also become an expert on and grown to love Thai cuisine.

“Thai people don’t like to leave Thailand because they can’t get real Thai food abroad and they never really like other cuisines very much. Now I know why.”

“I have had a chance to travel widely through much of East Asia in search of the best sources of organic food and I can state unequivocally that in my own experience the Chinese especially are quite conscientious in their devotion to organic standards and have a keenly developed ecological consciousness.” Address: Great Eastern Sun Trading Co., 92

Macintosh Rd., Asheville / Enka, North Carolina 28806.
Phone: 828-665-7790.

4339. Yoshihara, Susan-Marie ["Lulu"]; Yoshihara, Yasuo ["Yoshi"]. 2008. Re: History of Shin-Mei-Do Miso Company. Letter to William Shurtleff at Soyinfo Center, Aug. 12. 3 p. Typed, with signature.

• **Summary:** "Dear Bill, In 1977 I met you and Akiko in Tokyo. Our miso making journey began a year before when I found "The Book of Miso" in Uwajima-ya department store in Seattle. Your book, "The Book of Tofu," was already my favourite cookbook and I was looking forward to new culinary adventures. It may sound trite but what I found in the "The Book of Miso" literally changed my life.

"Inside the book was not only a wealth of miso lore and recipes, complete and detailed instructions for making miso at home and on a commercial scale were there in the back of the book, too. With this information I knew that our family could set up our own miso business.

"In 1976 we had just moved to rural Denman Island but still had no idea of how we would make our living. My husband, Yoshi, was from a Japanese farm family and he remembered how his family had made miso at home every fall. But he was only a child then and knew only some of the details involved. Nevertheless, we were interested and in the fall of 1977, accompanied by our 4 year old son, I went to Japan.

"Thanks to an amazing bit of luck I received an introduction to Yaeko Nakata, sister of the president of Maruman Miso Company in Nagano prefecture. Ms. Nakata was in charge of the hand-made division of the company. She and miso maker Chisato Kobayashi allowed me to observe and participate in the koji making process. Because I was able to experience the making of koji, so crucial to the making of good miso, I felt that Yoshi and I would be able to succeed in miso making.

"With very little capital but with youth and enthusiasm on our side we started work. It was 1979 and we had a 5 year old and a new baby boy. We made our first few batches in a woodshed. Our beans and grains were steamed in ½ whiskey barrels over a wood fire in a maple syrup cooker that we found in an antiques store. The upper part of our 10 acre property had been clear-cut some years before we bought it, so Yoshi used the logging slash to stoke the fires.

"That summer we built a new building. About once a month Yoshi drove our little red Datsun pickup truck to Vancouver where he bought sea salt and organically grown rice and soybeans. He also bought large oak barrels from Sweeney Cooperage in Vancouver. Two of the barrels could just squeeze into the back of the pickup and the bags of salt and grains and soybeans fit inside the barrels.

"We had no machines—no grinder, no mixer. Using a ½ barrel and a special pair of clean new gum boots, Yoshi and I took turns smashing cooked soybeans while the other

poured in the salted koji and turned the miso-to-be with an extra large rice paddle that Yoshi carved from Douglas fir. Often one of us was carrying the baby on our back. Our elder son played in the shop while we worked. Over about 3 years we made 22 tons of miso that way.

"Did I tell you that Yoshi's first carpentry project ever was to build the koji incubation room in the woodshed? Our neighbours made the koji boxes from red alder wood and those boxes are still in good condition, nearly 30 years later.

"It is amazing what you can do when you are young, healthy, idealistic and ignorant! Even so, we realized soon enough that we'd have to have mechanical help to make a living. In 1982 we built an addition to the building and added 8 large wooden tanks from Arrow Tank Company of Buffalo, New York. By that time Sweeney Cooperage had already been torn down for Expo 86 in Vancouver. We also imported a miso mixing machine from Japan and bought a used grinder. A neighbour helped us set up a low pressure steam boiler by adapting a wood-fired house furnace. Used stainless steel steam kettles completed the production equipment.

"Every summer Yoshi bucked, split and stacked firewood for the boiler. He made an extra long wooden spoon to harvest the finished miso from the large tanks. He packed the miso by hand no matter how hot or cold the weather was. Only the koji incubation room was heated, yet even in mid-winter Yoshi stood there at the packaging table for hours in the freezing cold. Yoshi is very strong and fit for a man his age.

"In September of 2006 Yoshi broke his collarbone in a bicycle accident. It never healed properly. In the meantime the cost of doing business had gone up incredibly. Ferry fares to the islands more than doubled. In 2008 we decided to retire and shut down our business after producing 220 tons of miso in nearly 30 years of business.

"If you would like to know more about how we made miso please don't hesitate to contact us. We are enclosing newspaper articles, 9 photographs and captions that explain them. Please keep these copies as we have backup copies of them.

"Sincerely,..."

Photos accompanying this letter show: (1) Susan-Marie learning koji making at Maruman Miso in Iida, City, Nagano prefecture, Japan. Feb. 1978. Photo by Mori Akiko of Sankei Shinbun.

(2) Susan-Marie helping Mr. Chisato Kobayashi carry grain to the steamer. Same date, place, and photographer as No. 1.

(3) Susan-Marie crushing cooked soybeans underfoot to make miso, 1979, Denman Island, at Shin-Mei-Do Miso Co. Photo by Yasuo Yoshihara.

(4) Steaming soybeans using an old cast-iron, wood-fired, maple-syrup boiler, April 1979. Photo by Yasuo.

(5) Yasuo and baby Tomoe by the steamer, April 1970. Photo by Susan-Marie.

(6) Yasue and Susan-Marie in the new miso shop, on their same property, 1983, Denman Island.

(7) The new miso shop and new equipment, 1983.

(8) Miso license plate, 1984, Denman Island.

(9) Yasuo and Susan-Marie with Arrow Tanks, 1986, Denman Island. Address: Shin-Mei-Do Miso Co., 3906 Wren Rd., Denman Island, BC, Canada, V0R 1T0. Phone: 250-335-0253.

4340. Cwiertka, Katarzyna J.; Moriya, Akiko. 2008. Fermented soyfoods in South Korea. In: Christine M. Du Bois, C.-B. Tan, and S.W. Mintz, eds. 2008. Urbana, Illinois: University of Illinois Press. viii + 337 p. See p. 161-181. [47 ref]

• **Summary:** Contents: Introduction. The soul of Korean cuisine. The industrialization of *Chang* manufacture. Conclusion—*Chang* and Korean identity.

Liquid soy sauce is *kanjang*. Korean miso is *toenjang* or *doenjang*. Hot red pepper miso is *koch'ujang*, which was first mentioned in the 2nd half of the 17th century.

Footnote 16 describes the four basic types of Korean soy sauce: ch'ong kanjan, chung kanjan, chin kanjang, and chin kanjang (written with a different ideogram than no. 3). There is also honhap kanjang (a mixture of Japanese soy sauce and its chemical counterpart) and choson kanjang (a product manufactured on the basis of traditional Korean methods) (p. 172-73). Address: 1. Leiden Univ., Netherlands, lecturer at the Centre for Japanese and Korean Studies..

4341. Mintz, Sidney W.; Tan, Chee-Beng; Du Bois, Christine M. 2008. Introduction: The significance of soy. In: Christine M. Du Bois, C.-B. Tan, and S.W. Mintz, eds. 2008. Urbana, Illinois: University of Illinois Press. viii + 337 p. See p. 1-23. [31 ref]

• **Summary:** Contents: Soy and history. Soy and dietary change. Diversity and unity. The relevance of soy. Notes. Address: 1. Emeritus Prof. of Anthropology, Johns Hopkins Univ.; 2. Chair, Dep. of Anthropology, Chinese Univ. of Hong Kong; 3. Anthropologist and manager for the Johns Hopkins Project on Soybeans.

4342. Mintz, Sidney W. 2008. Fermented beans and western taste. In: Christine M. Du Bois, C.-B. Tan, and S.W. Mintz, eds. 2008. Urbana, Illinois: University of Illinois Press. viii + 337 p. See p. 56-73. [37 ref]

• **Summary:** Contents: Introduction. The distribution of fermented legumes in local food systems. The absence of fermented legumes from western food history. The future of fermented legumes in the West. Address: Johns Hopkins Univ., USA, emeritus professor of anthropology..

4343. Ozeki, Erino 2008. Fermented soybean products and Japanese standard taste. In: Christine M. Du Bois, C.-B. Tan, and S.W. Mintz, eds. 2008. Urbana, Illinois: University of Illinois Press. viii + 337 p. See p. 144-160. [26 ref]

• **Summary:** Contents: Standard taste as a cultural model. Standard taste—the Japanese case. Origin of the components. The persistent nature of the standard taste. Ongoing and prospective changes. Address: Osaka International Univ., Japan, associate professor of anthropology..

4344. Leonard, Thom. 2008. The origin, development, and sale of Ohio Miso Company—a retrospective (Interview). *SoyaScan Notes*. Oct. 24. Conducted by William Shurtleff of Soyfoods Center.

4345. Huang, H.T. (Hsing-Tsung). 2008. Re: Various types of black bean sauce and soy sauce in China. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 30. 2 p.

• **Summary:** William Shurtleff writes: “I have been reading quite a few Chinese cookbooks and articles about Chinese foods during the period 1960 to the present. I am confused about the meaning of several widely-used terms in Chinese cookery. In all of the following the ‘black beans’ are actually black soybeans.

A common term is “Black Bean Sauce.” This sauce is usually made in the kitchen by crushing (for example) 4 tablespoons of salty, fermented black beans with 3 tablespoons dry sherry or shao hsing wine. The two key points for me are: (1) It is not an extract like Kikkoman soy sauce; the whole salted black beans end up in the final sauce. (2) It can be made in the kitchen as part of a recipe, quickly and easily; just combine and mash. It is most widely used to add a delicious flavor to recipes for chicken, shrimps, clams, fish, etc.

Question 1. What is THIS “Black bean sauce” called in Mandarin, pinyin, and Cantonese?

“Answer 1. It seems to me this sauce is not the invention of a particular chef; it is not a commercial product.

“Then there is a canned product that is sometimes sold as “Black Bean Paste.” I have seen the Chinese names *hei chiang* (pinyin: *heijiang*) or *hei touban chiang* (pinyin: *heidouban jiang*).

“Question 2. Is this canned product basically the same as product #1, which can be made so easily in the kitchen—but in convenient canned form? Or are there some differences?

“Answer 2: This is simply *jiang* (pinyin) or *chiang* (W.-G.). *Hei chiang* is simply black chiang.

Question 3. What is the canned product called in Cantonese? Ans. 3: “If I remember right, “jiang” is pronounced “jiong” in Cantonese.

“Question 4. How is *Tou chiang* (pinyin: *doujiang*) related to product No. 2? Ans. 4. They are the same product.

“Then there are two extracts—like our typical “soy sauce,” where the residue is separated and either discarded

or used as a low-value product. Shizhi (pinyin) / Shi Chih (W.-G.) is an ancient extract of chih = fermented, salted black soybeans.

“Shiyou (pinyin) / Shih-yu (W.-G.), Shi-yau, (Cantonese), or (Japanese) Kuki-jiru is an extract of fermented black beans.

“Question 5. Am I basically correct in saying that products 1 and 2 are closely related and that products 3 and 4 are also closely related but are very different from products 1 and 2.

“Ans 5. Product 1 is a chef’s concoction. 2. is a commercial product. When you extract shi with water you get Shih Chih. When you ferment shi further, the run-off juice is shiyou.

“Question 6. Am I basically correct that product 3 is now extinct and that product 4 is no longer very widely made or used? Or is it still made in certain regions of China?

Answer 6: Check my book in the Needham series (2000, pages 365-66). Both shiyou and jiangyou are translated as soy sauce. Both are made in China. The term “shiyou is more popular in south China. In Fujian it is preferred. In Guangdong the product is called “shiyu” but it is often made from jiang.

Basically, shiyou is “tamari” and chiangyou /jiangyou is shoyu. Address: PhD, Alexandria, Virginia.

4346. O’Connor, Anahad. 2008. Really?: The tongue is mapped into four areas of taste. *New York Times*. Nov. 11. p. D6.

• **Summary:** Many high school textbooks contain a map of the tongue, dividing it into four areas based on what it taste. But now we know of a 5th taste—umami, a Japanese word that means “savory,” and can be detected in miso and soy sauce. We have also learned that receptors for different tastes are not confined to certain parts of the tongue. Address: New York Times.

4347. Welters, Sjon. 2008. Re: History of work with amazake. Letter (e-mail) to William Shurtleff at Soyinfo Center, Dec. 17. In reply to specific questions. 4 p. 28 cm.

• **Summary:** “When I started to study macrobiotics in 1973 in The Netherlands I became aware of a product called amazake. It was not for sale at the time in The Netherlands. I learned how to make it, using koji, from cooking classes at the [macrobiotic] East West Center in Amsterdam. We always used Cold Mountain Koji, made and sold by Miyako Oriental Foods (owned by Mutual Trading Co.) in Los Angeles. We made a few gallons of amazake a week initially. I did not do much with it, aside from teaching how to make it during cooking classes I gave all over the Netherlands from 1977-1983. When I went to the USA in 1980 I saw the Mitoku pouch pack amazake from Japan.”

Q: When and where and why did you start making and selling amazake? Ans: “In Alkmaar [a city in The Netherlands in the province of Noord Holland] we had a natural food store and restaurant between 1977 and 1983, and made amazake from koji imported from Japan. We made desserts with it and experimented with making our own sake and miso with the koji. It was just a fascinating sweetener and food that I loved from the first day I tasted it.

“In late 1982 I started to experiment with making my own domestic kind of amazake. But I did not use koji because it was expensive, foreign, and hard to get. So I used sprouted wheat and barley at first, but did not like the aftertaste the hulls of the grains gave. I then started to work with pure enzymes that I got from a European enzyme company; bacterial and fungal amylase and other enzymes, that worked well. I continued to make it off and on, with koji or enzymes, for home use but did not sell the koji-made amazake commercially until many years later.

“I took this knowledge and the enzymes to the USA when we emigrated to Fayetteville, Arkansas, in October of 1983, where I continued to experiment using enzymes from American companies. I told Joel Wollner, an old friend of mine and the reason we ended up in Arkansas, about my work with amazake and enzymes. During the winter of 1983-84 we came up with a plan to start a company that would produce (among other things) seitan, of which we would use its byproduct, the starch, as the raw ingredient for an amazake-like product. Bob Kennedy, owner of the Chico San rice cake company, who’s company was also making rice syrup using enzymes at the time, was approached as a possible financier. He came to Fayetteville to talk and I eventually ended up at his rice syrup plant looking at ways to improve the process and see if we could work together. Nothing came of this however, as Chico San got sold to Heinz shortly thereafter and I moved to Massachusetts and became a partner in Nasoya [a company that made tofu].

“(Note on the side: Joel took Bob to a facility of the University of Arkansas where they were shown UA’s work on a “pounded sweet glutinous rice food”, they, according to Joel, being totally oblivious to the fact that such a product already existed in Japan.)

“However, during our time in Arkansas, the founders of Rice Dream (Robert Nissenbaum and Ken Becker) were running experiments while they were living at an intentional community [Moniteau Farm] north of us in Jamestown, Missouri, trying to figure out how to make amazake ice cream. They were stuck with koji as being an ineffective and expensive way of turning this big kettle full of cooked brown rice into a sweet base for their rice ice cream. Joel and I visited them there and saw what they were doing. Afterward Joel continued his contact with Chico San and spoke to Peter Mulberry (who after Chico San’s sale started to work for Lundberg Farms) there about my experiments

with enzymes. The word was out and no sooner Robert and Ken started to experiment with enzymes, too. They eventually developed what we now know as Rice Dream, the non dairy ice cream, and Rice Dream the drink, both amazake-inspired products widely available in the US.

“In about 1993, while working in Aveline Kushi’s sushi restaurant in Stockbridge, Massachusetts, I learned that Mutual Trading Company had a branch in New York, and that they sold Cold Mountain koji—although I think it was still made in California.

“In 1997 we started our restaurant in the back of State Street Market at 20 State Street, Montpelier, Vermont. It was named ‘The Wrap’ until April 2002, when the name was changed to ‘Rhapsody,’ the present name. We started making and selling amazake at the same time we opened the restaurant. Although this amazake was unflavored it was naturally fortified with kombu—just like Eden soymilk. It was sold in 12 fl. oz. plastic bottles in the natural food store cooler, without a label on the bottle; the label or sign was on the shelf just below the bottles.

On 3 May 2002 we expanded into our own restaurant at 28 Main Street in Montpelier, and changed our name to “Rhapsody” from “The Wrap.” In early 2003 we introduced three flavors of amazake in larger (16 fl. oz.) plastic bottles and discontinued the original amazake fortified with kombu. These had nice color labels and were sold in our cooler.

“Currently one of our people at Rhapsody makes about 80 pints per week in our restaurant kitchen, but the demand is much higher. We are just not set up yet to produce more. We cook the amazake and bottle it hot and freeze it to give it its shelf life of one year (at least). Refrigerated it lasts about 3 weeks. Hopefully somewhere in 2009 we will be able to produce at least enough for the New England market.

“Our restaurant, Rhapsody, is self-serve. Therefore, our amazake is not on our menu (we have no menu) and we do not serve it (hot or cold) in cups to people as they are dining. Rather, we sell it as a drink from our beverage cooler (three flavors: I will send you the labels) for \$3.50 per pint, and to stores in Central Vermont. Recently Associated Buyers of Barrington, New Hampshire, has started to distribute the products, too. It is a special, yet exclusive product that deserves wider acceptance, which will come over time as people will start to embrace a more natural diet. I’d be happy to assist the regional development of amazake production.

“The Bridge of Connecticut sells their original amazake in Whole Foods in the Boston area. Charlie Kendall stopped making it as far as I know quite a while ago.”

Note: Sjon has never learned how to make koji starter, so he has always had to buy ready-made koji for his amazake. Address: Founder and owner, Rhapsody, 28 Main St., Montpelier, Vermont 05062. Phone: 802-229-6112.

4348. Farnworth, Edward R. 2008. Handbook of fermented functional foods. 2nd ed. Boca Raton, Florida: CRC Press. xviii + 581 p. See p. 333, 341-45. *

• **Summary:** Chapter 12, “Korean fermented foods: Kimchi and doenjang,” by Jeonghee Surh, Young-Kyung Lee Kim, and Hoonjeong Kwon, has a long section on doenjang, including: Cancer: Epidemiology, anticarcinogenic and antimutagenic activities *in vitro* and animal models. Cardiovascular disease: Inhibition of angiotensin converting enzymes, antithrombotic peptides, isoflavones.

4349. Kim, Emily. 2008. Cooking Korean food with Maangchi. Scotts Valley, California: CreateSpace. 50 p. See p. 83. Illust. (color). 20 cm. *

• **Summary:** Page 25: A recipe for “Doenjangjjigae (bean paste vegetable stew)” calls for “100–150 grams of tofu. Soybean paste (“doen jang”)...”

4350. Murai, Ringo. 2008. Oishii tsukemono to tezukuri miso: shokutaku ni mainichi nosetai kantan rokujûsan reshîpi teibanzuke kihon no miso kara aidea arenji made [Delicious pickles and homemade miso: 63 easy recipes you will want to serve every day from basic pickle recipes, basic miso, and some creative ones]. Tokyo: Seibido Shuppan. 127 p. 24 cm. [Jap]*
Address: Japan.

4351. Murakami, Ryu. 2008. Miso sup’u—In za miso supu [In the miso soup]. Kyonggi-do P’aju-si: T’aedong Ch’ulp’ansa, 284 p. 20 cm. [Jap]*

• **Summary:** This is a murder mystery, a work of fiction. The author was born in 1952. Address: Japan.

4352. Uyttenhove, Chantal. 2009. Re: Lima Seasalt was being sold by 1957. Letter (e-mail) to William Shurtleff at Soyinfo Center, Jan. 27. 1 p.

• **Summary:** “Indeed, we were the exporters of Lima seasalt to the US. As far as I can remember, Eden Foods did import the salt and before that, it was Pierre Gevaert himself who had contacts with Erewhon. EdenSoy has long be produced with Lima sea salt and yes, we delivered salt to the American Miso company.

“In those days, Lima seasalt came from France, from the Isle of Noirmoutier. The so called ‘grey’ seasalt because it is/was harvested from handmade clay pans—*salières*. The gray clay interacts with the salt and thus gives it its color. Today, we still have Lima seasalt but years ago, I decided to step away from Noirmoutier salt because of some issues we had. Today, the Lima seasalt comes from South Portugal, from a company who, years ago, decided to repair and restore century-old *salinas* [salt fields] and started cultivating sea salt the old way. They have hand harvested salt, traditionally sun dried and have been rewarded as a

'slow food company' several times. Their 'Fleur de sel' is a real 'delice.'

"The only difference: the salt is white. There is a much longer harvesting season in Portugal so that they don't have to scrape the salt to the bottom of the salinas. And so, the salt stays pure white because it does not interact with the clay. That company in Portugal is a real beauty." Note: Chantal encloses two color photos of the white seasalt being harvested in Portugal.

Update: Jan. 29 e-mail. "I started working for Lima in January 1985. Since Lima started in 1957, there is a lot of history before me.

"We are planning on moving to a new building at the end of this year—an ecological friendly building with the least possible footprint—so, I'm in charge to make sure we don't throw away the old things. I'm sitting on the first ever Lima-Tamari packaging (brown plastic bottle, actually a cosmetic bottle) and all sorts of things. There are a lot of old documents that I still have to go through. There is also a very old movie from before my time which needs to be digitalised. (When finished, I can send you that if you are interested. There is a French and a Flemish version).

"The oldest document I have referring to the sea salt is a handwritten order from 1962. So my guess is that we started with the salt even before that as we have contracts older than that. I did not go through old invoices nor do I have a price list but I'm sure we have that somewhere. Later this year, those things will 'surface' again."

Follow-up e-mail from Chantal. 2009. Feb. 2. "Dear Bill, We do have a well documented history—there is the start of a book; it begins with the engagement of the father of Pierre, Edgar Gevaert, his work for world peace, first contacts with Ohsawa—and with the start of the Lima production in the kitchen and the opening of the first store to the start the company Lima. One catch: it's all in Flemish ! I'm so sorry.

"Here it says that Pierre Gevaert made a trip to Ile de Ré in France to buy seasalt and that only later, in 1957, he bought machinery. That would mean he started even before 1957 with buying seasalt for the production of tahini and gomashio which was produced in the kitchen.

"The history is so rich Bill, that I could put my job aside and do only this. Unfortunately, that is not possible. I wish more was available in another language but then Flemish and French were the languages at the time so all the documents are in those languages.

"Should something come up during the move, of course we'll think of you. Thank you and kindest regards, Chantal." Address: Purchasing Manager, Hain Celestial Europe [Belgium] (formerly Lima Foods N.V.).

4353. Clearspring, Ltd. 2009. Clearspring (Website printout—part). [Http://www.clearspring.co.uk](http://www.clearspring.co.uk). Printed Jan. 28.

• **Summary:** Contents: Home page. About us. Awards. Glossary. FAQ. News. Books. Links. Stocklists. Trade. Contact. Food quality. Producers. Health. Recipes. Where to buy.

"Introducing the chairman: Christopher Dawson was born 19 September 1953, at New Plymouth Hospital, New Zealand and grew up in Opunake, a rural town in New Zealand. He is the third son of William Geoffrey and Joan Dawson.

"Education: He did his primary, secondary and tertiary education in New Zealand. He first started independently studying vegetarianism and organic agriculture at the age of 18. In 1974 he came to London to further his studies of organic agriculture, both at the Henry Doubleday Horticulture and Nutrition Research Centre in Braintree and the Bio Dynamic Agriculture section at the Rudolf Steiner Emerson College, Sussex.

"Beginning Organic Food Distribution: In 1977, he opened and managed the East West Natural Foods Store at the Community Health Foundation, Old Street, London. He developed this shop into a distribution centre for traditional natural / macrobiotic foods, sourced from both local organic farms and from abroad, especially from Japan.

"From August 1978 through to January 1980 he traveled extensively throughout Europe, America, Australia and Asia, investigating the traditional dietary practices and food-processing techniques. He studied at the East West Foundation in Boston, Mass, U.S.A. about Far Eastern philosophical principles and traditions and studied the distribution network of the natural foods movement in both America & Europe, as well as Australia and New Zealand.

"Eighteen Years in Japan: Christopher made his first trip to Japan in July 1979, visiting natural food enterprises throughout Japan with Mr. A. Kazama, president of Mitoku Co. Ltd. He returned to Japan in January 1980 and began extensive studies into the daily life and cultural and dietary practices of the Japanese people.

"At the end of 1980 he commenced full-time employment at Mitoku Co. Ltd., the major exporter of traditional, natural Japanese foods. During the eighteen years he spent with the company Christopher studied Japanese Foods & production, worked with the producers to develop products to suit the needs of customers abroad and help the producers become compliant with EU organic certification. He also travelled extensively to introduce the foods to markets worldwide, with the intention to see if Japanese foods could really become international foods.

"Building Clearspring in the UK, Europe and the Middle East: In September 1993, Christopher bought the Clearspring Ltd. company, which was then a London based wholesaler with one shop, the very shop that Christopher started in 1977! By 1998, he felt he had sufficient knowledge of traditional, top quality Japanese food and decided it was the right time to come back to UK and to

focus on marketing organic and authentic Japanese foods under the Clearspring brand.

“Recognition from the Japanese government: On 25 May 2007, Christopher received the Award for Overseas Promotion of Japanese Food 2007 from the Ministry of Agriculture, Forestry and Fisheries of Japan, for his distinguished contribution to the promotion of Japanese organic food worldwide.”

Down the right side of this page are the following photos: (1) Christopher seated at a desk, writing in a notebook, looking very happy, at an early age (about 6), already a promoter of the written word. (2) Christopher at the East West Natural Foods Store in 1977. (3) Christopher with his mother at home in New Zealand. (4) Christopher at Mitoku in Japan (with Mr. Kazama and staff) in the late 1980s. (5) Photo taken 11 Oct. 1990 with Lima Ohsawa, then 91, the wife of macrobiotic teacher George Ohsawa and Aveline Kushi, then 67, the wife of macrobiotic teacher Michio Kushi. (6) Christopher with his young family (Japanese wife and 3 children) in Japan in the early 1990s. (7) Christopher, with his wife and two sons in Spain in 2006. (8) Christopher now regularly visits Clearspring’s suppliers in Japan, here with team of Sendai Miso Shoyu Company and Mr. Yoshida from Mitoku. (9) Christopher in Japan with Onozaki san, miso producer. (10) Christopher at the Organic & Natural Products Show, London 2007. (11) Special vegetarian foods prepared at the Dawson household, to celebrate the New Year. Address: 19A Acton Park Estate, London W3 7QE, UK. Phone: +44 (0)20 8749 1781.

4354. Yoshihara, Akino. 2009. The temptations of tempeh. *Daily Yomiuri Online (Japan)*. Feb. 19. www.yomiuri.co.jp/dy/features/culture/20090219TDY16002.htm.

• **Summary:** Tempeh was introduced to Japan about 30 years ago, but it has not become widely popular since there are now few tempeh manufacturers in Japan. Yet tempeh is made in Shiroishicho in Saga prefecture, Tokyo, Nagano prefecture and Okayama prefecture (located in southwestern Japan, just north of Shikoku Island). In Okayama prefecture about 20 firms make tempeh and 2nd generation tempeh products such as ramen noodles with tempeh or miso with tempeh. Moreover, many tempeh-related events have been organized, including cooking classes.

In 1987 the Japanese Society of Tempe was organized. Today it is headed by Masaharu Horii, professor in the Graduate School of Human Life Sciences, Notre Dame Seishin University, Okayama. The society promotes tempeh “to both the food industry and individual consumers through an annual conference featuring expert lectures and a cooking workshop.”

“The society is trying to popularize consumption of tempeh as part of people’s daily diet. We plan to publish a book containing useful information for consumers, such as the health benefits and a buyer’s guide.”

In Indonesia, long popular among the working classes, tempeh has recently become popular among the upper classes because of its many health benefits.

Note: Masaharu Horii, born in March 1939 and a researcher in the field of eating habits and food science, can be contacted at: Notre Dame Seishin University, Graduate School of Human Life Sciences, 2-16-9 Ifukucho, Okayama-shi, Okayama 700-8516 Japan. Fax: +81-86-252-5042 Address: Staff writer, Japan.

4355. Centraalbureau voor Schimmelcultures. 2009. CBS Fungal Biodiversity Centre (Website printout-part). [Http://www.cbs.knaw.nl](http://www.cbs.knaw.nl). Printed April 6.

• **Summary:** Contents: Home (incl. current news). About CBS. Research. Collections. Databases (18). Publications. Service. Links.

When we searched the 1st database, the “Filamentous fungi database,” it was very slow to load and to search. It “contains data on more than 38,000 strains in the CBS collection,” we got interesting results searching for: (1) Tempeh—14 hits = records found. In each record, tempeh appears in the field “Substrate.” The “Taxon name” (scientific name) of *Rhizopus oligosporus* has been changed to *Rhizopus microsporus var. oligosporus* (Saito) Schipper & Stalpers. In some records the name of the collector and date collected are given. Country and locality (where collected): Indonesia.

Other organisms used to make tempeh are: *Rhizopus oryzae* Went & Prinsen Geerlig. *Rhizopus stolonifer var. stolonifer*. *Cladosporium oxysporum* Berkeley & M.A. Curtis. *Rhizopus azygosporus* G.F. Yuan & S.C. Jong. One culture typically costs “150 Euro (65.0 Euro for Academies, Universities, Education).”

(2) *Rhizopus oligosporus*: 5 hits.

(3) Miso: 3 hits. One substrate was soy sauce and another was koji starter culture. The fungi were: *Aspergillus oryzae var. oryzae*. *Aspergillus sojae* Sakaguchi & K. Yamada ex Murakami.

(4) Soy sauce: 13 hits. In addition to the two molds used to make miso, there was also: *Aspergillus oryzae var. effusus* (Tiraboschi) Y. Ohara.

(5) Chinese cheese: No hits.

(6) Fermented tofu: No hits.

(7) Sufu: 9 hits. The molds used are: *Mucor racemosus f. racemosus*. *Mucor indicus* Lendner. *Mucor hiemalis* Wehmer. *Actinomucor elegans* (Eidam) C.R. Benjamin & Hesseltine. *Mucor circinelloides f. circinelloides*. *Rhizopus microsporus var. microsporus* Tieghem.

(8) Douchi or doushi or doushih or dowsee or dowsi or toudshih or tou-shih or fermented black beans or preserved black beans: No hits.

(9) *Aspergillus*: 1,213 hits.

(10) Soybeans: 1 hit. Substrate: Soybeans. Taxon name: *Aspergillus wentii* Wehmer. Country and locality: Indonesia,

Java.

(11) Soybean: 18 hits. Substrate is usually “soil from soybean field.” Molds are *Penicillium* and *Aspergillus* species.

(12) Koji: 36 hits. Molds: *Aspergillus oryzae* var. *oryzae*. *Aspergillus oryzae* var. *brunneus* Murakami. *Aspergillus tamarii* Kita. *Rhizopus microsporus* var. *tuberosus* R.Y. Zheng & G.Q. Chen (koji from China). Address: Utrecht, Netherlands. Phone: +31 (0)30 212-2600.

4356. Katz, Ellix Sandor. 2009. Re: Making tempeh, koji, and miso. Letter (e-mail) to friends, Feb. 6. 1 p.

• **Summary:** “I’ve been busy creating a new teaching kitchen at a friend’s farm a few miles from my home. With a dedicated incubator (rather than one improvised in the oven I share with twenty people), I’ve made more tempeh in the past couple of months than in the 15 years before. I’ve been experimenting with different beans and grains, and we’ve been eating lots of tempeh. Yummmm! I’ve also scaled up my koji-making and miso-making. And I’m trying my hand dry-curing venison in the style of prosciutto. All very exciting.

“I’m pleased to announce that I will be hosting my first workshops in the new space this upcoming spring. Four-day hands-on fermentation production. Details below. I will continue spreading fermentation fervor elsewhere, but in a much more limited way (only occasionally).” Address: Foundation for Fermentation Fervor, 247 Sanctuary Lane, Liberty, Tennessee 37095.

4357. Hatori, Yukio. 2009. Atama no yoi kodomo o sodateru miso reshipi hyakurokujūroku [166 miso recipes which help you to raise a smart child / children]. Tokyo: Jingukan. 96 p. 26 cm. [Jap]*
Address: Japan.

4358. Ishimura, Shin’ichi; Ishimura, Yumiko. 2009. Jikase miso no susume: Nihon no shobunka saisei ni mukete [Recommending homemade miso: For revitalizing Japanese food culture]. Tokyo: Yuzankaku. 310 + 4 p. 21 cm. [Jap]*
Address: Japan.

4359. *SoyaScan Notes*. 2009. Soyfoods historical research and writing wish list (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1. Early history of Chinese soyfoods companies and products in America and Europe. Especially Chinese tofu manufacturers in San Francisco and Los Angeles from 1850 to 1910. 2. Statistics on soyfoods in China during the 1980s. 3. The Swedish trading mission in Canton during the 1700s and 1800s and its work with soy sauce. 4. A lengthy, scholarly history (with an extensive bibliography) of soybeans and soyfoods in China written by a Chinese. 5. A lengthy, scholarly history (with an extensive

bibliography) of soybeans and soyfoods in Japan written by a Japanese. 6. A lengthy, scholarly history (with an extensive bibliography) of soybeans and soyfoods in Korea written by a Korean. 7. A history of the health foods industry in America, 1930-1980. 8. A book on mochi or how mochi came to the West, with a clear chronology of commercial mochi manufacturers in the western world.

9. A scholarly history (with an extensive bibliography) of each of the following soyfoods in Japan, written by a Japanese with a long-term involvement in the field: natto, miso, shoyu, tofu. 10. Explain why Linnaeus stated in *Hortus Cliffortianus* (1737, p. 499) that the soy bean was grown in the colony of Virginia in North America. 11. A lengthy, scholarly history (with a good bibliography) of Chinese growing and processing soybeans in California. They must have grown them between 1849 and 1899! (13 Sept. 1991)

12. Visit the best libraries and centers in Germany for doing research on soybeans and soyfoods (See #37465) and try to get missing old documents.

13. Try to document the statement that the soybean was used as a coffee substitute during the Civil War in the USA (1861-1865).

14. Use the Coker family archives in South Carolina to write a history of the company’s pioneering work with the soybean.

15. A history of early experimental gardens such as those that the Portuguese developed on the Cape Verde Islands, the British at Kew, Nairobi, Singapore, and the colony of Georgia (the Trustees’ Garden of Georgia, a government experimental farm at Savannah, laid out in 1733), the Spanish (under Cortez / Cortés) in today’s Mexico, etc.

4360. *SoyaScan Notes*. 2009. Chronology of Soyfoods Center: The work of William Shurtleff and Akiko Aoyagi. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1. Introducing soyfoods to the West: Popular books (1972 Oct.–1979 July).

The Book of Tofu:

1972 Oct. 22–First visit to San-gen-ya tofu shop in Tokyo. Mr. Toshio Arai begins to teach William Shurtleff the traditional art of making tofu.

1972 Dec. 22–Meet Nahum Stiskin of Autumn Press. Start to write tofu booklet.

1973 Jan. 13–Sign contract for *Book of Tofu* with Autumn Press.

1973 March 2–Visit Sasa-no-yuki tofu restaurant in Tokyo.

1975 Dec. 12–*The Book of Tofu** published by Autumn Press.

* = Book illustrated by Akiko Aoyagi.

1978 Dec. 22–*The Book of Tofu** published by Ballantine Books in a mass-market pocketbook edition that

retails for \$2.95.

The Book of Miso

1974 Feb/March—Study miso and shoyu in Japan on trip with Bob Gerner, head of Westbrae Natural Foods.

1974 May 7—Start to write *The Book of Miso*, table of contents.

1975 April—Autumn Press accepts idea of publishing *The Book of Miso*. Contract signed Aug. 18.

1976 Sept. 23—*The Book of Miso** published by Autumn Press.

1976 Sept. 29—1977 Feb. 3—Tofu & Miso America Tour. We do 70 public programs, many TV and radio interviews, drive our van 15,000 miles in 17 weeks.

The Book of Tempeh

1977 May—To Indonesia for one month of tempeh research.

1978 Feb. 27—Sign contract with Harper & Row.

1979 July 14—*The Book of Tempeh** published by Harper & Row.

2. Working to build a soyfoods industry in the Western world (1977 April—present)

1977 April 5—Establish Takai Tofu and Soymilk Equipment Co.

1977 Aug. 16—First Takai catalog of tofu and soymilk equipment published.

1977 Aug. 16—*Miso Production** published by Soyfoods Center—the first book we self-published.

1978 July 28-30—The Soycrafters' Association of North America is founded in Ann Arbor, Michigan. William Shurtleff helps to organize the inaugural meeting, is a founding member, and a member of the first board of directors.

1978—Soyfoods Center starts to develop a mailing list (typed so as to fit on pressure sensitive labels) of all people who have purchased books or contacted us.

1979 July 15—*Tofu and Soymilk Production** published by Soyfoods Center.

1979 July—The first issue of *Soycraft* magazine is published by Richard Leviton, director of Soycrafters' Association in Massachusetts. Each mailing is based on the use of Soyfood Center's mailing list—free of charge.

1980 March 10—*Tempeh Production** published by Soyfoods Center.

1980 Sept.-Dec.—Our mailing list of about 5,000 names and addresses, divided into 70 coded categories, is computerized by Parallel Procedures in San Francisco. This was done primarily to help Richard Leviton of *Soycraft* magazine.

1981 Dec.—There are now 10,900 names on our computerized Soyfoods mailing list, rising to 13,800 names by May 1982.

3. Documenting the history of soybeans and soyfoods (1980 Oct.—present)

1980 Sept. 10—Start to build what we hope will become a large library at Soyfoods Center with regular trips to the University of California at Berkeley library system.

1980 Oct. 22—Start writing *History of Soybeans and Soyfoods*.

1984 June 1—History book manuscript is now completely in our word processor: 2,500+ pages, 70+ chapters.

1984 June 21—Soyfood Center's annual summer intern program begins. Irene Yen, a Stanford student starting her senior year, is our first summer intern.

1984 July 17—*History of Tempeh* published—our first history book.

4. Studying the burgeoning soyfoods industry and market (1982 Sept.—1985 Feb.)

1982 May 16—*Soyfoods Directory and Databook* (1st edition) published. Renamed *Soyfoods Industry and Market: Directory and Databook* on 26 Feb. 1983. 3rd edition.

1982 Sept. 10—*Soyfoods Labels, Posters, and Other Graphics* published.

1984 Feb. 25—*Soymilk Industry and Market* published.

1985 Feb. 22—*Tofutti and Other Soy Ice Creams* published.

1990 May 8—*Tofu Industry and Market in Europe* published.

1990 July 17—*Soymilk Industry and Market in Europe* published.

1994 Jan.—*Soyfoods Industry and Market: Bibliography and Sourcebook* published.

5. Foreign language editions of our books are published (1980 -)

1980 July—*Das Miso Buch** (hardcover and paperback) published by Ahorn Verlag (Wolfgang and Gabriella Furth-Kuby) in Germany.

1981 Aug.—*Das Tofu Buch** (hardcover) published by Ahorn Verlag in Germany.

1988 Nov.—*Das Tempeh Buch** (hardcover) published by Ahorn Verlag in Germany—6 years after the project started.

1988 Nov.—New German pocketbook editions of *Das Tofu Buch* and *Das Miso Buch* (paperback) published by Goldmann Verlag.

6. Developing a computerized information center (1980 Dec.—present).

1980 Dec. 12—Mailing lists of Soyfoods Center and Soyfoods magazine merged and computerized by Parallel Procedures in San Francisco. 5,500 names in 50 categories.

1983 Sept. 28—Install first computer at Soyfoods Center, IBM-PC with 20 MB hard disk and word processing software to use for writing our book on *History of Soybeans and Soyfoods*.

1985 May 9—Install Revelation database manager software for developing a computerized bibliographic database on soya.

1985 July 31—Finish keying all 6,677 file cards (3x5 inch) into our computerized database. Our library is now computerized.

1985 Aug. 30—Our computerized database, containing 9,500 bibliographic records, is now available for use by the public.

1986 Sept. 1-16—The first of many trips to do library research at the USDA National Agricultural Library, Library of Congress, and National Library of Medicine—America's three national libraries, all located in and about Washington, DC.

1987 July 6—Start entering Commercial Soy Products into our database.

1987 Oct. 11—*Bibliography of Soymilk, from 1578 to 1987: With 1,584 References* published—our first bibliography.

1987 Oct. 19—Coin the name SoyaScan, start using it to refer to our computerized database, and apply for a registered trademark, which we are issued on 19 July 1988.

1993 Feb.—Install a Novell 5-user network to link our various computers.

1995 Feb. 11—We enter the 50,000th record into our SoyaScan database.

1997 Nov. 24—We enter the 55,000th record into our SoyaScan database.

7. Current status of computerized information—2000 January 1

SoyaScan database now contains 59,440 records from 1100 B.C. to the present, including 48,318 published documents, 12,683 commercial soy products, 4,628 original interviews and overviews, and 41,584 unpublished archival documents.

More than 75% of all SoyaScan records have a summary/abstract averaging 143 words in length.

More than 26,000 records (44% of the total) are for documents published before 1970.

Thirty five major books in the series Bibliographies and Sourcebooks on Soya, produced from the SoyaScan database, are now available, published by Soyfoods Center.

Soyfoods Center Library owns about 54,000 documents, almost all of which have a record in the SoyaScan database.

SoyaScan Directory now contains the name, address, and phone number of 17,300 people and organizations worldwide actively involved with soyfoods and soybeans. Each entry is coded to show the type of activity, e.g. 2A = Tofu manufacturers.

8. Collecting and Publishing Information on Vegetarianism and Other Non-Soy Food Products that can Replace Animal Products.

1984 Oct. 31—Create our first vegetarian keyword (subject heading) *VegeAnim* = Vegetarian Diets and Animal Rights.

1988 Feb. 21—*Amazake and Amazake Frozen Desserts: Industry and Market in North America* published. Updated

bibliographic supplement published in March 1995.

1992 Oct.—Start actively collecting information specifically on vegetarianism and veganism, and entering it into our new *VegeScan* database.

1992 March 4—*Bibliography of Vegetarianism: 1,755 References from A.D. 1170 to 1992, Extensively Annotated* published (360 p. large format, preliminary edition).

1992 June 12—*Sourcebook on Wheat Gluten Foods and Seitan* published. Expanded edition published in Jan. 1994.

2000 Jan. 1—*VegeScan* database now contains 5,500 bibliographic records on vegetarianism and veganism from 238 B.C. to the present.

Best selling books from Soyfoods Center (English-language editions only, as of Jan. 2000).

The Book of Tofu—557,000 copies sold.

The Book of Miso—115,900 copies sold.

The Book of Tempeh—47,950 copies sold.

Tofu & Soymilk Production—5,020 copies sold.

Other—9,200 copies sold.

Total—775,070 copies sold. Address: Lafayette, California. Phone: 925-283-2991.

4361. *SoyaScan Notes*. 2009. Translations of documents on soya from Asian languages to English, wish list (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1. Translate from Chinese: C.N. Li, comp. 1958. *Dou-lei [Varieties of beans]*. This book contains every known quotation about soybeans published in China from 1100 B.C. to recent times—100 pages total on soybeans. It is a treasury of key historical information that has never been translated into English.

2. Translate from Japanese: Wataru Kawamura. 1958. *Miso enkakushi [History of miso]*. 817 p. 22 cm. The definitive book on this subject. Pages 187-213 list all early Japanese books mentioning miso, with a summary of what each says.

4362. *SoyaScan Notes*. 2009. Chronology of miso and soybean chiang. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1st century B.C.—Soybean chiang is first mentioned in China in the *Shih chi [Historical records]* by Ssu-ma Ch'ien, and in the *Chi chiu p'ien [Primer on addressing matters]*, by Shih Yu.

535 A.D.—The *Ch'i min yao shu* in China gives the first detailed descriptions of making soybean chiang—and other soyfoods.

701—Soybean hishio, miso, and soy nuggets start to be made in Japan by the *Hishio Tsukasa*, a government bureau. References to these seasonings are found in documents published between 730 and 748.

901-08—The modern word for *miso* first appears in Japan in the *Sandai Jitsuroku*.

927—The *Engi Shiki* gives the first details about the production of soybean hishio-miso in Japan.

1597—Miso is first mentioned by a Westerner, the Florentine Francesco Carletti; he calls it *misol*.

1712—Englebert Kaempfer, a German who lived in Japan, is the first European to give detailed descriptions of how miso and shoyu are made in Japan. Also mentions koji.

1727—Miso is first mentioned in an English-language publication, *The History of Japan*, by E. Kaempfer. He spells it “*Midsu*, a mealy Pap, which they dress their Victuals withal, as we do butter.”

1779—The word “miso” (“that is used as butter”) first appears in an English-language publication, the *Encyclopaedia Britannica*. 1847—The word “miso” first appears in print in the United States, in a letter from T.W.H. of Cambridge, Massachusetts, to the *Farmers’ Cabinet and Herd Book*.

1908—Miso is first made commercially in the continental United States by the Fujimoto Co. of San Francisco, California. Brand name: Kanemasa Miso.

1921—The term “bean paste” is first used to refer to miso by J.L. North of England in the *Illustrated London News*.

1929—Amano Brothers, Canada’s first commercial miso maker, starts in Vancouver, British Columbia. Founder: Mr. Teiichi Amano. 1960—Dr. C.W. Hesseltine and K. Shibasaki, of the Northern Regional Research Laboratory in Peoria, Illinois, publish the first of many important scientific articles on miso.

1963—Michio and Aveline Kushi, teachers of macrobiotics in Boston, start to teach Americans about miso.

1966 April—Aveline Kushi (with Evan Root) starts Erewhon, a pioneering retailer in Boston, that soon starts selling miso.

1968—Erewhon expands to become an importer and distributor of natural and macrobiotic food. Their first two misos, Mugi Miso and Hacho Miso, are imported from Japan.

1976 June—Miyako Oriental Foods, a division of Yamajirushi Miso Co. in Japan, starts making miso in Los Angeles. Owned by Noritoshi Kanai. Brands: Yamajirushi, Kanemasa, Yamaizumi.

1976 Sept.—*The Book of Miso*, by Shurtleff and Aoyagi, is published by Autumn Press of Hayama, Japan. This is the first book about miso in the Western world.

1978 Oct.—The Ohio Miso Co., the first Caucasian-run miso company in the Western world, is founded by Thom Leonard and Richard Kluding. They begin miso production on 13 March 1979.

1978 Nov.—Joel Dee of Edward & Sons (New Jersey) launches Natural Instant Miso Cup, an instant miso soup made with freeze-dried miso from Japan.

1978 Dec.—Miyako Oriental Foods of Los Angeles introduces Cold Mountain Firm Granular Rice Koji, the first

koji sold commercially in the USA. In 1979 they start selling Cold Mountain Miso, the first miso with an American-style brand.

1979 Oct.—John and Jan Belleme arrive in Japan to study traditional miso—and koji-making with the Onozaki family in Yaita, Japan. They are the first Caucasians to do this, and then to return to the West to start making miso commercially. From 1981 on they write many superb articles about miso, published in America.

1979 April—Shin-Mei-Do Miso is founded by Lulu and Yasuo Yoshihara in British Columbia, Canada.

1981 April—John Troy of Elf Works, Ltd. in Chapel Hill, North Carolina, launches Hot Stuff, an early and very successful American miso product. He first learned about miso from Joel Dee.

1981 Aug.—John and Jan Belleme begin full-time, large-scale production of miso and koji at Erewhon Miso Co. in Rutherfordton, North Carolina. By early 1982 their company is renamed American Miso Co. with Barry Evans as the new owner.

1982 Oct. 25—Christian and Gaella Elwell start making miso and koji at South River Miso Co. in Conway, Massachusetts. Earlier that year they purchased The Ohio Miso Co. Address: Lafayette, California. Phone: 925-283-2991.

An asterisk (*) at the end of the record means that SOYFOODS CENTER does not own that document.

A plus after eng (eng+) means that SOYFOODS CENTER has done a partial or complete translation into English of that document.

An asterisk in a listing of number of references [23* ref] means that most of these references are not about soybeans or soyfoods.

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American Soybean Association (ASA)–State Soybean Associations and Boards (Starting with Minnesota in 1962). 3720, 3741, 3749, 3778, 3795, 3826, 3899, 3902, 3959, 3967, 3970, 4016, 4096, 4167, 4277

American Soybean Association (ASA)–State Soybean Associations and United Soybean Board–Activities Related to Food Uses of Soybeans / Soyfoods, or Soy Nutrition, in the United States (Not Including Soy Oil or Edible Oil Products). 855, 1197, 1583, 2035, 3056, 3429, 3708, 3719, 3720, 3741, 3742, 3744, 3749, 3778, 3795, 3826, 3834, 3835, 3884, 3899, 3900, 3902, 3959, 3967, 3970, 3975, 4016, 4096, 4149, 4151, 4159, 4167, 4237, 4295, 4316, 4331

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Anderson International Corp. (Cleveland, Ohio). Manufacturer of Expellers for Soybean Crushing and Extrusion Cooking Equipment. Formerly V.D. Anderson Co. and Anderson IBEC. 415, 664, 736

Andreas Family of Minnesota and Iowa–Incl. Reuben Peter Andreas, and his sons Albert, Glenn, Dwayne (1918-), and Lowell Andreas (1922-). 1196

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Appropriate Foods, Inc. (Brooklyn, New York). Founded by Robert Werz and David Sibek in Nov. 1980. Incl. Tempeh Brothers and Soy Source. 2642, 2671, 2794, 2820, 2821, 2822, 3123

APV Systems, Soya Technology Division. Named Danish Turnkey Dairies Ltd., Soya Technology Division until 1987 (Aarhus, Denmark; DTD / STS). 2660, 3441, 3640, 3675

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Arlington Experimental Farm. *See* United States Department of Agriculture (USDA)–Arlington Experimental Farm

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Azuki Bean. *Vigna angularis* (Willd.) Ohwi & H. Ohashi. Also called Adzuki, Aduki, Adsuki, Adzinki, Red Bean, Chinese Red Bean, Red Mung Bean, Small Red Bean. Japanese–Kintoki, Komame, Shôzu. Chinese–Xiaodou, Chixiaodou, Hsiao Tou [Small Bean], Ch'ih Hsiao Tou [Red Small Bean]. Former scientific names: *Phaseolus radiatus* (L.), *Dolichos angularis* (Willd.), *Phaseolus angularis* (Willd.) Wight, or *Azuki angularis* (Willd.) Ohwi. 7, 12, 15, 17, 18, 21, 22, 25, 26, 27, 35, 52, 62, 65, 66, 83, 84, 85, 86, 90, 92, 115, 124, 127, 129, 137, 143, 145, 146, 165, 168, 177, 186, 197, 198, 201, 205, 209, 217, 224, 225, 229, 262, 266, 267, 271, 280, 287, 289, 291, 292, 305, 327, 329, 333, 372, 375, 405, 432, 433, 437, 471, 516, 517, 554, 565, 575, 588, 621, 641, 642, 653, 684, 686, 690, 703, 705, 708, 728, 804, 838, 857, 860, 976, 996, 1021, 1063, 1074, 1158, 1180, 1183, 1228, 1261, 1265, 1266, 1268, 1297, 1329, 1341, 1342, 1344, 1358, 1373, 1374, 1375, 1391, 1395, 1409, 1434, 1463, 1470, 1478, 1479, 1482, 1485, 1495, 1501, 1511, 1513, 1518, 1533, 1534, 1541, 1547, 1556, 1557, 1561, 1589, 1593, 1596, 1597, 1598, 1606, 1608, 1612, 1627, 1637, 1639, 1641, 1646, 1650, 1658, 1659, 1671, 1672, 1673, 1675, 1678, 1680, 1682, 1703, 1706, 1735, 1737, 1749, 1750, 1772, 1773, 1796, 1843, 1905, 1908, 1941, 1977, 1991, 1995, 2023, 2069, 2081, 2146, 2173, 2186, 2219, 2259, 2301, 2307, 2315, 2350, 2370, 2380, 2386, 2424, 2427, 2434, 2436, 2475, 2492, 2507, 2527, 2534, 2552, 2554, 2555, 2566, 2585, 2686, 2688, 2715, 2723, 2726, 2730, 2735, 2759, 2867, 2883, 2901, 2911, 2971, 2973, 2977, 2985, 3010, 3017, 3023, 3038, 3071, 3087, 3100, 3101, 3103, 3178, 3181, 3193, 3225, 3239, 3326, 3349, 3359, 3363, 3381, 3406, 3436, 3481, 3494, 3515, 3520, 3538, 3566, 3569, 3570, 3582, 3596, 3608, 3618, 3647, 3649, 3681, 3684, 3699, 3732, 3753, 3756, 3766, 3790, 3809, 3812, 3837, 3838, 3848, 3852, 3860, 3865, 3866, 3872, 3893, 3895, 3904, 3909, 3913, 3948, 3957, 4010, 4015, 4018, 4026, 4027, 4041, 4052, 4071, 4072, 4147, 4170, 4193, 4230

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Bacteria causing toxicity. *See* Toxins and Toxicity in Foods and Feeds–Microorganisms, Especially Bacteria, and that Cause Food Poisoning

Bacteria in intestines–beneficial. *See* Intestinal Flora / Bacteria

Balanced Foods, Inc. (New York City, and North Bergen, New Jersey). Wholesale Distributor of Health Foods and Natural Foods. Founded in 1939 by Maurice “Doc” Shefferman, Sam and Will Reiser. Purchased in Dec. 1986 by Tree of Life. 1458, 2251, 3577

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Black Bean Sauce / Black Soybean Sauce / Soy Nugget Sauce, Made in the Kitchen by Crushing Salted, Fermented Black Soybeans, usually with Minced Ginger, Garlic, Chilis and/or Chinese-style Wine. Not a Commercial Product or an Extract. *See* Also Black Soybean Jiang (a Commercial Product). 1071, 1123, 1368, 1610, 1641, 1795, 1860, 1981, 2287, 2433, 2977, 3800, 3957, 4022, 4071, 4110, 4345

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Blaw-Knox Co. (Pittsburgh, Pennsylvania). Maker of Soybean Crushing Equipment, Especially the Rotocel. 1674

Blender, Electric (Kitchen Appliance)—Including Liquefier, Liquidizer, Liquifier, Osterizer, Waring Blender, Waring Blendor, Waring Mixer, Whiz-Mix, Vitamix—Early Records Only. 1482, 1672, 1777, 2119, 2120, 2407

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British Arkady Company Ltd. and British Arkady Holdings Ltd. (Manchester, England). Subsidiary of ADM of the USA. Including the Haldane Foods Group. 1388, 2691

British Columbia. *See* Canadian Provinces and Territories—British Columbia

Broad Bean. *Vicia faba* L., formerly *Faba vulgaris*, Mönch. Also called Faba Bean, Fava Bean, Horse Bean. Chinese—Candou (“silkworm bean”). Japanese—Soramame. German—Saubohne or Buschbohne. French—Grosse Fève, Fève de Marais, Féverole, Faverole, Gourgane. 52, 66, 82, 126, 198, 210, 224, 227, 229, 267, 280, 289, 370, 412, 427, 575, 690, 1374, 1598, 1612, 1709, 1741, 1967, 2036, 2065, 2134, 2304, 2574, 2730, 2861, 3111, 3922

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- Grades and grading of soybeans. *See* Seed Quality of Soybeans—Condition, Grading, and Grades (Moisture, Foreign Material, Damage, etc.)
- Graham, Sylvester (1794-1851). American Health Reformer and Vegetarian (New York). 534, 651, 1517, 3154
- Grainaissance, Inc. (Emeryville, California). 2051, 2794, 3123, 3491, 3534
- Granum. *See* Natural Foods Distributors and Master Distributors in the USA—Janus
- Grazing green soybean plants. *See* Feeds / Forage from Soybean Plants—Pasture, Grazing or Foraging
- Great Eastern Sun and Macrobiotic Wholesale Co. (North Carolina). 2439, 2458, 2468, 2522, 2657, 2744, 2794, 2840, 2890, 2898, 2906, 2915, 2996, 3001, 3005, 3008, 3046, 3065, 3179, 3199, 3203, 3264, 3265, 3266, 3309, 3323, 3324, 3333, 3343, 3375, 3419, 3437, 3470, 3582, 3612, 3613, 3615, 3646, 3664, 3738, 3739, 3807, 3809, 3818, 3819, 3820, 3821, 4023, 4040, 4042, 4055, 4064, 4115, 4120, 4121, 4125, 4126, 4171, 4244, 4265
- Green Manure, Use of Soybeans as, by Plowing / Turning In / Under a Crop of Immature / Green Soybean Plants for Soil Improvement. 370, 405, 414, 423, 431, 459, 513, 641, 667, 718, 731, 754, 786, 980, 1013, 1366, 3412
- Green Vegetable Soybeans (Edamamé)—Machinery or Equipment Used for Harvesting or Picking, Sorting, Cleaning, and / or Shelling, Threshing, or Depodding. 1142
- Green Vegetable Soybeans—Edamamé (Japanese-Style, In the Pods), Usually Grown Using Vegetable-Type Soybeans. 463, 703, 788, 931, 1132, 1256, 1387, 1482, 1783, 1787, 1823, 1912, 2174, 2307, 2353, 3425, 3553, 3569, 3640, 3719, 3826, 3830, 3831, 3835, 3857, 3883, 3895, 3898, 3899, 3901, 3939, 3942, 3966, 3967, 3990, 3991, 3993, 4021, 4030, 4049, 4056, 4071, 4084, 4088, 4096, 4102, 4109, 4110, 4111, 4123, 4135, 4141, 4148, 4149, 4164, 4176, 4181, 4182, 4215, 4241, 4271, 4277, 4291, 4294, 4300, 4311, 4335, 4337
- Green Vegetable Soybeans—Edamamé (Japanese-Style, In the Pods), Usually Grown Using Vegetable-Type Soybeans. 463, 703, 788, 931, 1132, 1256, 1387, 1482, 1783, 1787, 1823, 1912, 2174, 2307, 2353, 3425, 3553, 3569, 3640, 3719, 3826, 3830, 3831, 3835, 3857, 3883, 3895, 3898, 3899, 3901, 3939, 3942, 3966, 3967, 3990, 3991, 3993, 4021, 4030, 4049, 4056, 4071, 4084, 4088, 4096, 4102, 4109, 4110, 4111, 4123, 4135, 4141, 4148, 4149, 4164, 4176, 4181, 4182, 4215, 4241, 4271, 4277, 4291, 4294, 4300, 4311, 4335, 4337
- Green Vegetable Soybeans—Etyymology of This Term and Its Cognates / Relatives in Various Languages. 288, 510, 703, 726, 737, 782, 788, 924, 1047, 1142, 3678, 3805
- Green Vegetable Soybeans—Horticulture—How to Grow as a Garden Vegetable or Commercially. 287, 333, 477, 641, 1907
- Green Vegetable Soybeans—Large-Seeded Vegetable-Type or Edible Soybeans, General Information About, Not Including Use As Green Vegetable Soybeans. 300, 1142, 1869, 2637, 2767, 2830, 2869, 3183, 3805
- Green Vegetable Soybeans—Leaves of the Soybean Plant Used as Food or Medicine. Called *Huo* in Chinese. 1, 2, 5, 11, 16, 92, 653, 759
- Green Vegetable Soybeans—Marketing of. 3830
- Green Vegetable Soybeans—Soybean Seedlings or Their Leaves Served as a Tender Vegetable. Called *Doumiao* in Chinese. 92
- Green Vegetable Soybeans—Vegetable-Type, Garden-Type, or Edible of Food-Grade Soybeans, General Information About, Including Use As Green Vegetable Soybeans. 876, 924, 3533, 3796
- Green Vegetable Soybeans Industry and Market Statistics, Trends, and Analyses—By Geographical Region. 754, 1707
- Green Vegetable Soybeans, Usually Grown Using Vegetable-Type Soybeans. 73, 186, 197, 211, 215, 222, 231, 239, 283, 284, 287, 288, 295, 314, 316, 318, 331, 332, 333, 349, 370, 375, 414, 417, 447, 463, 477, 493, 500, 510, 541, 542, 544, 546, 548, 549, 550, 553, 555, 567, 568, 577, 590, 606, 616, 691, 693, 703, 705, 718, 726, 732, 734, 736, 737, 754, 768, 782, 783, 788, 798, 855, 856, 867, 876, 882, 893, 912, 924, 929, 930, 931, 951, 956, 972, 978, 980, 992, 1013, 1038, 1047, 1048, 1121, 1132, 1256, 1265, 1295, 1341, 1372, 1387, 1438, 1471, 1474, 1482, 1487, 1561, 1623, 1630, 1638, 1649, 1664, 1707, 1739, 1783, 1787, 1792, 1823, 1857, 1871, 1902, 1907, 1912, 1922, 2039, 2047, 2069, 2081, 2084, 2100, 2101, 2102, 2134, 2142, 2174, 2257, 2268, 2287, 2299, 2307, 2344, 2353, 2415, 2421, 2484, 2661, 2662, 2679, 2720, 2721, 2766, 2774, 2826, 2832, 2865, 2891, 2918, 3071, 3090, 3105, 3117, 3169, 3172, 3259, 3306, 3366, 3368, 3414, 3425, 3533, 3553, 3569, 3625, 3640, 3678, 3712, 3719, 3749, 3758, 3760, 3778, 3796, 3826, 3830, 3831, 3835, 3856, 3857, 3868, 3883, 3894, 3895, 3898, 3899, 3900, 3901, 3935, 3939, 3942, 3944, 3948, 3953, 3959, 3963, 3966, 3967, 3970, 3974, 3975, 3990, 3991, 3992, 3993, 4010, 4016, 4019, 4021, 4022, 4028, 4030, 4045, 4048, 4049, 4056, 4071, 4084, 4088, 4096, 4102, 4109, 4110, 4111, 4123, 4135, 4141, 4148, 4149, 4159, 4160, 4164, 4167, 4173, 4176, 4178, 4181, 4182, 4215, 4241, 4271, 4277, 4291, 4294, 4300, 4311, 4335, 4337
- Green soybeans. *See* Soybean Seeds—Green
- Groundnuts. *See* Peanuts

Guam. *See* Oceania–Guam

HVP type soy sauce. *See* Soy Sauce, HVP Type (Non-Fermented or Semi-Fermented)

HVP. *See* Hydrolyzed Vegetable Protein (Non-Soy), or Soy Protein–Hydrolyzed (General)

Haage & Schmidt (Erfurt, Germany). 414, 446, 524

Haberlandt soybean variety. *See* Soybean Varieties USA–Haberlandt

Haberlandt, Friedrich J. (1826-1878, *Hochschule fuer Bodenculture*, Vienna, Austria). 210, 211, 222, 226, 227, 231, 233, 234, 237, 248, 249, 260, 262, 263, 267, 275, 324, 325, 339, 393, 399, 400, 414, 417, 449, 535, 537, 561, 562, 619, 641

Hain Celestial Group, Inc. (Uniondale, New York). Hain Food Group, Inc. before 30 May 2000. Hain Pure Food Co. since Nov. 1931. Founded in Oct. 1926 by Harold Hain as Hain Health Foods. 1132, 1527, 1536, 2074, 2120, 2186, 2559, 2678, 2887, 3175, 3832, 3937, 3975, 4000, 4148, 4187, 4250, 4265, 4299, 4360

Haldane Foods Group Ltd. (Newport Pagnell, Buckinghamshire, England). Including Regular Tofu Co., Realeat Foods, Direct Foods, Haldane Foods, Vegetarian Feasts, Vegetarian Cuisine, Genice, Uniso, and Granose Foods Ltd. Acquired by The Hain Celestial Group in fall 2006. 1735, 2417, 2730, 2757, 3100, 3218, 3506, 3560, 3740

Hamanatto. *See* Soy Nuggets

Hansa Muehle AG. *See* Oelmuehle Hamburg AG (Hamburg, Germany)

Hartz (Jacob) Seed Co. (Stuttgart, Arkansas). Founded by Jacob Hartz, Sr. (1888-1963) in 1942. Continued by Jake Hartz, Jr. (1920-). Acquired by Monsanto in April 1983. Headquarters at Des Moines, Iowa, since Jan. 1998. 1685, 2456, 3661, 3805, 3825, 4019

Harvesting and Threshing Soybeans (Including Use of Chemical Defoliation and Defoliant to Facilitate Harvesting). 222, 226, 324, 349, 393, 420, 421, 454, 455, 469, 477, 491, 570, 575, 641, 652, 726, 736, 737, 858, 951, 972, 1474, 1907, 1913, 2152, 2626, 2984, 3160, 3678, 3752

Hauser, Gayelord (1895-1984). Health foods pioneer, author, and lecturer in Los Angeles, California. 1517

Hawaii. *See* United States–States–Hawaii

Hay, soybean. *See* Feeds / Forage from Soybean Plants–Hay

Healing arts, alternative. *See* Medicine–Alternative

Health–Domestic science. *See* Domestic Science / Home Economics Movement in the United States

Health Foods–Manufacturers. 673, 855, 1132, 3955

Health Foods Distributors and Wholesalers–General and Other (1890s to 1960s). 1519, 3577

Health Foods Industry–Trade Associations–Natural Products Association (NPA). Named National Nutritional Foods Association (NNFA) until 15 July 2006. Founded in 1937 as the National Health Foods Association by Anthony Berhalter of Chicago. Renamed NNFA in 1970. 1595

Health Foods Movement and Industry in the United States–General (Started in the 1890s by Seventh-day Adventists). 517, 646, 1132, 1421, 1485, 1517, 1673, 1803, 2186, 2336, 2436, 3919, 4036, 4043, 4044

Health Foods Restaurants, Cafeterias, and Cafés / Cafes (1890s to 1960s). 4210, 4299

Health Foods Stores / Shops (mostly USA)–Early (1877 to 1970s). 855, 1391, 1565, 1636, 1649, 1650, 1777, 2729, 3503, 3577, 3921, 3967, 4299

Health Foods, Inc. (Des Plaines, Illinois). Wholesale Distributor of Health Foods and Natural Foods. Founded in 1936 by Samuel Middell. 2251, 3577

Health Valley (Los Angeles, then Montebello, California). Acquired by Natural Nutrition Group. Acquired by Hain Food Group of Uniondale, New York, on 18 May 1999. 2186, 2540, 2541, 2624, 3157, 3179

Health and Dietary / Food Reform Movements, especially from 1830 to the 1930s. 1517, 1688, 2664, 2687, 3124, 3154

Health claims. *See* Claim or Claims of Health Benefits–Usually Authorized by the FDA

Health foods distributors and wholesalers. *See* Balanced Foods, Inc. (New York City, and New Jersey), Health Foods, Inc. (Illinois), Kahan & Lessin Co. (California), Landstrom Co. (California)

Health foods manufacturers. *See* El Molino Mills

Health foods movement in Los Angeles, California. *See* Bragg, Paul Chappius, Carque, Otto, Davis, Adelle, El Molino Mills, Hauser, Gayelord

Heart disease and diet. *See* Cardiovascular Disease, Especially Heart Disease and Stroke

Hemagglutinins (Lectins or Soyin) (Proteins Which Agglutinate Red Blood Cells). 1857, 3713, 3718, 3828

Hemp Oil or Hempseed Oil (from the seeds of *Cannabis sativa*). 18, 188, 262, 330, 426, 638, 653

Hemp (*Cannabis sativa*)—Used as a Source of Fiber for Textiles or Paper, Protein (Edestin), or Seeds (*Asanomi*). Includes Marijuana / Marihuana. See Also Hemp Oil or Hempseed Oil. Does NOT include Wild Hemp (*Sesbania macrocarpa*) or Sunn Hemp (*Crotolaria juncea*) or Manila hemp (*Musa textilis*, a species of plantain). 1, 2, 5, 6, 7, 9, 15, 17, 21, 22, 26, 62, 66, 92, 137, 188, 195, 196, 209, 261, 262, 280, 292, 596, 703, 1513, 1995, 3358, 3533, 3840, 4072, 4073, 4187

Herbicides. See Weeds—Control and Herbicide Use

Heuschen-Schrouff B.V. (Landgraaf, Netherlands), Including Its Subsidiary SoFine Foods (The Latter Acquired by Vandemoortele Group on 23 June 2006). 3408, 3416, 3483

Hexane. See Solvents

Higashimaru. See Soy Sauce Companies (Asia)

Higeta. See Soy Sauce Companies (Asia)

Hinoichi / Hinode, House Foods & Yamauchi Inc. See House Foods America Corporation (Los Angeles, California)

Historical—Documents (Published After 1923) About Soybeans or Soyfoods Before 1900. 597, 1049, 1097, 1234, 1235, 1374, 2305, 2861, 2872, 3628, 4150, 4162, 4178, 4317

Historical—Documents about Food Uses of Soybeans in the USA before 1900. 173, 232, 312, 316, 317, 327, 332

Historical—Documents on Soybeans or Soyfoods Published Before 1900. 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336

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Historical—Earliest Commercial Product Seen of a Particular Type or Made in a Particular Geographic Area. 97, 106, 342, 394, 632, 835, 1155, 1964, 2855, 2953, 3445, 3580

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Historical—Earliest Document Seen That Mentions a Particular Soybean Variety. 493, 513, 534

Historical—Earliest Document Seen of a Particular Type. 708

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Historical—Earliest Document Seen on a Particular Subject. 1, 2, 6, 7, 9, 17, 18, 19, 21, 23, 25, 27, 31, 32, 38, 45, 47, 49, 52, 57, 61, 66, 67, 85, 86, 88, 90, 92, 93, 96, 97, 104, 127, 139, 140, 148, 153, 161, 163, 165, 194, 195, 198, 203, 210, 211, 222, 223, 243, 256, 277, 284, 295, 300, 304, 316, 319, 322, 342, 346, 374, 405, 417, 438, 448, 453, 455, 459, 469, 513, 516, 550, 554, 567, 570, 590, 685, 735, 749, 754, 1060, 1118, 1130, 1142, 1155, 1169, 1201, 1202, 1261, 1297, 1320, 1388, 1391, 1392, 1463, 1470,

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Hohnen Oil Co., Ltd. (Tokyo, Japan). Also spelled Hōnen or Honen. Formerly Suzuki Shoten (Suzuki & Co.). 603, 618, 685, 864, 865, 1068, 1171, 1205, 1336, 1357

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Meyer, Frank N. (1875-1918). USDA Plant Explorer in Asia. 414, 417, 534, 550, 551, 619

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MicroSoy Corporation (Jefferson, Iowa; Osaka, Japan). Formerly Nichii Co. and MYCAL Corp. 3664, 3902, 4277

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Microbial Proteins (Non-Photosynthetic Single-Cell Proteins, Including Fungi [Mycoproteins such as Quorn], Yeast, and Bacteria). 1118, 1539, 1632, 2134

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Miles Laboratories. *See* Worthington Foods, Inc. (Worthington, Ohio)

Milk, Non-Dairy, Non-Soy Milks and Creams Made from Nuts, Grains, Seeds, or Legumes, Such as Brazil Nuts, Cashews, Coconuts, Filberts, Hazelnuts, Hemp Seeds, Pecans, Pine Nuts,

- Pumpkin Seeds, Sunflower Seeds, Walnuts, etc. See also: Almond Milk, Amazake / Rice Milk, Peanut / Groundnut Milk, Sesame Milk. 353, 562, 564, 608, 673, 759, 1268, 1470, 1495, 1496, 1638, 1796, 1978, 2002, 2088, 2177, 2760, 3106, 3231, 3485, 3503, 3574, 3699, 3715, 3772, 3939
- Milk, almond. See Almond Milk and Cream. Also—Almonds Used to Flavor Soy milk, Rice Milk, etc.
- Milk, coconut / cocoanut. See Coconut Milk and Cream
- Milk, peanut. See Peanut Milk
- Milk, rice. See Rice Milk (Non-Dairy)
- Milk, sesame. See Sesame Milk
- Milk, soy. See Soy milk
- Miller, Harry W. (M.D.) (1879-1977) and International Nutrition Laboratory (Mt. Vernon, Ohio). 1207, 1327, 1583, 1774, 1783, 1787, 1889, 2100, 2661, 4028, 4173, 4294, 4335
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- Minerals. See Aluminum in Soybeans and Soyfoods, Aluminum in the Diet and Cooking Utensils—Problems. Soy Is Not Mentioned, Calcium Availability, Absorption, and Content of Soy
- Minnesota. See United States—States—Minnesota
- Miso (Japanese-style Soybean Paste). See also: Jiang—for Chinese-style Miso. Jang—for Korean-style Miso. 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Miso, early non-soy paste made with meat and fish in China or Japan. *See* Jiang—Early Non-Soy

Miso, soybean—Chinese-Style. *See* Jiang—Chinese-Style Fermented Soybean Paste

Miso, soybean—Korean-style. *See* Jang—Korean-Style Fermented Soybean Paste

Missouri. *See* United States—States—Missouri

Mitoku (Tokyo, Japan). 1354, 1458, 1536, 1565, 1659, 1696, 1697, 1714, 1730, 1732, 1791, 1832, 1843, 1935, 1939, 1940, 1949, 1996, 2015, 2223, 2384, 2447, 2458, 2468, 2470, 2471, 2527, 2629, 2641, 2744, 2840, 2855, 2890, 2947, 2996, 3133, 3252, 3264, 3266, 3289, 3291, 3298, 3309, 3323, 3370, 3400, 3410, 3419, 3470, 3499, 3545, 3548, 3560, 3582, 3588, 3589, 3590, 3591, 3612, 3613, 3615, 3630, 3631, 3646, 3657, 3693, 3697, 3807, 3818, 3819, 3820, 3839, 3932, 4039, 4040, 4041, 4053, 4064, 4115, 4117, 4120, 4121, 4126, 4216, 4240

Mitsui & Co., Ltd. (Mitsui Bussan Kaisha, Japanese Trading Co., founded 1876). 420, 435, 874, 3183, 3792, 3795, 3801

Miyako Oriental Foods (Baldwin Park, California). 602, 1831, 1845, 1887, 1935, 1984, 2011, 2039, 2041, 2043, 2060, 2165, 2219, 2273, 2450, 2510, 2546, 2617, 2853, 2878, 2927, 2970, 2995, 3155, 3188, 3252, 3262, 3266, 3290, 3406, 3437, 3491, 3493, 3500, 3612, 3622, 3640, 3695, 3743, 3770, 3800, 3804, 3912, 3941, 4035, 4064, 4130, 4137, 4152, 4265, 4347, 4362

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Monsanto Co. (St. Louis, Missouri) and its HybriTech Seed International subsidiary. Acquired Jacob Hartz Seed Co. in April 1983. Acquired Asgrow in April Feb. 1997. Merged with Pharmacia & Upjohn on 31 March 2000 and was renamed Pharmacia Corp. 3805, 3825, 3902, 3975, 4015, 4019, 4148

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- Morphology, soybean. *See* Soybean–Morphology, Structure, Anatomy, Soybean–Morphology, Structure, and Anatomy
- Morse, William J. (1884–1959, USDA Soybean Expert). 446, 534, 535, 598, 641, 643, 652, 708, 715, 718, 719, 729, 730, 731, 732, 733, 734, 736, 737, 738, 739, 747, 748, 750, 751, 754, 767, 784, 798, 855, 915, 958, 980, 1013, 2731, 3835
- Motion Pictures or References to Motion Pictures. Also called Movies, Films, or Documentaries. 737, 1093, 1696
- Mottled, speckled, or spotted soybeans. *See* Soybean Seeds–Mottled
- Movies or films. *See* Motion Pictures
- Mucuna pruriens. *See* Velvet Beans
- Mull-Soy. *See* Borden Inc.
- Mung Bean / Mungbean and Mung Bean Sprouts. *Vigna radiata* L. Formerly *Phaseolus aureus*. Also called Green Gram. Chinese–Lüdou. Japanese–Moyashi. Indonesian: Kacang / katjang + hijau / ijo / hidjau. German–Buschbohne. French–Haricot Mungo. 16, 32, 62, 66, 83, 84, 177, 219, 286, 349, 381, 412, 420, 435, 516, 554, 559, 575, 642, 653, 690, 759, 910, 949, 952, 976, 989, 1207, 1256, 1374, 1387, 1474, 1571, 1598, 1608, 1612, 1614, 1646, 1739, 1747, 1750, 1775, 1910, 1943, 2074, 2088, 2134, 2287, 2299, 2370, 2421, 2467, 2496, 2507, 2566, 2574, 2691, 2715, 2723, 3434, 3452, 3482, 3538, 3560, 3562, 3695, 4057, 4072
- Muramoto, Noboru–His Life and Work with Macrobiotics, Organizations He Founded, and Commercial Products He Made or Inspired. 1660, 1682, 1856, 1941, 1999, 2038, 2044, 2135, 2274, 2514, 2687, 2688, 2694, 2753, 2788, 2789, 2801, 2854, 2858, 2929, 2931, 2953, 3010, 3204, 3280, 3289, 3307, 3331, 3355, 3437, 4062, 4063, 4064, 4219
- Muso Shokuhin (Osaka, Japan). 1354, 1408, 1422, 1423, 1458, 1459, 1469, 1488, 1565, 1659, 1696, 1697, 1714, 1790, 1799, 1843, 1916, 1931, 1939, 1940, 1949, 2046, 2186, 2447, 2470, 2472, 2530, 2533, 2590, 2640, 2641, 2687, 2775, 2846, 2898, 2929, 2947, 2996, 3337, 3338, 3370, 3379, 3407, 3410, 3418, 3437, 3494, 3504, 3546, 3560, 3562, 3577, 3618, 3629, 3630, 3631, 3633, 3638, 3647, 3693, 3738, 3858, 3859, 4115, 4120, 4121
- Mycorrhiza. *See* Soybean–Physiology–Mycorrhiza / Mycorrhizal Relations
- Myths of soybean history–debunking / dispelling. *See* History of the Soybean–Myths and Early Errors Concerning Its History
- Names for soybeans–Fanciful. *See* Soybean Terminology and Nomenclature–Fanciful Terms and Names
- Nasoya Foods, Inc. (Leominster, Massachusetts). Subsidiary of Vitasoy Since Aug. 1990. 2018, 2050, 2487, 2624, 2746, 2777, 2794, 2808, 2898, 2902, 2945, 3123, 3157, 3166, 3175, 3179, 3253, 3266, 3290, 3582, 3614, 3640, 3812, 3872, 3940, 3970, 3975, 4347
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- National Food Research Institute (NFRI) (Tsukuba, Ibaraki-ken, Japan). 1001, 1030, 1034, 1035, 1039, 1040, 1054, 1055, 1056, 1057, 1073, 1087, 1088, 1110, 1111, 1114, 1128, 1129, 1140, 1148, 1149, 1150, 1151, 1152, 1154, 1162, 1169, 1186, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1236, 1237, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1286, 1304, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1318, 1328, 1348, 1349, 1350, 1351, 1352, 1353, 1363, 1364, 1367, 1379, 1381, 1382, 1383, 1396, 1398, 1406, 1413, 1414, 1415, 1417, 1428, 1429, 1430, 1431, 1432, 1444, 1445, 1461, 1465, 1466, 1467, 1468, 1490, 1491, 1492, 1493, 1494, 1505, 1506, 1507, 1508, 1509, 1515, 1520, 1523, 1524, 1525, 1548, 1562, 1572, 1573, 1574, 1575, 1577, 1585, 1586, 1588, 1600, 1604, 1611, 1625, 1642, 1643, 1644, 1645, 1665, 1690, 1715, 1752, 1781, 1821, 1822, 1865, 1881, 1882, 1883, 1884, 1888, 1932, 1933, 1957, 2013, 2096, 2097, 2150, 2152, 2197, 2205, 2206, 2558, 2612, 2621, 2626, 2762, 2764, 2812, 2835, 2836, 2837, 2838, 2892, 2893, 2894, 2897, 2948, 2949, 3009, 3135, 3214, 3286, 3420, 3523, 3536, 3581, 3691, 3797
- National Nutritional Foods Association (NNFA). *See* Health Foods Industry–Trade Associations–National Nutritional Foods Association (NNFA)
- National Oilseed Processors Assoc. (NOPA) (National Soybean Oil Manufacturers Association from May 1930 to 1935; National Soybean Processors Assoc. [NSPA] from June 1936 to Aug. 1989. Washington, DC. Including Soy Flour Assoc. [1936–1949], Soya Food Research Council [1936], and Soybean Nutritional Research Council [1937]). 1674
- Natto (Whole Soybeans Fermented with *Bacillus natto*). 65, 90, 98, 99, 118, 121, 124, 126, 144, 149, 181, 186, 191, 192, 197, 213, 266, 270, 271, 296, 303, 305, 309, 312, 313, 316, 317, 319, 324, 332, 334, 339, 341, 343, 346, 351, 355, 360, 363, 364, 375,

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Natural Foods Distributors and Master Distributors (USA). *See* Arrowhead Mills (Hereford, Deaf Smith County, Texas), Ceres (Colorado Springs, Colorado), Eden Foods, Inc. (Clinton, Michigan). Founded 4 Nov. 1969, Erewhon (Boston, Massachusetts), Erewhon—Los Angeles / West, Essene Traditional Foods (Philadelphia, Pennsylvania), Food for Life (Illinois), Great Eastern Sun and Macrobiotic Wholesale Co. (North Carolina), Health Valley (Los Angeles, then Montebello, California), Infinity Food Co. Renamed Infinity Company by 1973 (New York City), Janus Natural Foods (Seattle, Washington), Laurelbrook Natural Foods (Bel Air, Maryland), Midwest Natural Foods (Ann Arbor, Michigan), Stow Mills, Inc. (Brattleboro, Vermont) Lama Trading Co., Tree of Life (St. Augustine, Florida), United Natural Foods, Inc. (UNFI), Well (The), Pure & Simple, and New Age Distributing Co. (San Jose, California), Westbrae Natural Foods, Inc. (Berkeley, California)

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Soy Ice Cream (General—Usually Non-Dairy). 567, 783, 1020, 1487, 1511, 1674, 1783, 1787, 1796, 1850, 1979, 2009, 2012, 2068, 2074, 2094, 2098, 2100, 2103, 2159, 2327, 2329, 2500, 2509, 2559, 2560, 2587, 2620, 2644, 2660, 2661, 2664, 2665, 2678, 2731, 2746, 2777, 2808, 2811, 2863, 2870, 2887, 2902, 2924, 2932, 2950, 2985, 2998, 3007, 3050, 3064, 3092, 3109, 3131, 3137, 3157, 3168, 3175, 3178, 3185, 3195, 3200, 3205, 3258, 3287, 3306, 3308, 3326, 3362, 3365, 3366, 3368, 3376, 3405, 3409, 3445, 3460, 3488, 3507, 3555, 3566, 3574, 3611, 3659, 3664, 3680, 3681, 3684, 3703, 3721, 3736, 3740, 3813, 3814, 3826, 3834, 3856, 3879, 3899, 3931, 3937, 3942, 3954, 3955, 3963, 3967, 3991, 3995, 4028, 4067, 4096, 4155, 4159, 4173, 4176, 4180, 4192, 4235, 4294, 4316, 4331, 4335, 4360

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Soy Nuggets—Whole Soybeans Fermented with Salt—Also called Fermented Black Beans, Salted Black Beans, Salty Black Beans, Black Fermented Beans, Black Beans, Black Bean Sauce, Black Bean and Ginger Sauce, Chinese Black Beans, or Preserved Black Beans. In China (Mandarin): Shi, Doushi, or Douchi (pinyin), Tou-shih, Touthih, or Tou-ch'ih (Wade-Giles). Cantonese: Dow see, Dow si, Dow-si, Dowsi, or Do shih. In the Philippines: Tausi

or Taosi / Tao-si. In Malaysia or Thailand: Tao si. In Indonesia: Tao dji, Tao-dji, or Tao-djie. In Japan: Hamanatto, Daitokuji Natto, Shiokara Natto, and Tera Natto. 9, 10, 12, 13, 16, 18, 19, 21, 22, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 38, 44, 46, 54, 55, 56, 62, 65, 66, 68, 69, 70, 75, 77, 78, 83, 84, 86, 92, 115, 123, 124, 126, 128, 133, 137, 138, 159, 160, 178, 179, 200, 204, 222, 231, 262, 286, 287, 307, 314, 330, 333, 343, 351, 357, 387, 419, 463, 470, 477, 480, 548, 549, 575, 641, 642, 653, 667, 670, 673, 674, 699, 703, 715, 726, 738, 745, 759, 760, 783, 854, 856, 857, 874, 910, 952, 957, 972, 978, 987, 988, 989, 991, 1007, 1014, 1015, 1020, 1043, 1061, 1097, 1109, 1123, 1124, 1141, 1174, 1201, 1207, 1209, 1234, 1263, 1321, 1334, 1335, 1336, 1337, 1341, 1361, 1368, 1374, 1386, 1393, 1404, 1437, 1440, 1441, 1442, 1449, 1462, 1477, 1487, 1497, 1504, 1553, 1561, 1562, 1591, 1610, 1613, 1629, 1630, 1634, 1664, 1674, 1678, 1679, 1684, 1710, 1728, 1746, 1747, 1751, 1783, 1787, 1792, 1795, 1818, 1823, 1824, 1827, 1841, 1842, 1854, 1860, 1875, 1881, 1883, 1884, 1902, 1907, 1909, 1910, 1912, 1922, 1969, 1977, 1989, 1995, 2006, 2021, 2039, 2065, 2067, 2082, 2084, 2099, 2100, 2108, 2121, 2163, 2184, 2188, 2224, 2263, 2264, 2265, 2287, 2288, 2294, 2303, 2304, 2311, 2321, 2326, 2337, 2344, 2353, 2354, 2372, 2409, 2424, 2433, 2465, 2481, 2484, 2534, 2552, 2558, 2572, 2582, 2638, 2652, 2661, 2662, 2679, 2714, 2774, 2792, 2798, 2799, 2826, 2862, 2865, 2872, 2883, 2891, 2923, 2965, 2971, 2977, 2984, 2991, 3016, 3076, 3085, 3088, 3090, 3096, 3110, 3111, 3147, 3172, 3228, 3262, 3287, 3297, 3306, 3358, 3359, 3366, 3414, 3425, 3452, 3453, 3454, 3455, 3461, 3496, 3502, 3557, 3569, 3603, 3633, 3677, 3684, 3713, 3718, 3728, 3770, 3809, 3840, 3848, 3860, 3879, 3896, 3906, 3923, 3943, 3946, 3957, 4019, 4022, 4028, 4071, 4072, 4110, 4150, 4155, 4162, 4173, 4178, 4182, 4186, 4197, 4245, 4280, 4284, 4294, 4301, 4335, 4337, 4342

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Soy Oil Constants. Includes Index of Refraction, Refractive Index, Solidification Point (*Erstarrungspunkt*), Specific Gravity. See also Iodine Number. 312, 415, 661, 3939

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- Soymilk Curds. *See* Curds Made from Soy milk
- Soymilk Equipment Companies (Europe). *See* APV Systems, Soya Technology Division. Formerly named Danish Turnkey Dairies Ltd., Alfa-Laval (Lund, Sweden), Tetra Pak International (Lund, Sweden)
- Soymilk Industry and Market Statistics, Trends, and Analyses—By Geographical Region. 1320, 2004, 2344, 2366, 2395, 2487, 2618, 2777, 2826, 2830, 2831, 2870, 2902, 2924, 3018, 3044, 3050, 3056, 3105, 3131, 3134, 3137, 3168, 3183, 3205, 3319, 3346, 3411, 3415, 3487, 3488, 3507, 3564, 3644, 3740, 3763, 3792, 3806, 3813, 3814, 3884, 3937, 3986, 4139, 4151, 4295
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- Soymilk companies (USA). *See* American Soy Products (Saline, Michigan), Vitasoy, WholeSoy & Co. (subsidiary of TAN Industries, Inc., California)
- Soymilk shakes. *See* Shakes
- Soymilk, Fermented—Non-Soy, Non-Dairy Fermented Milks Made from Plants. 3534
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Stephens, Arran. See Lifestream Natural Foods Ltd. and Nature's Path (BC, Canada)

Sterols or Steroid Hormones in Soybeans (Phytosterols—Including Beta-Sitosterol, Campesterol, and Stigmasterol from Which Steroids Such as Progesterone, Hydrocortisone, and Cortisone Can Be Made). 1251, 2971, 3071

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Stow Mills, Inc. Including Llama Toucan & Crow (Brattleboro, Vermont), and Lama Trading Co. 1843, 1850, 1852, 2009, 2018, 2447, 3689, 4119

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Strayer Family of Iowa—Incl. George Strayer (1910-1981; executive officer of the American Soybean Association 1940-1967), His Father Bert Strayer (1880-1941), and His Nephew Dennis Strayer (born 1938). 1060, 1068, 1850, 3795, 3877

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SunOpta, Inc. (Toronto, Ontario, Canada). Formerly SunRich Food Group (Hope, Minnesota). Formerly Minnesota Waxy Corn Growers Export Inc., Minnesota Edamame, Jameson-Williams Co. Acquired by Stake Technology Ltd. (Norval, Ontario, Canada) in July 1999, Stake changes its name to SunOpta on 31 Oct. 2003. 3830, 3883, 3902, 4187

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Sunflower Seeds and Sunflowers (*Helianthus annuus*)—Including Sunflowerseed Oil, Cake, and Meal. Once called the Heliotrope, Heliotropion, and Heliotropium. 92, 261, 534, 566, 641, 1118, 1495, 1519, 1538, 1541, 1593, 1595, 1598, 1612, 1637, 1646, 1647, 1658, 1677, 1739, 1772, 1773, 1843, 1927, 2084, 2120, 2159, 2186, 2219, 2370, 2507, 2664, 2686, 2986, 3185, 3186, 3193, 3231, 3406, 3416, 3429, 3538, 3586, 3629, 3939, 3992, 4134, 4242, 4247

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- Swan Food Corp. (Miami, Florida). Started in 1977 by Robert Brooks and Mary Pung. 2061, 2358, 2466, 4039
- Swan Gardens Inc. and Soya Kaas Inc. (Atlanta, Georgia). 2794, 3123, 3157, 3195, 3289, 3664
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- Swift & Co. (Chicago, Champaign, and Oak Brook, Illinois). 1674
- Sword Beans. *Canavalia gladiata* (Jacq.) D.C. 224
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- Sycamore Creek Co. (Mason, Michigan). Before 1993, INARI, Ltd.—International Nutrition and Resources Inc. Purchased by W.G. Thompson & Sons Ltd. of Canada, Jan. 1999. 1950, 2217, 2895
- Tahini or tahina or tahin. *See* Sesame Butter
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- Teriyaki Sauce and Teriyaki (Soy Sauce is the Main Sauce Ingredient). 378, 1029, 1121, 1123, 1228, 1265, 1266, 1450, 1479, 1482, 1567, 1750, 1758, 1905, 2100, 2300, 2302, 2307, 2577, 2746, 2876, 2943, 2963, 2969, 3433, 3496, 3539, 3582, 3664, 3826, 3864, 3866, 3899, 3931, 3933, 3967, 3970, 3990, 3993, 4007, 4016, 4022, 4050, 4071, 4096, 4167, 4184, 4196, 4217, 4230, 4325
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- Textured soy flours. *See* Soy Flours, Textured (Including TVP, Textured Vegetable Protein)
- Textured soy protein concentrates. *See* Soy Protein Concentrates, Textured
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- Tofu (Also Called Soybean Curd or Bean Curd until about 1975–1985). *See* also Tofu—Fermented, Soy Ice Creams, Soy Yogurts, and Cheesecake, Which Often Use Tofu as a Major Ingredient. 49, 52, 54, 55, 56, 57, 62, 65, 66, 68, 80, 82, 83, 84, 86, 88, 89, 90, 92, 93, 107, 115, 118, 119, 120, 124, 128, 143, 149, 154, 156, 157, 159, 162, 165, 166, 167, 169, 172, 176, 178, 179, 181, 184, 186, 187, 191, 192, 194, 195, 196, 197, 199, 200, 201, 204, 205, 207, 209, 210, 212, 213, 214, 215, 218, 221, 222, 223, 224, 225, 227, 228, 231, 232, 234, 236, 237, 239, 240, 241, 245, 247, 248, 249, 250, 255, 262, 263, 265, 266, 267, 268, 269, 270, 271, 273, 275, 278, 279, 280, 282, 283, 284, 286, 287, 288, 289, 291, 292, 294, 297, 298, 303, 304, 306, 307, 310, 312, 314, 316, 317, 318, 319, 320, 323, 325, 326, 327, 329, 330, 331, 332, 333, 334, 338, 340, 341, 343, 344, 345, 346, 347, 349, 353, 355, 356, 359, 360, 361, 363, 364, 365, 370, 372, 373, 374, 376, 381, 382, 385, 386, 391, 392, 393, 397, 398, 399, 400, 405, 406, 407, 408, 411, 412, 414, 415, 417, 420, 421, 422, 427, 432, 433, 435, 436, 438, 441, 442, 443, 444, 446, 447, 448, 449, 450, 451, 453, 454, 455, 456, 458, 460, 462, 463, 469, 471, 477, 480, 489, 491, 493, 496, 500, 502, 503, 507, 508, 510, 511, 512, 514, 516, 517, 519, 520, 521, 522, 524, 526, 527, 528, 529, 530, 531, 532, 534, 535, 537, 539, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 553, 554, 555, 556, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 570, 571, 572, 573, 574, 575, 577, 578, 580, 590, 594, 597, 598, 603, 604, 605, 606, 608, 611, 616, 618, 619, 620, 621, 625, 633, 636, 637, 639, 641, 642, 644, 649, 651, 652, 653, 655, 659, 664, 666, 668, 670, 673, 675, 684, 686, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 705, 708, 711, 715, 718, 724, 725, 726, 731, 732, 734, 735, 736, 737, 744, 746, 749, 751, 754, 758, 759, 760, 762, 765, 766, 767, 768, 771, 777, 782, 783, 786, 788, 797, 798, 799, 804, 820, 837, 838, 841, 848, 855, 856, 857, 858, 860, 861, 863, 867, 873, 874, 876, 878, 882, 893, 896, 910, 912, 913, 914, 924, 926, 928, 929, 930, 931, 940, 948, 949, 951, 952, 955, 956, 958, 959, 960, 961, 962, 964, 965, 971, 972, 977, 978, 980, 985, 987, 989, 991, 992, 993, 994, 996, 998, 1002, 1005, 1006, 1007, 1011, 1012, 1013, 1020, 1021, 1022, 1025, 1028, 1037, 1038, 1043, 1044, 1046, 1047, 1048, 1052, 1060, 1061, 1063, 1065, 1068, 1070, 1075, 1083, 1089, 1090, 1091, 1092, 1093, 1095, 1108, 1109, 1110, 1111, 1113, 1114, 1117, 1118, 1121, 1123, 1127, 1132, 1136, 1139, 1140, 1141, 1142, 1152, 1153, 1157, 1158, 1162, 1163, 1164, 1168, 1169, 1171, 1172, 1173, 1174, 1178, 1179, 1180, 1183, 1196, 1197, 1198, 1201, 1202, 1207, 1208, 1209, 1211, 1212, 1216, 1220, 1223, 1224, 1228, 1229, 1231, 1238, 1239, 1249, 1250, 1252, 1253, 1254, 1256, 1260, 1261, 1265, 1266, 1268, 1270, 1284, 1286, 1287, 1288, 1289, 1292, 1295, 1301, 1302, 1319, 1320, 1324, 1327, 1333, 1334, 1335, 1336, 1337, 1339, 1340, 1341, 1344, 1353, 1354, 1357, 1360, 1366, 1368, 1369, 1372, 1373, 1374, 1384, 1385, 1387, 1388, 1390, 1394, 1402, 1403, 1418, 1419, 1424, 1437, 1438, 1440, 1441, 1446, 1447, 1450, 1453, 1460, 1461, 1463, 1470, 1471, 1474, 1479, 1480, 1481, 1482, 1486, 1487, 1489, 1500, 1512, 1516, 1517, 1518, 1519, 1528, 1538, 1554, 1557, 1558, 1561, 1562, 1569, 1571, 1579, 1583, 1584, 1588, 1592, 1594, 1598, 1606, 1607, 1608, 1609, 1610, 1612, 1614, 1623, 1625, 1628, 1629, 1630, 1631, 1634, 1638, 1645, 1649, 1650, 1651, 1652, 1653, 1656, 1660, 1664, 1665, 1670, 1671, 1672, 1673, 1674, 1676, 1679, 1680, 1682, 1683, 1684, 1685, 1690, 1692, 1694, 1695, 1696, 1697, 1698, 1700, 1703, 1704, 1707, 1710, 1712, 1728, 1729, 1734, 1736, 1738, 1739, 1743, 1744, 1745, 1746, 1747,

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Tofu—Etymology of This Term and Its Cognates / Relatives in Various Languages. 49, 65, 90, 154, 165, 178, 179, 184, 186, 194, 195, 200, 204, 210, 212, 218, 222, 236, 239, 265, 266, 271, 288, 304, 330, 340, 373, 393, 436, 455, 491, 514, 597, 606, 619, 684, 692, 705, 726, 736, 759, 924, 964, 1043, 1172, 1373, 1610, 1664, 1672, 1783, 1785, 1787, 1910, 1912, 2065, 2353, 2424, 3437, 3817, 4335

Tofu—Marketing of. 1864, 2231, 2382, 2516, 2746, 3022, 3376, 3664

Tofu Equipment. 372, 453, 477, 2139, 2358, 3441

Tofu Industry and Market Statistics, Trends, and Analyses—By Geographical Region. 213, 692, 754, 1013, 1060, 1089, 1164, 1168, 1202, 1208, 1232, 1284, 1286, 1302, 1333, 1357, 1388, 1419, 1588, 1707, 1729, 1783, 1787, 1850, 1852, 1912, 1913, 1937, 1952, 1987, 2001, 2004, 2198, 2225, 2288, 2338, 2344, 2366, 2395, 2397, 2487, 2556, 2644, 2655, 2777, 2825, 2826, 2830, 2870, 2902, 2924, 2932, 3050, 3093, 3131, 3137, 3139, 3168, 3183, 3205, 3295, 3319, 3334, 3346, 3403, 3411, 3415, 3460, 3487, 3488, 3509, 3581, 3636, 3644, 3659, 3661, 3740, 3745, 3763, 3776, 3789, 3792, 3797, 3813, 3814, 3884, 3887, 3986, 4030, 4139, 4145, 4295, 4335

Tofu Industry and Market Statistics, Trends, and Analyses—Larger Companies. 1232, 2009, 2012, 2018, 2148, 2358, 2500, 2520, 2592, 2619, 2777, 2815, 2895, 2902, 3134, 3184, 3185, 3186, 3283, 3295, 3403, 3410, 3483, 3740, 3875, 3887

Tofu Industry and Market Statistics, Trends, and Analyses—Smaller Companies. 2440, 2620, 2739, 3445, 3482, 3499, 3580

Tofu International Ltd. and Rosewood Products Inc. (Ann Arbor, Michigan) (The Soy Plant before 1987). 2029, 2031, 2033, 2041, 2042, 2094, 2098, 2103, 2115, 2130, 2136, 2158, 2171, 2210, 2234, 2320, 2382, 2467, 2895, 3290, 3513, 3743

Tofu Kit or Press (Kits or Presses Used for Making Tofu at Home). 685, 1850, 1852, 2011, 2080, 2139, 2219, 2466, 2519, 3406, 3711, 3853, 3858, 3860, 4018, 4276

Tofu Shop (The) (Telluride, Colorado, and Arcata, California) and Tofu Shop Specialty Foods Inc. 1954, 2113, 2130, 2454, 2496, 2550, 2736, 2868, 3902, 4174, 4220, 4221, 4222

Tofu companies (Asia). *See* Asahimatsu Shokuhin (Japan)

Tofu companies (Canada). *See* Sunrise Markets Inc. (Vancouver, BC, Canada), Victor Food Products, Ltd. (Scarborough, Ontario, Canada)

Tofu companies (Europe). *See* Cauldron Foods Ltd. (Bristol, England), Heuschen-Schrouff B.V. (Landgraaf, Netherlands), Sojadoc (Clermond-Ferrand, France), Sojarei Vollwertkost GmbH (Traiskirchen, near Vienna, Austria). Formerly Sojarei Ebner-Prosl, Soyastern Naturkost GmbH / Dorstener Tofu Produktions GmbH (Dorsten, Germany), Tofurei Svadesha Naturkost Produkte GmbH (Munich, Germany). Including Byodo Naturkost

Tofu companies (USA). *See* Azumaya, Inc. (San Francisco, California), House Foods America Corporation (Los Angeles, California), Island Spring, Inc. (Vashon, Washington), Legume, Inc. (Fairfield, New Jersey), Morinaga Nutritional Foods, Inc., and Morinaga Nyûgyô (Torrance, California, and Tokyo, Japan), Nasoya Foods, Inc. (Leominster, Massachusetts). Subsidiary of Vitasoy, Northern Soy, Inc. (Rochester, New York), Ota Tofu Co. (Portland, Oregon. Founded in 1911), Pulmuone U.S.A., Inc. (South Gate, California), Quong Hop & Co. (South San Francisco, California), Simply Natural, Inc. (Philadelphia, Pennsylvania), Swan Gardens Inc. and Soya Kaas Inc. (Atlanta, Georgia), Tofu International Ltd. and Rosewood Products Inc. (Ann Arbor,

Michigan), Tofu Shop (The) (Telluride, Colorado, and Arcata, California) and Tofu Shop Specialty Foods Inc., Tomsun Foods, Inc. (Greenfield, Massachusetts; Port Washington, New York, Wildwood Harvest, Inc.

Tofu in Second Generation Products, Documents About. 1783, 1787, 2130, 2136, 2338, 2358, 2454, 2500, 2502, 2516, 2678, 2746, 2794, 2808, 2811, 2888, 3030, 3144, 3184, 3185, 3186, 3290, 3314, 3330, 4252, 4335

Tofu, Criticism of, Making Fun of, or Image Problems. 2103, 2567, 3815, 3817, 3829, 3876, 4181

Tofu, Fermented (Also Called *Doufu-ru*, *Toufu-ru*, *Furu*, *Fuyu*, *Tahuri*, *Tahuli*, *Tajure*, *Tao-hu-yi*, or *Sufu*). *See also* *Tofu-yo*. 112, 133, 215, 222, 231, 286, 287, 333, 342, 407, 451, 453, 477, 480, 534, 550, 575, 610, 641, 644, 667, 705, 706, 708, 739, 759, 783, 835, 847, 855, 856, 873, 910, 952, 979, 983, 988, 989, 991, 994, 1003, 1007, 1037, 1043, 1109, 1115, 1123, 1132, 1144, 1178, 1207, 1209, 1261, 1321, 1330, 1337, 1368, 1386, 1393, 1406, 1442, 1449, 1462, 1474, 1487, 1497, 1504, 1553, 1562, 1570, 1587, 1613, 1615, 1630, 1664, 1674, 1679, 1684, 1692, 1693, 1710, 1746, 1747, 1779, 1783, 1785, 1787, 1792, 1795, 1808, 1813, 1818, 1824, 1847, 1896, 1902, 1907, 1912, 1969, 1989, 2026, 2041, 2065, 2066, 2067, 2072, 2073, 2084, 2100, 2102, 2108, 2110, 2114, 2121, 2170, 2175, 2184, 2188, 2224, 2244, 2255, 2263, 2264, 2268, 2280, 2287, 2288, 2304, 2306, 2311, 2321, 2326, 2334, 2344, 2353, 2354, 2371, 2408, 2409, 2419, 2421, 2424, 2465, 2557, 2571, 2572, 2582, 2638, 2645, 2652, 2661, 2662, 2673, 2691, 2721, 2723, 2729, 2737, 2773, 2774, 2793, 2798, 2826, 2862, 2881, 2887, 2891, 2902, 2923, 2965, 2977, 3002, 3020, 3034, 3040, 3042, 3071, 3073, 3074, 3085, 3088, 3090, 3095, 3096, 3106, 3110, 3111, 3172, 3227, 3228, 3234, 3287, 3306, 3350, 3359, 3361, 3414, 3425, 3455, 3459, 3479, 3495, 3502, 3522, 3533, 3536, 3562, 3603, 3675, 3677, 3695, 3713, 3718, 3740, 3760, 3831, 3913, 3917, 3923, 3944, 3952, 4028, 4071, 4072, 4150, 4155, 4173, 4181, 4294, 4335, 4342

Tofu, Fermented—Etymology of This Term and Its Cognates / Relatives in Various Languages. 112, 286, 667, 706, 739, 1007, 1043, 1123, 1144, 1321, 1474, 1587, 1747, 2100, 2304, 2371

Tofu, Fermented—Tofu-yo from Okinawa, Japan (Made with Red Rice [*Beni-Koji*] Containing *Monascus purpureus*). 2170, 2793

Tofu, Five-Spice Pressed (*Wu-hsiang Toufukan* / *Wuxiang Doufugan*). 1209, 1368, 1783, 1787, 2287, 3326, 3938, 4335

Tofu, Flavored / Seasoned / Marinated and Baked, Broiled, Grilled, Braised, or Roasted. Including Tofu Jerky and Savory Baked Tofu. 2061, 2159, 2259, 2358, 3104, 3186, 3664, 3856, 3995

Tofu, Flavored, Seasoned, or Marinated, but not Baked, Broiled, Grilled, Braised, or Roasted. Including most Five-Spice Pressed Tofu (*wu-hsiang toufukan* / *wuxiang doufugan*). 1209, 1783, 1787, 2287, 3184, 3326, 3914, 3938, 4335

Tofu, Fried (Especially Pouches, Puffs, Cutlets, or Burgers; Agé or Aburagé, Atsu-agé or Nama-agé, Ganmodoki or Ganmo). 62, 90, 186, 192, 197, 266, 271, 327, 363, 375, 376, 516, 564, 567, 575, 594, 605, 609, 667, 684, 692, 703, 788, 860, 913, 931, 958, 960, 1019, 1063, 1109, 1121, 1158, 1164, 1174, 1179, 1180, 1183, 1197, 1208, 1212, 1284, 1297, 1333, 1373, 1419, 1438, 1479, 1482, 1511, 1557, 1571, 1583, 1588, 1592, 1606, 1608, 1628, 1631, 1660, 1664, 1665, 1670, 1671, 1680, 1693, 1696, 1697, 1743, 1749, 1750, 1752, 1783, 1787, 1823, 1905, 1910, 1912, 1922, 1952, 1954, 1969, 2001, 2004, 2009, 2012, 2041, 2061, 2100, 2103, 2130, 2146, 2173, 2174, 2176, 2259, 2285, 2287, 2288, 2307, 2334, 2393, 2412, 2421, 2424, 2469, 2482, 2538, 2555, 2577, 2585, 2587, 2622, 2644, 2652, 2655, 2661, 2691, 2720, 2721, 2723, 2738, 2774, 2798, 2815, 2865, 2870, 2911, 2969, 3017, 3030, 3038, 3040, 3071, 3101, 3107, 3128, 3215, 3306, 3317, 3326, 3366, 3414, 3433, 3452, 3482, 3533, 3543, 3566, 3568, 3569, 3611, 3636, 3664, 3675, 3686, 3689, 3699, 3706, 3746, 3792, 3797, 3822, 3823, 3831, 3901, 3931, 3940, 3944, 3957, 4027, 4028, 4072, 4109, 4150, 4173, 4181, 4182, 4194, 4217, 4294, 4335

Tofu, Fried, Used as an Ingredient in Commercial Soyfood Products. 2210

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- Vegetable oils. *See* Specific Oilseeds such as Peanut Oil, Sesame Oil, Sunflower Oil, etc
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- White Wave, Inc. (Boulder, Colorado). Including Soyfoods Unlimited. Owned by Dean Foods Co. since 8 May 2002. 2064, 2130, 2159, 2160, 2363, 2487, 2516, 2618, 2746, 2777, 2808,

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